The Undergraduate Course Handbook is published each year. Students should carefully read all official correspondence and university noticeboards to be aware of changes to this information.

Caution
While Swinburne University of Technology has used all reasonable care and skill in collating and presenting the information, the university cannot guarantee or take responsibility for the accuracy of the information provided. The information contained in this handbook is as correct as possible at the date of publication, being December 2007.

Swinburne University of Technology is committed to providing a learning and working environment that is based on equality of opportunity for all.

How to use this Handbook
The Undergraduate Course Handbook is a complete reference for prospective and current students to the university's academic programs and structures.

This handbook is ordered into three main areas: general Swinburne information; undergraduate course information; and unit of study details.

To locate a specific course, consult the main contents page or the course chart, and identify the course title and page reference you require. All the unit of study details for courses are contained in the final chapter in alphanumeric order.

Course descriptions
Courses are listed in alphabetical order under the offering faculty. Each course description outlines a course structure which includes a list of the required units of study.

Unit of Study details
All units of study may be found in the final chapter of the handbook. All units of study are allocated an alphanumeric code and are listed in this order.

Policies and procedures
The official policies, procedures and regulations relating to students is available from the university website: http://ppd.swin.edu.au

CourseFinder
Swinburne's CourseFinder is the source for this handbook's course information. The database is updated regularly throughout the year. For the most up-to-date information it can be accessed at: www.swinburne.edu.au/coursefinder

International students
Not all courses in this handbook are available to international students. Course details such as fees, available intakes, standard duration, entry requirements and campus availability may vary for international students. It should also be noted that international students are required to study full-time, and that optional Industry-Based Learning in Australia is currently not available to international students. Further course information for international students can be found at: www.international.swinburne.edu/courses
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The coat of arms, conferred on Swinburne by the College of Arms on 25 June 1969, is based on the coat of arms of the Swinburne family. At a period during the 12th-13th centuries, when the northern counties of England were ruled by the Scots, a knight of France came to the aid of Queen Margaret of Scotland. She rewarded him with a grant of land in what is now Northumberland, on the banks of the River Tyne, where he built a castle. He became known as William Swinburn(e) and soon the county reverted to the crown of England.

The Swinburne family coat of arms in medieval times was silver with three boars' heads in triangular formation. In the 17th century, during the wars between the Stuart Kings and the Parliament of England, the Swinburnes fought for the royalists. After the restoration of Charles II in 1660, the head of the family was created a baronet for his services. The crest became a baronet's coronet, with the boar's head rising from it and the coat of arms, divided horizontally red and silver, was charged three cinquefoils counter-charged.

Swinburne holds a unique place among educational institutions in Australia in the link that persists between it and the founder and his family. The conferring of a modification of the family's coat of arms preserves and strengthens that link. The arms: the basic colours of red and white, and the cinquefoils charged on the shield, commemorate the arms of the Swinburne family. The omission of the third cinquefoil which appears in the family coat and the addition of the Bordure and the Mullet (Stars) are what are known heraldically as 'differences', which may often serve to indicate an association with another amigerous body or family. The four Mulletts in Cross symbolise the Southern Cross. The crest: the demi-Boar and the cinquefoil perpetuate the Swinburne connection; the book is symbolic of learning.

The motto: the College of Arms' translation of the motto is: Achievement through learning

A Proud History

The 1992 proclamation by the Parliament of Victoria of the Swinburne University of Technology Act marked not only recognition of its distinguished history, but the beginning of a new period of growth and innovation for Swinburne. From its establishment in 1908 in Melbourne's eastern suburb of Hawthorn, Swinburne has grown from being a local provider of technical education into a multidisciplined, multicampus provider of higher education of national and international significance.

Swinburne was established as the Eastern Suburbs Technical College by George Swinburne and the first students were enrolled in 1909, when classes began in carpentry, plumbing and blacksmithing. Soon afterwards, a boys' junior technical school and the first girls' technical school in Victoria, were established.

In 1913 the institution changed its name to Swinburne Technical College, to commemorate the Honourable George Swinburne, a former Mayor of Hawthorn and a member of the Parliament of Victoria who was responsible for the initial establishment of the college.

In 1965 Swinburne affiliated with the Victoria Institute of Colleges, which was established in that year by an Act of the Parliament of Victoria, to 'foster the development and improvement of tertiary education in technical, agricultural, commercial and other fields of learning (including the liberal arts and the humanities) in institutions other than in the universities of Victoria'.

The range of courses and the various levels at which they were offered grew to such an extent that in 1980, the boys' and girls' technical schools were taken over by the Victorian Education Department while the college remained as an autonomous institution.

An extensive reorganisation of advanced education took place in Victoria in the period 1976-78 culminating in the passing of the Victorian Post-Secondary Education Act. Under the Act the Victoria Institute of Colleges was dissolved and the Victorian Post-Secondary Education Commission established. Under the new arrangements, Swinburne Council was given power to grant bachelor degrees. The first of these was awarded at a conferring ceremony held on Thursday 21 May 1981 at the Camberwell Civic Centre.

Swinburne University of Technology was proclaimed on 1 July 1992, Noted Australian businessman Mr Richard Pratt AO was installed as Swinburne's Foundation Chancellor on 15 March 1993.

Swinburne Today

Swinburne has a strong reputation in Australia and overseas as a provider of career oriented education and as a university with a commitment to research. The university maintains a strong technology base and important links with industry, complemented by a number of innovative specialist research centres which attract a great deal of international interest.

A feature of many Swinburne undergraduate courses is the applied vocational emphasis and direct industry application through Industry-Based Learning (IBL) programs. Swinburne was a pioneer of IBL, a program which places students directly in industry for vocational employment as an integral part of the course structure.

Swinburne is now one of a few Australian universities whose responsibilities span the range of programs from apprenticeships to PhDs. In keeping with this breadth of involvement, the university continues to play a leading role in creating new approaches to integration between sectors.

The creation of study pathways between sectors and courses is firmly in place at Swinburne. Current pathways involve moving either from the TAFE sector into Higher Education or from TAFE based VCE studies into full TAFE courses. A limited number of pathways are available for students to move from degree courses into TAFE studies, and this will increase in the future. This process of articulation provides students with greater flexibility to complete tertiary qualifications.

Teaching and learning enhancement is a strategic priority for the university, and Swinburne is committed to the transfer of lifelong learning skills.

Swinburne's Future

Swinburne's staff and students will be: Entrepreneurial in their work, international in their outlook and Intersectoral in their approach. Through these characteristics, Swinburne will become a university recognised as being: Flexible in Learning and Teaching, Focused in Research and Engaged with Industry and the Community. This vision will be underpinned by a commitment to a sustainable Swinburne.
Organisational Characteristics
It is the unique characteristics of our staff and students which will define the future of the university. Swinburne’s staff and students will be:

Entrepreneurial in their endeavours
An entrepreneurial university culture will encourage staff and students to generate innovative ideas and will develop an environment which is creative and dynamic. This will be achieved through the development of approaches to curricula and innovative teaching, research and administration which empowers creativity, flexibility and responsiveness. The institution will be self-reliant, leveraging these developments from a range of sources. An entrepreneurial culture recognises and supports innovation and underpins this with strong risk management and quality assurance. Entrepreneurial add value to the community and Swinburne will contribute to this through its education and research outputs and through the commercialisation of these outputs.

Our graduates will be able to meet the challenges of competitive business environments and rapidly changing communities with the flexibility and awareness to be successful in their chosen fields. Swinburne’s curriculum and learning activities will develop creativity and innovation in our graduates to allow them to contribute to community and economic wealth creation and, where appropriate, they will take with them the best ideas from Swinburne’s cutting-edge research programs.

International in their outlook
Swinburne will be an international university that recognises its international role while meeting local and regional needs. Our students will come from around the world, and our graduates will be prepared for an international workplace. Staff will be members of an international education community, and strive to build Swinburne to be a significant international university. International perspectives will enrich the delivery of learning, teaching and research at all Swinburne campuses. Swinburne will further develop an international perspective for its learning and teaching and enhance the experiences of all students; on-campus and offshore. Swinburne will benchmark itself internationally and develop its international presence based on strong partnerships

Intersectoral in their approach
Swinburne’s dual sector nature creates unique and distinctive advantages for students, staff, and industry. Students will be able to take advantage of effective pathways between TAFE and Higher Education. These pathways will add value to students in both Higher Education and TAFE.

Staff will be able to take advantage of opportunities to collaborate across sectors to develop capabilities that strengthen Swinburne’s future as a sustainable university.

Industry will be able to take advantage of solutions for its education, training and research needs that range from workplace training to PhDs, and from one-off research projects and industry training, to continuing research collaborations.

Swinburne will increasingly utilise resources from across the university to achieve its vision. The physical, human and financial resources of the university will leverage advantages from both the TAFE and Higher Education sectors and use these in the most efficient manner.

Core Outcomes
The unique organisational characteristics will result in a university recognised as:

Flexible in learning and teaching
Swinburne will be recognised for its flexible approaches to learning and teaching which will create an engaging, stimulating and modern environment in which students can learn in different ways and in different places to achieve their desired outcomes. Our approaches will be learner centred and sustained by a cooperative, stable and supportive community for students, with programs informed by scholarship and research.

Our staff will provide high quality teaching which equips students with knowledge and skills needed to work in an international workplace. Our quality assurance and improvement processes will ensure that our students are ready to meet industry and wider community expectations.

Focused in research
Swinburne’s research base will be focused and targeted to deliver impact in a selected number of areas of strength, chosen to support and address the technologies and social issues of the 21st century. We will strive to develop an international reputation for research excellence within these focused areas. Our research activities will span both basic and applied activities. Our focused research excellence will provide research opportunities for students and an environment in which the entrepreneurial spirit can flourish.

Engaged with industry and community
Staff and students will be engaged with industry and the community, building productive educational and research partnerships. Professional practice will also be encouraged as an important element of building these partnerships. Underpinning our engagement with industry and community partnerships will be key commitments to sustaining graduate employability.

Teaching Sectors
Swinburne has two teaching sectors under the control of one Council: Higher Education and Technical and Further Education (TAFE).

Higher Education
Swinburne’s Higher Education Division, based at Hawthorn, Lilydale and Prahran, offers professional qualifications ranging from bachelor degrees to graduate qualifications (certificates, diplomas and degrees of Master and PhD). The Higher Education Division consists of six faculties: Faculty of Business and Enterprise; Faculty of Design; Faculty of Engineering and Industrial Sciences; Faculty of Higher Education, Lilydale; Faculty of Information and Communication Technologies; Faculty of Life and Social Sciences. A total of 18,452 students were enrolled in Higher Education programs in 2006.

Technical and Further Education (TAFE)
Swinburne’s TAFE Division offers professional and para-professional level programs covering diploma, certificate, apprenticeship, VCE and access qualifications. A number of specialist courses are also provided for industry and the community. The TAFE Division has four schools: School of Arts, Hospitality and Sciences; School of Business; School of Engineering; School of Social Sciences. A total of 23,433 students were enrolled in TAFE courses in 2008.
Officers and Staff of the University

University Council

Chancellor
W. (Bill) Scales, AO, BEc(Mon), FIPAA

Appointed by the Governor-in-Council
K. Bowlen, BA(SIT)
D. Eynon, BEc(Mon), MA(Melb)
H. Gray, BA(Hons), LLB(Hons)(Melb)
D. Loader, BSc, Med(Syd)
K. Townsend, BA, DipEd, MEcStud(Mon), DipCompDir(UNSW)
S. van der Mye, BCom(Hons), PhD(UNSW), FA/IF, FAICD, FAIM, FASCPA, FCIS
Hor. P. Honeywood, BA(Hons)

Appointed by the Minister for Tertiary Education and Training
TBA

Appointed by the University Council
T.W. Brown, FCA, ASCPA (Deputy Chancellor)
D. Watson, DipMS(Lon), FCIS, FAICD, FAIBF
B. Hodges, DipEng(Aero)(RMIT)
B. Cohen, BComm(Hons)(UNSW)
W. Thorpe, BA, BBus(Accounting), GradDipAppFin & Investment Management
N. Weiss-Dolev, BSc(Hons), DipIT, MAICD, MCEDA

Member ex officio
Prof I. Young, BE(Hons), MEngSc, PhD(ANU), FIEAust, FTSE

Chair of the Academic Board
Prof. J. McKay

Chair of the Board of Technical Studies
I. Palmer, AssDipArts(HlthEd), DipT(Adult & Further Ed), GCertAppSci(InstrDesign)

Elected by Higher Education Academic Staff
Prof. Min Gu, BSc, MSc, PhD, FTSE, FAIP, FSPIE, FOSA

Elected by TAFE Academic Staff
G. Rossiter

Elected by General Staff
V. Ryan

Elected by Higher Education Students
V. Kasidis

Elected by TAFE Students
C. Curmin

Council Secretariat
Secretary
P. Pepparelli
Executive Assistant
L. Fernando

Chancellor
W. (Bill) Scales, AO, BEc(Mon), FIPAA

Vice-Chancellor and President
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Deputy Vice-Chancellor (TAFE)
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Pro Vice-Chancellor (Industry Engagement)
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Pro Vice-Chancellor (International and Development)
S. Connelly, BA(Hons), MA, DipEd(Mon), PostGradDipMgt(MBS)

Pro Vice-Chancellor (Research)
Prof A. Fitman, BSc(Hons), PhD, FACS, FORS, MIEE, MACM

Pro Vice-Chancellor and Chief Executive (Sarawak)
Prof H. Lueckenhausen, GradDip(RMIT), DipEd(Haw), PhD(SUT), FIA, FRSA

Vice-President (Student and Corporate Services)
S. Beall

Chief Financial Officer
B.M. Telford, BComm(Melb), MBA(Deak), CPA, ACISM

Executive Director, Chancellery
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Director, Strategic Planning and Quality
T. Aumann, BEd, MSc(Mon), PhD(ANU)

Principal Counsels
T. Rowan, BA(Melb), LLB(Hons)
S. Warnsbring, BA(Mon), LLB

University Secretary
M. Elliott, BA, MEd(Melb), PhD(Stanford)

Council Secretary
P. Pepparelli

Office of the Pro Vice-Chancellor (International and Development)

Pro Vice-Chancellor
S. Connelly, BA(Hons), MA, DipEd(Mon), PostGradDipMgt(MBS)

Executive Director
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Director, Office of Agreements and Quality
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Commercial Director
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Commercial Director (Acting)
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Director, Marketing Services
D. Albrecht, BA(UWA), MA(Int'1 Studies)(Curtin), CPM, AMI, FAIM, AMA

Director, Alumni and Development
BC. McDonald, BComm, DipEd(Melb), FCPSA
Office of the Vice-President (Student and Corporate Services)

Vice-President
S.J. Seal

Executive Director, Major Projects
G. Wickes, AssDipPA(RMIT), GradCertEntMan(SIT)

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### About Swinburne

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Research Centres

Swinburne University of Technology has thirteen designated Research Centres. The Centres facilitate the strength of research by concentrating resources (both human and instrumental) into groups of researchers in an area of research in which they collectively have a demonstrable national or international profile. Such concentrations can demonstrate a record of scholarship, publication and research funding and which provides an outstanding environment for the training of postgraduate research students.

Australian Centre for Emerging Technologies and Society (ACETS)
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Website: www.swinburne.edu.au/les/acets

The Australian Centre for Emerging Technologies and Society (ACETS) is an interdisciplinary Tier Two Research Centre, in the Faculty of Life and Social Sciences. Its purpose is to build upon the University’s mission as a University of Technology, addressing the social dimensions of emerging technologies.

ACETS operates programs in the following four areas of research:
- Social implications of biotechnology
- Public perceptions of science and technology
- Innovation and entrepreneurship
- Digital communities and communication.

Since 2003 ACETS has conducted the Swinburne National Technology and Society Monitor. The Monitor is an annual survey of public perceptions towards new technologies, in the context of rapid technological innovation, new personal choices, and new public controversies.

ACETS operates a dedicated research unit, which includes a Computer Assisted Telephone Interviewing (CATI) facility. This and produces the Swinburne National Technology and Society Monitor and other ACETS research projects, and operates as a student training facility. Its services are also available on a commercial basis, thereby supporting the research program of the Centre.

ACETS has developed The Australian Journal of Emerging Technologies and Society (AJETS), an online interdisciplinary journal that focuses on the complex relationship between science and technology and their wider socio-cultural contexts.

ACETS aims to extend its reputation as a centre for world-class interdisciplinary research in the social, political, cultural and psychological dimensions of emerging technologies.

Brain Sciences Institute (BSI)
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The scientific mission of the BSI is to understand and demonstrate the relationship between human brain function and human behaviour and cognition, in health and disease, by studying the activity of the brain and relating it to human function. Core research and postgraduate student projects cover fields such as post trauma functioning, stress resilience, memory, intelligence, drugs and driving, epilepsy, mood disorders, emotional intelligence, leadership, ageing, ADHD and dementia. The BSI has extensive collaborative links with Australian and international research organisations, and undertakes contract research in areas consistent with its primary purpose. The BSI also runs workshops to organisations and government departments.

The Centre for Neuropsychology (SCNP) and the Brain Sciences Institute (BSI) were amalgamated in 2005 to form the new Brain Sciences Institute. This was an important integration of nearly all research in cognitive neuroscience at Swinburne. This new institute is now a clearly visible research landmark in several exciting research areas.

The Business, Work and Ageing Centre for Research
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The Business, Work, and Ageing Centre for Research is a leading national and international centre of excellence concerned with the implications of population ageing for economies and workplaces. The scope of the centre’s activities is broad, considering the public policy imperatives, the response of business and the consequences for employees and job-seekers.

The centre believes that a thorough understanding of the issues is dependent on research that is close to business. Current academic industry partners include Australia Post, Laminex Industries, Qantas and RACV, and through consultancy activities, the centre works with many more. The centre also works closely with a large number of government departments at both state and federal levels, industry groups and groups working to support older people.

Another distinctive feature of the centre’s research is its international flavour, working with leading research groups in many countries such as the University of Western Ontario, University of Cambridge, Finnish Institute of Occupational Health, UNC Chapel Hill, University of Dortmund, Boston College and City University Yokohama. The centre’s research aims to put the issue of workforce ageing in context, considering the range of economic and social forces that affect individuals and organisations.

With research that extends beyond narrow disciplinary boundaries, the centre also draws upon expertise in the fields of management, applied psychology, sociology, social policy, medicine and occupational health and safety.

Centre for Advanced Internet Architectures
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Centre for Advanced Internet Architectures (CAIA) performs a mixture of experimental, applied and theoretical research work. Using ‘hands-on’ learning, leading-edge Internet equipment and technologies, the centre is broadly focused around the theme of a ‘Re-engineered Internet’. Industrially relevant and timely research is pursued in the following broad areas:
- Broadband IP access architectures
- IP network resilience and security
- IP mobility

The centre aims to be a world-class centre of applied research in IP networking architectures, providing excellence in innovative, relevant, and critical research via the education of postgraduate students, training of staff, and interaction with broad communities. By performing industrially relevant, innovative and critical research into new IP networking architectures, CAIA is expanding collaborations with leading industrial and academic research groups both in Australia and internationally.

Centre for Astrophysics and Supercomputing
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Attracting the best and brightest minds, the Centre for Astrophysics and Supercomputing (CASC) is the fastest growing astronomy research group in Australia. With a significant supercomputing facility and a virtual reality theatre, the centre utilises these unique resources along with telescopes world-wide to research a range of issues in astrophysics.

The centre employs a diverse approach to broaden its funding through a combination of commercial work, online teaching and university support. This has led to spectacular growth since the Centre’s formation in 1998, with both internally and externally funded postdoctoral positions.
Research within the Centre spans the full range of computational, observational, and instrumentation regimes, with areas of expertise including understanding the formation and evolution of galaxies and clusters of stars, the nature of dark matter in the universe, the formation of circumstellar disks and planets, the detection of remnants of massive stellar explosions, and aiding in the design and construction of the billion-dollar Square Kilometer Array.

Centre for Atom Optics and Ultrafast Spectroscopy (CAOUS)

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The Centre for Atom Optics and Ultrafast Spectroscopy, which was established in 2001, is a Swinburne Tier 1 Research Centre and hosts nodes of the Australian Research Council (ARC), Centre of Excellence for Quantum-Atom Optics (ACQAO) and the newly established ARC Centre of Excellence for Coherent X-Ray Science (CXS). CAOUS carries out fundamental and strategic research in the areas of:

- Atom Optics: Novel magnetic field microstructures are being developed as integrated optical elements, including magnetic microtraps, magnetic waveguides and magnetic lattices, on an atom chip for manipulating beams of ultracold atoms and Bose-Einstein condensates. Future goals include the development of an integrated on-chip atom interferometer for sensing gravitational and inertial fields and a sensitive high-resolution technique for probing magnetic microstructures. Another project studies light-induced atomic coherence which significantly enhances nonlinear properties and leads to ultra-slow and ultra-fast light propagation.
- Ultracold Molecules: Experiments are being carried out to produce a Bose Einstein condensate of long-lived $^\text{3}$Li molecules composed of fermionic $^\text{7}$Li atoms with magnetically tunable scattering length. The long-term goals are to study the dissociation of the $^\text{7}$Li$^\text{3}$Li BEC into correlated (or 'entangled') fermionic atom pairs and many-body quantum phenomena.
- Ultrafast Laser Spectroscopy: New multidimensional femtosecond techniques are being developed to study ultrafast molecular dynamics and charge transfer processes in complex systems, including biomolecules, photoconducting polymers, and semiconductor quantum structures such as quantum dots and quantum wells. In a new project, techniques for generating coherent soft X-rays by high-order harmonic generation of femtosecond laser pulses are being developed in order to explore coherent X-ray diffraction imaging to study the structure and dynamics of macromolecular complexes and membrane proteins, in collaboration with biochemists, chemists and biologists.
- Applied Optics: Nanoscale metal structures deposited on fibre optic tips are being developed as chemical sensors based on surface-enhanced Raman scattering (SERS). These devices are being applied as a glucose monitor for diabetics and as sensors of contaminants in water. In another project a laser-based fabrication facility is being used to write fibre Bragg gratings for application as fibre optic sensors for continuous respiration monitoring and differential pressure sensing.
- The RSS research theme aims to address the great challenge of delivering complex and large-scale software systems that are tested and reliable.
- The SOC research theme focuses on an emerging paradigm for distributed computing and e-business processing based on software services.

Centre for Micro-Photonics (CMP)

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The Centre for Micro-Photonics (CMP) was established from the Chancellery Strategic Initiatives Program at Swinburne University of Technology in 2000. In 2005, the CMP was designated as one of the Tier One Centres. The aim of the CMP is to develop innovative nanophotonic devices for all-optical information technology, to develop novel optoelectronic imaging methods for biological studies and industrial applications, and to understand mechanisms for light interaction with biological materials. The Centre has two research programs: biophotonics and nanophotonics.

Biophotonics Program

- Optics: femtosecond optics, near-field optics, nonlinear optical microscopy (superresolution), fibre optics, laser trapping.
- Optics and laser in health care: laser-tissue interactions; fibre-optical biosensors, detection and treatment of tumours; laser tweezers in biological studies; confocal microscopy in the biological studies; near-field microscopy in the biological studies; bioscips.
- Active near-field microscopy: lasing in micro-cavities; near-field Mie scattering; generation of high-order doughnut laser beam; laser trapping and tweezers.
- Computer-aided visualisation: image processing; computer-aided data acquisition; multi-dimensional image visualisation.
- Cell Biology: research in the cell biology lab involves collaborations between the Centre for Micro-Photonics and the Peter MacCallum Cancer Centre. We utilise photonics expertise to elucidate the mechanisms by which cancer and immune functions are regulated.

Nanophotonics Program

- Nanometry: imaging of quantum dots and nano-particles; single molecule dynamics.
- Nano-fabrication: submicro-resolution imaging; optical data storage with nano-particles.
- Multi-dimensional optical data storage method in low cost polymer: commercialisation of 3DCC, near field data storage.
- Photonic crystals: fabrication of new photonic crystals using photo-polymer materials; development of novel lasers and detectors using new photonic crystals.

Since the beginning of 2003, the CMP has been a node of the Australian Research Council Centre of Excellence for Ultrahigh-bandwidth Devices for Optical Systems (CUDOS) (www.cudos.org.au). CUDOS’s mission is to demonstrate all-optical processing applications and devices for ultra-high bandwidth optical communications systems. These will derive from fundamental research in the most exciting and vibrant areas of photonics science—nonlinear optical materials, photonic crystals, micro-structured optical fibres and micro-photonics. The CMP is also a research node of the Cooperative Research Centre (CRC) for Polymers (www.crp.com.au). The Cooperative Research Centre (CRC) for Polymers is part of the Australian Government’s program to promote collaborative research in high priority areas of science and engineering. It focuses on research to deliver the technically advanced polymeric materials and polymer engineering required to transform Australian industries and to establish and expand companies in emerging high-growth areas of the economy.
Centre for Molecular Simulation

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The aim of the Centre for Molecular Simulation (CMS) is to develop and use molecular simulation techniques to contribute to new knowledge of molecular processes and to transfer this knowledge beyond the boundaries of the university through publication in top disciplinary based international journals, the education of postgraduate students and the training of staff.

CMS has experienced considerable growth in both staff numbers and funding since its establishment attracting some of the best scholars in the Asia-Pacific region and elsewhere. The interdisciplinary nature of the research has attracted researchers with backgrounds in physics, chemistry, chemical engineering and computer science. Examples of the fundamental research currently undertaken by CMS staff and postgraduate students include the investigation of:

- Molecular motors.
- Transport properties of fluids.
- Many-body intermolecular interactions on the properties of fluids.
- Phase transitions at high temperatures and pressures.
- Molecular thermodynamics and computational nanofluidics.
- Thermodynamics and statistical mechanics.
- Computational quantum chemistry.
- Computational biomolecular modelling.

Centre for Sustainable Infrastructure (CSI)

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The Swinburne Centre for Sustainable Infrastructure (CSI) was established to partner industry and government to provide research solutions focused on the improvement of urban infrastructure. Infrastructure is critical to the economic wellbeing of Australia with some $30 billion invested annually. The challenges facing the community and the engineering profession include ageing infrastructure, environmentally sustainable development and the impact of extreme events, both natural and manmade, on urban infrastructure and a projected skill shortage of engineers.

CSI provides a focus for multi-disciplinary research in the field of sustainable urban infrastructure and aims to expand existing research relationships and create new research links through collaboration both nationally and internationally. CSI facilitates outreach activities through, education, professional development and specialist consulting. The funding for CSI comes from a variety of sources including government sponsored research, contract research, specialist consulting and continuing education. The three major research programs of CSI are:

- Infrastructure performance and renewal
- Sustainable materials and emerging technologies
- Water resources modelling

CSI offers research scholarships to graduates with exceptional academic results to pursue PhD and MEng (by research) programs.

Environment and Biotechnology Centre

Formerly the Centre for Applied Colloid and BioColloid Science.

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The Environment and Biotechnology Centre is one of Swinburne University of Technology’s principal research centres. It promotes the development of applied and industrial research in both environmental science and biotechnology. The Centre currently has 14 academic staff and over 30 research students, possessing expertise in fields as diverse as bioactive compound production and extraction, bioremediation, surface and colloid science, molecular biology, catalysis, public and environmental health, biosensors, enzyme technology, heavy metal removal, tissue engineering, nanotechnology and pulp and paper bioprocessing. The Centre resides in the School of Engineering and Science at Swinburne’s Hawthorn campus.

The Centre’s predecessor, the Centre for Applied Colloid Science was established in the Department of Applied Chemistry at Swinburne in 1980, at which time its research activities were principally focused on studying the physical chemistry of colloidal systems. The research activities of this centre were expanded in 1996 to include research into biological systems, and hence the centre was renamed the Centre for Applied Colloid and BioColloid Science. In 2002, the centre expanded, and was renamed the Environment and Biotechnology Centre to more accurately reflect the range of research activities undertaken.

Today, with strong links to industry, the Centre is strongly focused on industrial biotechnology and environmental research. Operating as a contact point for visiting members of staff from both local and overseas academic institutions, companies and government authorities, the Centre has become a strong focal point of postgraduate research for many industries.

Industrial Research Institute Swinburne (IRIS)

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The Industrial Research Institute Swinburne (IRIS) was established in 1985. Our vision is to be Australia’s leading institute for applied research and postgraduate education to enhance the international competitiveness of Australia’s manufacturing industry.

We will achieve our vision by maintaining our core capabilities in:

- The provision of innovative industry-based postgraduate research training;
- Industrial laser technologies for conventional scale and micro scale manufacturing;
- Intelligent manufacturing technologies;
- The use of microwave technologies in manufacturing processes; and
- By building on our emerging core capability in biotechnology.

Approximately eighty per cent of IRIS research work is applied and industry-oriented or industry-based. The remainder of the research effort is basic research into core technology areas. IRIS works with three cooperative research centres (CRCs), which combine a number of industry and university partners. These centres are:

- The CRC for Cast Metals Manufacture (Castmm)
- The CRC for Wood Innovations
- The CRC for Advanced Automotive Technology (AutoCRC)

IRIS postgraduate education programs are provided, from Graduate Certificate through to Graduate Diploma and Master of Engineering levels currently in Advanced Manufacturing Technology. IRIS has also developed and implemented a system of career oriented learning (COL), in which postgraduate education programs are tailored to enhance depth of knowledge in areas related to career shift or career advancement. IRIS offers research scholarships to graduates with exceptional academic results to pursue PhD and MEng (by research) programs.
Institute for Social Research (ISR)

Director: Prof Julian Thomas
Telephone: +61 3 9214 5466/8225
Fax: +61 3 9819 5349
Email: jthomas@swin.edu.au
Website: www.sisr.net

The Institute for Social Research is an exciting group of researchers within the Faculty of Life and Social Sciences. It specialises in three areas:

- Media and communications (media and communications policy, media history, digital divide, wired communities, mobile communications, broadcasting, publishing)
- Citizenship and government (politics, immigration, civic infrastructure, privatisation, consumer credit, youth policy)
- Cities and housing (social housing, urban studies, social planning, environment, family policy and welfare)

The Institute employs around 24 researchers with a range of government, community, commercial and international experience. Institute researchers include economists, sociologists, media and communication studies experts, historians, and political scientists. ISR staff contribute to leading scholarly journals, enjoy a strong profile in print and electronic media, and sit on the boards of journals, community organisations and government committees. They have links with researchers and policy-makers in North America, Europe and East Asia and close professional ties with Commonwealth, state and local government agencies, with the community sector and with industry.

The Institute is a node of the Australian Research Council (ARC) Centre of Excellence in Creative Industries and Innovation and a member of the Australian Housing and Urban Research Institute. The ISR hosts the first Chair of Victorian State Parliamentary Democracy, in partnership with the Victorian government. The ISR has an excellent record of attracting ARC and AHURI research grants.

The Institute offers Masters and PhDs by research. It also offers specialist postgraduate coursework, including Australia’s only national program for housing practitioners, now extended to include New Zealand. This is a suite of courses delivered within a distance education framework, with key courses accredited by the Chartered Institute of Housing (UK). Cities and Housing staff also prepare and deliver short courses for professional development.

With a lively cohort of PhD and Masters research students, the Institute also welcomes honours students. Many honours and postgraduate students welcome the chance to build on their professional experience in the public, community and commercial sectors. The ISR also offers a chance to move beyond disciplinary boundaries between sociology, economics, political science, philosophy or media studies. Students have the opportunity to work on real public policy problems while using advanced social science and humanities approaches.

In 2008, ISR staff will be working on a number of funded projects and prospective postgraduate and honours students are welcome to join them in working on these.

- Dr Kathy Arthuro (urban sociology, housing, social policy)
- Prof Terry Burke (urban sociology, housing issues and policy, urban planning)
- Prof Brian Costar (political science, parliamentary democracy, parties and elections, Victorian State politics)
- Prof Jock Given (broadcasting policy, digital television, history of media and telecommunications)
- Assoc Prof Kathleen Hulse (comparative social policy, housing, urban sociology)
- Prof Denise Meredyth (cultural sociology, citizenship studies, sociology of education, sociology of the Internet)
- Prof Klaus Neumann (cultural history, cultural studies, immigration and refugee policy, social memory and commemoration)
- Dr Ellie Rennie (prosustainability of cities; resource consumption urban planning)
- Prof Julian Thomas (media and communications policy, information policy, cultural dynamics of the Internet, history of communications technologies)

Contact Denise Meredyth (dmeredyth@swin.edu.au) for further details about working in the ISR. All the ISR staff will be happy to discuss possible thesis topics with you, not only in Politics, but also in Cultural Studies, Media Studies and Sociology.
## Undergraduate Courses Chart

### Faculty of Business and Enterprise

<table>
<thead>
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<th>Course Code</th>
<th>Course Title</th>
<th>Campus</th>
<th>Duration</th>
<th>VTAC Code (CSP)</th>
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**National Institute of Circus Arts (NICA)**

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<th>Course Code</th>
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<th>Duration</th>
<th>VTAC Code (CSP)</th>
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Higher Education Division

Faculty of Business and Enterprise

The Faculty of Business and Enterprise prides itself on offering students, from a variety of backgrounds and entry points, a ladder to employment success in a professional career. Since the early 1960s focus has been on producing graduates who are work ready, and today's senior management ranks are littered with some of the faculty's best alumni. People such as Mark Korda, founding partner of Australia's top litigation specialists, Korda Mentha, and Michael Langhammer, partner at Pitcher Partners are excellent examples of the way our graduates have made a difference.

The success can be attributed to the quality of the teaching. Each year, Australian university's teaching performance is assessed nationally, and each year courses within the faculty rank consistently well above the national average on all key teaching criteria. Staff are highly committed and students enjoy an intimate setting, thanks to Swinburne's small campus environment.

Another core achievement is the demonstrated commitment to entrepreneurship as a management discipline. From the world class Australian Graduate School of Entrepreneurship to undergraduate business courses, students are encouraged to embrace the values of innovation and commercialisation, while meeting the needs of the core business professions. We are deeply embedded in international entrepreneurship education and research networks, and our professors includes people who are successful entrepreneurs in their own right.

In recent years our attention has shifted to a broader horizon. We celebrate the increasingly international nature of our education and training, and the multicultural and multi ethnic nature of our student body. Our specialist language majors in Italian and Japanese offer students the chance to study international business, while simultaneously learning about cultures at the heart of the two great trading regions of Asia and Europe and to do so while studying abroad.

The Faculty of Business and Enterprise is focused on what matters most: a successful career in an increasingly globalised world.

Further Information
Telephone: +61 3 9214 5046
Fax: +61 3 9819 2117
Email: bushe@swin.edu.au
Website: www.swinburne.edu.au/fbe

Bachelor of Business [A055]

The Bachelor of Business equips students with a diverse range of theoretical knowledge and practical skills to prepare them for the demands of tomorrow's business world. Key features of this degree are the ability to integrate a wide range of business, information technology, arts and social science units of study, the opportunity to undertake the Industry-Based Learning (or work experience) program and/or travel overseas on international student exchanges or overseas study tours. Note: Industry-Based Learning is not available to international students.

The Bachelor of Business at Swinburne's Hawthorn campus is a vocationally oriented course designed to assist in the intellectual, social and personal development of the student as preparation for entry to a range of specialist and generalist business professions. The program prepares students for a career in business, whether domestic or international, recognising that business in the 21st Century is global. It also produces educationally rounded people, capable of taking their place in their chosen professions and their community.

Swinburne takes particular pride in producing business graduates who are employment-ready, of immediate practical relevance to their employers and capable of excellent career development from a strong commencing base. Along with this knowledge and skills development, the program deliberately takes on an entrepreneurial 'flavour' throughout its entirety. Graduates will have the basic capacity, attributes and 'mindset' to consider creating their own enterprises from the time of graduation, or at some future point in their career. They will therefore be well prepared to either seek professional entry as an employee in their chosen field of specialisation or to grasp innovative business opportunities to employ themselves and others.

Aims & Objectives

This course will expose students to curriculum with a strong entrepreneurial theme. Entrepreneurial skills, approaches, thinking styles and examples are woven into many units of study within the degree suite, and many assessment tasks intentionally involve active practical 'start up' business activities and simulations.

The course also provides environmental awareness by exposing students to a significant amount of international curriculum. Students will be encouraged to interact with diverse nationalities through the student body and international study and travel opportunities.

Ethical business practices, which lead to sustainable businesses, are also addressed thematically throughout the course content.

In addition the course aims to:

- Ensure that the body of knowledge and technology imparted in the course will be relevant to immediate and potential employment opportunities.
- Develop self confidence through a learning experience aimed at an understanding of the subject areas and including the development of life-long learning skills.
- Offer Industry-Based Learning (IBL) opportunities that rapidly link theoretical learning with applied practical work experience. Note: IBL not available to international students.
- Develop creativity and analytical skills.
- Provide an understanding of the conventional ways of seeking answers to particular problems, including use of library and other reference sources such as modern internet and electronic information sources.
- Develop multidisciplinary applied research skills through the honours year option.
- Develop both written and oral communication skills, and team work capacities.
- Develop perspective and general knowledge by a study of a variety of disciplines and of their relationship to one another, forming an integrated, holistic business understanding.
- Develop an ability and willingness to adapt to change, given the turbulent, competitive and volatile nature of many businesses.
- Develop a broad understanding of the business and social environment, especially its global and complex nature.
- Develop skills and attitudes conducive to lifelong learning.

Campus

Hawthorn, Sarawak

Career Opportunities

Accountancy, business management, computer programming, financial management, human resources, marketing and sales management, systems analysis, international trade, manufacturing management. For specific career opportunities, refer to the individual Business Specialisation entries.

Professional Recognition

The following professional recognition applies to studies in the Bachelor of Business. To be eligible for recognition at Professional Level by the various professional associations, students must complete the following requirements:

Australian Computer Society (ACS)

Students intending to apply for membership of the Australian Computer Society (ACS) should complete these units of study. Please note that membership to the ACS is not automatic and that each application will be considered on its merit.

HIT1401 Introduction to Business Information Systems (core)
HIT1403 ICT Environment
HIT1404 Introduction to Programming in .NET
HIT1402 Database Analysis and Design
HIT2427 Object-Oriented Programming in .NET
HIT2420 Database Management Systems
HIT3416 Industry Project (Analytical) OR HIT3417 Industry Project (Technical)
HIT3044 Professional Issues in Information Technology
HIT2405 Requirements Analysis and Modelling
HIT2411 Business Data Communications and Networks

Students should contact the ACS directly regarding current membership requirements and recognition of exemptions based on studies undertaken outside Australia.
Australian Human Resources Institute (AHRi)

To be eligible for associate membership of AHRi graduates must have completed the following eight post-core units of study:

- HBB220 Human Resource Management in Contemporary Organisations
- HBB225 Human Resource Management
- HBB226 Strategic Human Resource Management
- HBB322 International Human Resource Management
- HBB324 Managing Workplace Relations
- HBB325 Human Resource Management and Entrepreneurship
- HBB330 Leadership and Organisational Dynamics

CPA Australia (CPA) and the Institute of Chartered Accountants in Australia (ICAA)

To be eligible for associate membership of the CPA or entry to the CA Program of the ICAA, graduates must have completed the following core business and post-core units of study:

- HBC110 Accounting for Success
- HBL111 Law in Global Business
- HMB11G/111 Quantitative Analysis A/B
- HBE110 Microeconomics
- HBB110 Organisation & Management
- HIT1401 Introduction to Business Information Systems
- HBC220 Financial Information Systems
- HBC221 Corporate Accounting
- HBC222 Management Decision Making
- HBC223 Analysis for Competitive Advantage
- HBC224 Financial Management
- HBC225 Auditing and Assurance
- HBC330 Current Issues in Accounting
- HBC331 Taxation Issues and Planning
- HBE220 Macroeconomics
- HBL220 Contract Law
- HBL221 Company Law

Students seeking advanced standing for studies undertaken outside Australia are advised that credit granted by the university may not, in all cases, be recognised by the CPA. The CPA does provide guidelines and individual advice regarding recognition of advanced standing. Students should contact the CPA directly regarding recognition of exemptions based on studies undertaken outside Australia.

Australian Institute of Banking and Finance

The Australian Institute of Banking and Finance accepts the Bachelor of Business degree as an approved degree for the purpose of Affiliate membership of the Institute. Affiliate membership is a transitional level leading to Senior Affiliate status. An Affiliate member is required to undertake specialist banking units of study to complete the educational requirements for Senior Affiliate status. Student membership of the Australian Institute of Banking and Finance is open to all full-time students undertaking the Bachelor of Business degree.

Australian Institute of Management

Graduates of this course fulfil initial membership requirements and entrance requirements of the Australian Institute of Management Graduate Certificate courses.

Australian Marketing Institute (AMI)

Graduates of this course who have completed a Marketing major are eligible to become Associates of AMI. This course also fulfils the educational requirements for recognition as a Certified Practising Marketer.

Institute of Corporate Managers, Secretaries and Administrators

Completion of the Bachelor of Business fulfils the educational requirements for associate membership of the Institute of Corporate Managers, Secretaries and Administrators.

Course Duration

Three years full-time or six years part-time. An optional and additional year of Industry-Based Learning (IBL) is also available.

Students holding an international student visa are required to study full-time. The optional year of Industry-Based Learning (IBL) is not available to international students.

Course Structure

Students undertake a total of twenty-four units of study, consisting of the business core of seven units of study, and a combination of majors, minors and electives. A mandatory unit HBS3004 Careers in the Curriculum (zero credit points) must also be completed.

A major consists of six post-core units of study (at least two at Stage 3) from one specialisation. A minor consists of four post-core units of study (at least one at Stage 3) from one specialisation. An elective is a unit of study that is not part of the core, a major or minor.

The above formula for majors and minors in the Bachelor of Business applies to all business specific streams except where specific requirements are specified under individual majors. See the Business Specialisation section below.

Students may complete a combination of majors, minors and electives to fulfil the degree requirements however; at least one major from the business specific majors listed below must be completed.

The combinations of majors and minors possible are:

Option 1 - Two majors, one minor, one elective
Option 2 - Two majors, five electives
Option 3 - One major, two minors, three electives
Option 4 - One major, one minor, seven electives

Majors in the following Arts disciplines consist of seven units of study with three at Stage 3: Australian Studies, Cultural Studies, Electronic Society, Literature, Media Studies, Philosophy & Cultural Inquiry, Politics and Sociology. Minors in these disciplines is the same as for business disciplines. The requirements for Italian, Japanese and Psychology are as follows:

Italian - Language major

Beginners Stream consists of the following seven units of study: HAJ181, HAJ182, HAJ119, HAJ281, plus one of HAJ282 or HAJ283, HAJ343 plus one of HAA387 or HAA388.

Advanced Stream consists of the following seven units of study: HAJ184, HAJ185, HAJ119, HAJ284, plus one of HAJ285 or HAJ286, HAJ343 plus one of HAA387 or HAA388.

Italian - minor

Beginners Stream Italian consists of the following five units of study: HAJ181, HAJ182, HAJ281, HAJ283 and HAJ381.

Advanced Stream Italian consists of the following five units of study: HAJ184, HAJ185, HAJ284, HAJ285 and HAJ286.

Japanese - Language major

Beginners Stream consists of the following eight units of study: HAJ107, HAJ108, HAJ109, HAJ215, HAJ217, HAJ218, HAJ218 & HAJ219 of HBJ341. Advanced Stream consists of the following eight units of study: HAJ131, HAJ132, HAJ133, HAJ231, HAJ232, HAJ233, HAJ234 & HAJ331.

Japanese - minor

Beginners Stream consists of the following six units of study: HAJ107, HAJ108, HAJ109, HAJ215, HAJ217, plus HAJ218 or HAJ202.

Advanced Stream consists of the following six units of study: HAJ131, HAJ132, HAJ133, HAJ231, HAJ232, plus HAJ233 or HAJ202.

Psychology

A minor in Psychology consists of HAV100, HAV191, HAV206, HMA278, HMA279 and HAV307 or HAV321. The major in Psychology consists of seven Psychology units of study with at least two at Stage 3.

Note: This major does not fulfil Australian Psychological Society (APS) requirements. The approved APS three year program requires completion of the ten Psychology units of study offered as part of the Bachelor of Arts. Bachelor of Business students are permitted to study this sequence but it would be preferable for the ten unit sequence to be completed as part of a Bachelor of Arts or similarly accredited program.

Majors/minors from other faculties or from other universities may be taken subject to approval by the Faculty of Business and Enterprise Academic Committee.
Course restrictions
Students should note the following restrictions:

- A minimum of eight units of study must be completed at Swinburne University. This must include completion of half the units of study for all majors and minors. At least one Stage 3 unit of study for any major or minor must also be completed at Swinburne University with the exception of Italian and Japanese language majors or minors. This regulation must be observed in course plans that include units of study exemptions, studies completed through international exchange, cross-institutional study or study abroad.
- A maximum of twelve units of study from any discipline (e.g. Marketing - "HBM" unit of study code prefix).
- A maximum of ten Stage 1 units of study (e.g. HBM110 - Stage 1 units of study have a '1' immediately following the three-letter code).
- A minimum of four Stage 3 units of study (e.g. HBC330 - Stage 3 units of study have a '3' immediately following the three-letter code).
- Unmatched exemptions can only be used as electives and do not fulfil Stage 3 units of study course requirements.
- The unit of study HAT119 Academic Communication Skills cannot be used for credit towards the Bachelor of Business.
- A unit of study can only be counted once as part of a major or minor or as an elective - one unit of study cannot be counted twice (e.g. the unit of study HBM222 may be counted towards either a Management or Marketing major, but not both).
- Students are not permitted to enrol in units of study where they have completed another unit of study that is deemed to be equivalent. Equivalent units of study cannot both be used for credit.
- The unit of study HBI300 Industry Placement cannot be used for credit towards the Bachelor of Business.
- Students will be allowed to study a maximum of twenty-six units of study as part of the Bachelor of Business.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HBS6004 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Stage 3 Units of Study - Honours Stream Option
Each semester a limited number of Stage 3 units of study are offered by the Faculty of Business and Enterprise to students as an Honours stream option. These units of study provide students with the challenge and an opportunity to develop a deeper understanding of the subject matter, and to develop research skills by completing research based assessment tasks. Students are required to have an overall credit average, and the unit of study must normally be part of a major they are completing and they have achieved a credit average in the major. Students enrolled in Honours stream units of study will have codes appended with an H and the words (Honours stream) to reflect the higher academic content and requirements. The Honours Stream option is highly recommended for students considering enrolment in the Bachelor of Business (Honours) course upon completion of the degree.

Special course of study for students who have completed an Advanced Diploma in Business
Students enrolled in the Bachelor of Business who have completed an approved Advanced Diploma or Diploma in Business or equivalent must complete all the normal requirements for the course except they are only required to complete four of the seven business core units of study (which may include matched unit of study credits). However, all business core units of study required as prerequisite for later stage units selected for study must be completed.

The seven business core units of study are:

- HBC110 Accounting for Success (A)
- HBE110 Microeconomics (A)
- HBH110 Organisation and Management (A)
- HBL111 Law in Global Business (A)
- HBM110 The Marketing Concept
- HBT401 Introduction to Business Information Systems (A)
- HMB110 Quantitative Analysis A (A), Or HMB111 Quantitative Analysis B(A)

(A) Mandatory units for professional recognition by CPA Australia or ICAA

Prerequisites/Corequisites
Students must have passed prerequisites/corequisites listed for each unit of study and must check that they have fulfilled these requirements before enrolling. Unit of study convenors must be consulted if students wish to enrol in a unit of study for which they do not have the stated requisite.

Industry-Based Learning (IBL)
The Bachelor of Business includes an optional Industry-Based Learning segment, in which students are placed in paid, supervised employment as part of their degree course. Students require a credit grade average for acceptance into the IBL program. Whilst enrolment in the Industrial Project completed as part of Industry-Based Learning is not for credit, it gives eligible students invaluable practical experience to add to their academic studies, and is a proven advantage in the graduate job market. All Industry-Based Learning placements are subject to the availability of places and require suitable English language skills.

The optional year of Industry-Based Learning in Australia is currently not available to international students. However international students may be able to participate in IBL in another country, subject to the approval of the relevant Swinburne IBL Manager and appropriate immigration approval. In addition, international students are able to gain industry experience through the Business Link program offered at Swinburne. Further information on Business Link is available at www.swin.edu.au/corporate/ibusinesslink/students/information.htm

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused major projects within their final year of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Majors/Minors & Specialisations
The course leading to the award of Bachelor of Business offers major, minor and elective studies. The following Business specific majors/minors are available:

- Accounting
- Asian Business
- Business Law
- Economics
- eBusiness
- European Business
- Finance
- Human Resource Management / Organisation Behaviour
- Information Systems
- International Business
- Management
- Manufacturing Management
- Marketing

# Available as minor only
See page 32 for Business major/minor details.

The following Social Science specific majors/minors are available from Arts:

- Australian Studies
- Cultural Studies
- Electronic Society
- Italian Studies
- Japanese
- Literature
- Media Studies
- Philosophy and Cultural Inquiry

See page 147 for Arts major/minor details.

The following Social Science specific majors/minors are available:

- Politics
- Psychology
- Sociology

See page 178 for Social Science major/minor details.
Electives Plus Sequences

Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
- Design: Process and Strategy
- Effective Communication
- Entrepreneurship
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus details.

Entry Requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2006 VCE prerequisites: Units 3 and 4 - a study score of at least 20 in English (any), Advanced Diploma holders: a minimum requirement of Credit Grade average 65% with no fails in the final year. In the first instance preference will be given to Advanced Diploma holders who have a Distinction Grade average (at least 75% or above) with no fail grades in the final year. Followed by Advanced Diploma holders who have a Grade average midway between Credit and Distinction (at least 70% or above) with no fail grades in the final year. Followed by applicants who have completed the equivalent of at least three full-time semesters towards the Advanced Diploma who have a Distinction Grade average (at least 75% or above) with no fail grades in the final year. Followed by Advanced Diploma holders who have a Credit Grade average (at least 65% or above) with no fail grades in the final year. Diploma holders will only be considered for selection if a minimum of 50% of grades achieved are Distinctions (75% or above), with no fails, and places are available.

Certificate IV (post Year 12 qualifications) will only be considered for selection if a minimum of 75 percent of grades achieved are Distinctions (75% or above), with no fails, and places are available.

Note: Associate Diploma holders should refer to the above requirements for Advanced Diploma holders.

Applicants with partially completed tertiary qualifications (at least one year of equivalent full-time study): minimum requirement - Credit Grade average, 65% or above with no fails.

Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and who have not satisfied minimum tertiary entrance requirements, providing they have not been in full-time secondary school for at least two years, or applicants who have a non-competitive entry requirement that has been completed a minimum of 18 months prior to time of application for the course, must apply through VTAC (both full and part-time) and register with VTAC to sit the Special Tertiary Admissions Test (STAT - Multiple Choice). A STAT registration fee is payable to VTAC.

Not all eligible applicants can be offered a place, as quotas apply.

2007 Round 1 Clearly-In ENTER: 76.85 (CSP), 72.50 (Fee)

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 34411(CSP), 34412(Fee), 34413 (Int, Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Business Specialisations

Accounting - Major/Minor

Accounting is the basic language of business. The accounting units of study offered by the Faculty of Business and Enterprise cover many different aspects of contemporary business activities. The overall emphasis is on providing information and analytical tools which improve the decision making process throughout the organisation.

Stage 1 accounting gives students an overview of accounting from a user’s perspective: how to read and analyse accounting reports. Accounting information is an important basis on which many decisions in all areas of business are made.

Stage 2 units introduce both the process of creating accounting reports and developing other accounting information for decision making. Students learn to use a variety of analytical tools and recording processes. Units of study include a range of knowledge areas, from accounting as a business information system, to developing information to assist the marketing, purchasing, production and administrative functions, through to financial management of the firm.

In Stage 3 units may be taken which provide students with additional analytical tools, used in decision making in a wide variety of business problems. In addition, further specialist units in tax, financial reporting and personal investment may be studied.

Some accounting units of study may be counted towards an accounting major or minor, or towards a finance major or minor (but not included in both). Some students will undertake accounting studies as an essential adjunct to a career in business. An accounting background is of great benefit to those seeking careers in general management. Other students may wish to pursue a career in accounting; choosing the appropriate combination of units will allow them to become members of professional accounting bodies, CPA Australia and the Institute of Chartered Accountants of Australia. Swinburne accounting qualifications are recognised both in Australia and overseas.

Students with accounting majors or minors find rewarding work in industry, commerce, the public sector, the financial industry or business consulting. Students who undertake a course leading to professional accounting qualifications may work in any of these areas and in addition may work in public accounting.

An Accounting major consists of six post-core units of study, at least two of which must be at Stage 3. A minor in Accounting consists of four post-core units of study, at least one of which must be at Stage 3.

Stage 1 (core unit)

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Stage 2

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Stage 3

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<td>HBC331</td>
<td>Taxation Issues and Planning (A)</td>
</tr>
<tr>
<td>HBC339</td>
<td>Financial Risk Management (A)</td>
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Note: Mandatory accounting units for professional recognition by CPA Australia or ICAA. The following units of study are also required for professional recognition by CPA Australia or ICAA: HBE110 Microeconomics, HEN110 Organisation and Management, HBL111 Law in Global Business, HIT1401, HMB110 Quantitative Analysis A or HMB111 Quantitative Analysis B, HBE220 Macroeconomics, HBL220 Contract Law, HBL221 Company Law.

Asian Business - Minor

The minor in Asian Business focuses on one of the vital regions of the world. It will give students an understanding of the Asian economic miracle, the Asian financial crisis and the restructuring of Asian economics. It will equip students with a variety of skills useful for doing business in Asia, including insights regarding marketing law, business practices, culture and language.
The Asian Business minor is designed to complement other majors, including International Business, Accounting, Finance, Marketing, Human Resource Management, Information Technology and Japanese.

Asian Business is available as a minor only. Students wishing to complete a minor in Asian Business will need to complete HBI341 Asia-Business Context and three post-core units of study from the units listed below.

Stage 1 (core unit of study)
The following business core unit of study is a pre-requisite to the mandatory unit of study.

HBE110 Microeconomics

Mandatory unit of study
HBI341 Asia - Business Context

And three from the following:

HAJ102 Introduction to Japan: A Cultural Overview
HAJ107 Introductory Japanese 1A (or other Asian language unit)
HAJ202 Communication in Japanese
HBI344 Work Experience in Japan
HBI342 International Investment and Taxation
HBI391 Pacific Rim Business Study Tour
HBM339 Transnational Business Practices

Business Law - Major/Minor
The Business Law major/minor will provide students with the knowledge necessary to appreciate the impact law has on the business environment. With the increasing legal regulation of society it is essential that students are aware of the factors which either encourage or inhibit business activities. The core unit of study ‘Law in Global Business’, introduces students to basic legal concepts and important areas of business law. The unit concentrates on the interrelationship of law, business and society. Other units deal with various aspects of business law, including contract, company, marketing, international investment, international trade and finance.

Law units of study emphasise skills such as the ability to understand arguments, to manipulate abstract concepts and to communicate verbally and in writing. These skills highlight the vocational value of law units of study to students.

While not leading to a legal qualification, a Business Law major/minor can lead to a range of careers and positions in insurance, banking, finance and the public sector. Legal knowledge would be valuable to a property officer, accountant, trust officer/administrator, company legal officer, company secretary or local government administrator.

A major in Business Law consists of 6 post-core units of study from the list below, with at least 2 units of study must be at Stage 3.

A minor in Business Law consists of 4 post-core units of study from the list below, with at least 1 unit of study must be at Stage 3.

Stage 1 (core unit)
HBL111 Law in Global Business (A)

Stage 2
HBL220 Contract Law (A)
HBL221 Company Law (A)
HBL222 Marketing Law

Stage 3
HBC331 Taxation Issues and Planning (A)
HBI342 International Investment and Taxation
HBL331 International Business Law
HBL333 Finance Law
HBL334 Managing Workplace Relations

Note:
(A) Mandatory units of study for professional recognition by CPA Australia or ICAA.
Recommended Business Law units of study which complement other majors/minors:
Accounting/Finance: HBL220, HBL221, HBL333
Marketing: HBL222, HBL331
Information Systems: HBL220, HBL222

Manufacturing Management: HBL220, HBL222

eBusiness - Minor
The Internet is revolutionising business conduct: the study and practice of marketing is changing rapidly, due to the commercialisation of the World Wide Web. Issues addressed in e-commerce units of study include the way end-to-end enterprise-wide technologies are changing the way business is conducted, the development of sophisticated methods of customer data management, with corresponding improvements in business efficiency and potential customer satisfaction. The opportunities now available to small-and-medium sized enterprises (SMEs), retailers, international marketers, product developers and researchers, which take on an entirely new perspective when viewed from ‘cyberspace’, are also covered. The fundamental drivers of cybercommerce are investigated, and the implications of this understanding will be used to develop strategies for managing the business of the future in a profitable, ethical and effective way.

It is clearly important that future business owners and employees understand the Internet and its profound impact on commerce. Existing businesses are moving on-line to protect existing markets and expand into new ones, and new Internet businesses are being born daily. There are great opportunities for employment or entrepreneurial activity in this exciting new business field, and managers of non-Internet businesses of the future will also benefit from a thorough understanding of electronic marketing.

eBusiness is available as a minor only. Students are required to complete the four post-core units of study listed.

Stage 1 (core units of study)
The following business core units of study are pre-requisites to the Stage 2 eBusiness units of study
HBM110 The Marketing Concept
HIT1401 Introduction to Business Information Systems

Stage 2
HBI370 eBusiness
HBM271 eCustomer Relationship Management
HBM272 eMarketing

Stage 3
HBM370 eCommerce Strategy: A Management Perspective

Economics - Minor
Understanding economics is a fundamental requirement for a career in business.

An economic approach to important social and business problems forms the focus of the economics minor.

Stage 1 provides an introduction to the way in which economists approach their field of study. It covers a broad range of topics, the operation of markets, the behaviour of business firms under different competitive circumstances and the impact of taxes on goods and services.

Stage 2 allows students to focus on macroeconomic issues such as understanding and interpreting key indicators, the determinants of economic activity, business cycles and financial markets.

Stage 3 provides insight into a number of specific areas in economics, such as international trade, international business, international finance and financial institutions and monetary policy.

Students completing an economics minor find employment in a wide range of challenging fields. These include administration in both public and private sectors, management consulting, banking, economic policy evaluation and financial analysis.

Economics is available as a minor only. A minor sequence consists of HBE220 Macroeconomics and three post-core units of study, at least one of which is at Stage 3.

Stage 1 (core unit)
HBE110 Macroeconomics (A)

Mandatory unit:
HBE220 Macroeconomics (A)

And three from the following:
HBE228 Banking and Financial Markets
HBI331 Foundations of International Business

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European Business - Minor

The European Business minor is unique in Australia. It outlines the historical, political and legal background of the European Union and develops in students an understanding of the main features of the regulatory and marketing environment which is shaping Europe today.

The highlight of the European Business minor is that it offers two units of study which are taken in Europe. The first of these, a Study Tour to Europe, involves a three to four week tour of several European countries and includes briefing sessions with major European companies, visits to European institutions such as the European Parliament, the European Court of Justice and meetings with organisations involved in Australia-Europe trade and investment. The second unit of study, Work Experience in Europe, involves three months’ work experience in a European country of choice. Particular emphasis in the minor is placed on Italy, the sixth economic power in the world.

The aim of this minor is to develop in students an appreciation of the events which are shaping Europe and European business today. It allows students to explore contemporary European business issues by offering a combination of units chosen from culture, politics, history, business and language. Students undertaking the minor in European Business will be better equipped to understand the economies, politics, societies and business cultures of Europe.

The Single European Market, the European Single Currency (Euro) and Pan-European operational strategies increasingly being adopted by EU companies make it more important for today’s graduates to be familiar with the EU, its operations, its regulatory environment and the impact of EU policy on Australian trade.

The European Union’s swelling population of close to 380 million and its future enlargement make Europe a huge market, giving a growing number of Australian firms the opportunity to open up new outlets for their production and services. It is thus becoming more important for graduates with an interest in working in international business, particularly in Europe, to be familiar with the European Union and its business environment.

European Business is available as a minor only. A minor sequence consists of HBI392 European Union - Business Context and three post-core units from the units of study listed.

Mandatory unit:
HBI392 European Union - Business Context

And three from the following:
HAA119 Post-War Italy
HAA181 Italy and Its Language 1 (or other European language unit)
HAA489 Comparative European Politics
HBI288 European Union
HBI289 European Union: Central and Eastern Transition Countries
HBI342 International Investment and Taxation
HBI343 International Business in the Italian Context
HBI389 Work Experience in Europe
HBI390 European Union Study Tour

Finance - Major/Minor

Finance is a field of study which is concerned with financial and capital markets, government influences on those markets and the role of the organisation within this framework. Finance theory is a relatively recent development, and draws on the disciplines of both economics and accounting. The finance major will equip graduates with a knowledge of financial instruments, investment options available for both personal and enterprise investment; how different forms of financial markets function, the relationship between risk and reward; and the relationship between the business enterprise and financial markets, both domestic and international. It will lead to knowledge which assists in making financial decisions for an organisation.

Finance is one of the fastest growing employment areas. Graduates may find employment as an investment advisor, in corporate treasury, money dealing, sharebroking, or portfolio management.

A Finance major consists of HBC224 Financial Management, HBE220 Macroeconomics, and four post-core units of study from the list below, at least two of which must be at Stage 3. A minor in Finance consists of HBC224, HBE220 and two post-core units of study, at least one of which must be at Stage 3.

Stage 1 (core units)
The following business core units are pre-requisites to the mandatory Finance units.
HBC110 Accounting for Success
HBE110 Microeconomics

Stage 2
HBC224 Financial Management (mandatory)
HBC230 Personal Investment
HBE220 Macroeconomics (mandatory)
HBE228 Banking and Financial Markets

Stage 3
HBC339 Financial Risk Management
HBE333 Financial Institutions and Monetary Policy
HBE335 International Finance
HBL333 Finance Law
* HBL333 Finance Law can be counted towards a Finance major but not a Finance minor.

Students who have taken HBC224 as part of a Management major or HBE220 as part of an Economics minor, must substitute another unit from the Finance major list.

Human Resource Management / Organisation Behaviour - Major/Minor

The units of study in this integrated area broadly cover many aspects of organisations and the human behaviour and processes which occur within those settings.

As a sequence of study it aims to:
• Prepare students for a range of human resource management and management roles in business.
• Develop a strong understanding of human resource management practices, organisation theory and structures, the behaviour of groups, the individuals who comprise those groups and the dynamic interrelationships among all these parts and aspects.
• Develop students’ capacity to reflect upon and understand their own and others’ behaviour.
• Develop communication and personal competence so that students are better equipped to fill the organisational roles which require interpersonal skills.

The HRM/OB study area can be taken as a vocational preparation for Human Resource Management (HRM), leading to associate membership of the Australian Human Resources Institute (course accredited by AHRI). To be eligible, students need to take all eight post core units of study offered in the HRM/OB area. Many students will wish to take HRM/OB studies without a career in HRM in mind. Such a major/minor provides an excellent insight into human behaviour in organisations and the management of people, and would combine well with any other vocational major. All business professionals ultimately work in or with organisations and with people.

A large proportion of the course material in this major stream is taught in an experiential manner which requires active involvement by students, structured reflection, linkage with ‘outside’ experiences, and thinking through application issues. In each unit of study, students will have time to work on the development of self-directed and interdependent learning skills.

Studies in HRM/OB prepare students for a vocation in HRM and provides them with the interpersonal and communication skills necessary for any position within an organisation. Students also acquire the managerial and general administrative skills necessary to work in any business environment. Career opportunities can be found in administration, human resources, training management, quality coordination and customer service.
A major in HRMfOB consists of six post-core units from the following list, at least two of which must be at Stage 3. A minor in HRMfOB consists of four post-core units, at least one of which must be at Stage 3.

**Stage 1 (core units)**

- HBH110  Organisation and Management

**Stage 2**

- HBH220  Organisational Behaviour and Change
- HBH222  Organisation Design & Technology
- HBH225  Human Resource Management in Contemporary Organisations
- HBH226  Strategic Human Resource Management

**Stage 3**

- HBH323  International Human Resource Management and Diversity
- HBH324  Managing Workplace Relations
- HBH325  Human Resource Management and Entrepreneurship
- HBH330  Leadership and Organisation Dynamics

**Information Systems - Major/Minor**

Information Systems enable strategic initiatives in organisations, and offer opportunities to extend business reach, impact market positioning, and to enhance business effectiveness and efficiency. Information Systems are driving profound changes to the way in which we conceptualise how we work, and the processes by which we produce and distribute goods and services. Information Systems are essential to business sustainability, and need to be carefully managed along with other organisational assets and resources. The Information Systems major enables you to study the basics of Information Systems, either from a more technical perspective, or from a more managerial and analytical perspective. Information Systems units of study offered are:

**Stage 1**

- HIT1401  Introduction to Business Information Systems (core unit of study)
- HIT1402  Database Analysis and Design
- HIT1403  ICT Environments
- HIT1404  Introduction to Programming in .NET

**Stage 2**

- HIT2316  Useability
- HIT2405  Requirements Analysis and Modelling
- HIT2411  Business Data Communications & Networks
- HIT2420  Database Management Systems
- HIT2425  Business Systems Programming in .NET
- HIT2427  Object-Oriented Programming in .NET

**Stage 3**

- HIT3037  Programming in Java
- HIT3044  Professional Issues in Information Technology
- HIT3078  Knowledge Management
- HIT3406  Enterprise Systems
- HIT3407  Information Systems Project Management
- HIT3408  Information Systems Risk and Security
- HIT3409  Process Modelling
- HIT3410  Systems Acquisition and Implementation Management
- HIT3412  Business Information Systems Analysis
- HIT3413  Business Intelligence
- HIT3416  Industry Project (Analytical)
- HIT3417  Industry Project (Technical)
- HIT3421  Database Implementation
- HIT3422  Database Performance Issues
- HIT3423  Enterprise Systems Management
- HIT3424  Information Systems Management
- HIT4071  Research Project

Note: Students should contact the ACS directly regarding current membership requirements and recognition of exemptions based on studies undertaken outside of Australia.

**Special Interest Groupings**

Within the Information Systems discipline there are a number of areas that a student may elect to study based on interest or career aspirations. Recommended elective units of study are listed under each grouping to assist students in their choice of units of study. In each case the core unit of study HIT1401 Introduction to Business Information Systems is required. Pre-requisites requirements must be taken into consideration when choosing the units of study. The 3 special interest groupings are detailed below.

**Systems Management**

Students selecting from Systems Management electives focus on understanding how to manage information systems to ensure the delivery of business value and sound returns on investments. Students will learn how to contribute to informed decision making about information systems, and learn how to manage IS-related risks.

- HIT3406  Enterprise Systems
- HIT3407  Information Systems Project Management
- HIT3408  Information Systems Risk and Security
- HIT3409  Process Modelling
- HIT3410  Systems Acquisition and Implementation Management
- HIT3412  Business Information Systems Analysis
- HIT3424  Information Systems Management

**Information & Knowledge Management**

Students selecting from Information & Knowledge Management electives will develop an understanding of the value of information as a business resource, how information can be used for strategic advantage, how to manage an organisation’s information resource, and how to identify the information needs of managers.

- HIT1402  Database Analysis and Design
- HIT2405  Requirements Analysis and Modelling
- HIT3078  Knowledge Management
- HIT3413  Business Intelligence
- HIT3419  Decision Analysis Systems
- HIT3412  Object Oriented Modelling
- HIT3412  Business Information Systems Analysis

**Systems Development**

Students selecting from Systems development electives will develop expertise in programming, database, and the design and development of information systems in a business environment.

- HIT1402  Database Analysis and Design
- HIT1403  ICT Environments
- HIT1404  Introduction to Programming in .NET
- HIT2405  Requirements Analysis and Modelling
- HIT2420  Database Management Systems
- HIT2425  Business Systems Programming in .NET
- HIT2427  Object-Oriented Programming in .NET
- HIT3310  Component Based Development .NET
- HIT3421  Database Implementation
- HIT3422  Database Performance Issues

**International Business - Major/Minor**

International Business is a multidisciplinary major. Industry, government and educational institutions recognise that increasingly business is carried on in a global marketplace. International business does not simply mean the export of goods. It includes the export of services such as accounting, trade in intellectual property, foreign direct investment, overseas portfolio investment and electronic commerce. The Swinburne major in International Business reflects this diversity and complexity.

A major or minor in International Business can be seen as a support to other majors in business especially majors in marketing, finance or accounting. A major in International Business may also be relevant to Arts students, especially those undertaking majors in Asian studies, European studies, Italian, Japanese or Politics.

Graduates may find employment in international trade, business management or business consultancy.

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To complete an International Business major the following three mandatory units of study must be completed HBI231, HBI340 and HBL331, at least one of HBI341, HBI392 and HBI394, and remaining units of study to be selected from HAA289, HAJ102, HBI289, HBI343, HBE335, HBB323, HBB432, HBM223 and HBM339.

To complete a minor in International Business two units of study must be completed from HBI331, HBL340 and HBI331, at least one of HBI341, HBI392 and HBI394, and remaining unit of study to be selected from HAA289, HAJ102, HBI289, HBI343, HBE335, HBB323, HBB432, HBM223 and HBM339.

Note: Students undertaking a major or a minor must complete ten units of study from the approved listing, including the three mandatory units of study.

**Stage 1 (core units)**

The following business core units of study are pre-requisites to the mandatory

**International Business units**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBI110</td>
<td>Microeconomics</td>
</tr>
<tr>
<td>HBL111</td>
<td>Law in Global Business</td>
</tr>
</tbody>
</table>

**Mandatory units**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBI123</td>
<td>Foundations of International Business</td>
</tr>
<tr>
<td>HBI340</td>
<td>International Trade Strategies</td>
</tr>
<tr>
<td>HBL331</td>
<td>International Business Law</td>
</tr>
</tbody>
</table>

**Stage 2 and 3 units**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBE335</td>
<td>International Finance</td>
</tr>
<tr>
<td>HBI323</td>
<td>International Human Resource Management and Diversity</td>
</tr>
<tr>
<td>HBI341</td>
<td>Asia - Business Context</td>
</tr>
<tr>
<td>HBI342</td>
<td>International Investment and Taxation</td>
</tr>
<tr>
<td>HBI392</td>
<td>European Union - Business Context</td>
</tr>
<tr>
<td>HBI394</td>
<td>The Americas: Business Context</td>
</tr>
<tr>
<td>HBM223</td>
<td>Transnational Marketing</td>
</tr>
<tr>
<td>HBM339</td>
<td>Transnational Business Practices</td>
</tr>
</tbody>
</table>

**Italian Studies - Major/Minor**

Italian Studies at Swinburne provides an insight into Italy, a modern, thriving and wealthy European country, industrially, economically and technologically advanced, among the top seven leading powers in the world.

The Italian Studies major is designed to acquaint students with Italian, an important cultural, community and commercial language. The broad aim is to enable students to communicate with Italians, on both linguistic and socio-cultural levels. The major study in Italian therefore strongly emphasises language acquisition, and progressively treats those aspects of Italian language, literature, history, geography, economics, sociology, politics and culture appropriate to an understanding of the modern nation and its inhabitants.

A degree major in Italian may be obtained by undertaking studies in one of two streams offered: a Beginner stream and an Advanced (post-VCE) stream. The Advanced (post-VCE) stream requires a pass and above at VCE level or equivalent.

Proficiency in Italian is an extremely useful skill to possess in addition to expertise in other fields such as arts, business, engineering, applied sciences and design. Graduates in Italian find employment in a wide range of professions including international business and trade, management, public relations, travel and tourism, social work, journalism and teaching.

The Italian major is sequential in nature. Students must successfully complete all language units of study in one stage before progressing to the next stage. Students are required to complete eight units of study to satisfy the requirements for an Italian Studies major.

Note: Students who intend, on graduating, to teach Italian at primary or secondary level or who do not wish to preclude this possibility should note that the exit point required in the Italian Studies major must be at the third-year Advanced level. To achieve this, it is suggested that students transfer to the Advanced stream by enrolling in HAA384 Individual Project after completing HAA283 Italian ZZ. A credit is the minimum requirement to be able to transfer to the Advanced course. Students must obtain approval from the Italian Studies Convenor prior to changing from one stream to another.

The Italian Studies major consists of the following:

**Beginners Stream**

**Stage 1**

HAA181 Italian and its Language 1A#
HAA182 Italian and its Language 2A#

**Stage 2**

HAA281 Italian 2X#
HAA282 Introductory Business Italian 2Y#
HAA283 Italian 2Z#

**Stage 3**

HAA381 Italian 3X#
HAA387 Advanced Business Italian#
HAA388 Contemporary Italy#

**Advanced Stream**

**Stage 1**

HAA194 Advanced Italian 1A#
HAA195 Advanced Italian 1B#

**Stage 2**

HAA284 Advanced Italian 2A#
HAA285 Introductory Business Italian 2B#
HAA286 Advanced Italian 2C#

**Stage 3**

HAA384 Individual Project#
HAA387 Advanced Business Italian#
HAA388 Contemporary Italy#

# Units of study required for an Italian major in either the Beginners or Advanced stream. A minor in Italian will consist of the five Stage 1 and Stage 2 units of study listed in the major.

Please note: As students are not required to complete a Stage 3 unit of study in the Italian minor, students taking this minor must ensure they complete a minimum of six Stage 3 units of study in the degree to satisfy course requirements.

**Japanese - Major/Minor**

Relationships have been established between Australia and Japan on all levels of the national life. This means that a study of Japanese language, both spoken and written, is in students' interests. Furthermore, it is important that a knowledge and understanding of Japan be increased in Australia. The Japanese programs train students to communicate effectively in Japanese and provide the opportunity to study Japanese culture, society and economy through the language. The emphasis is on contemporary Japanese.

The language units of study offered in Japanese have been specifically designed for non-native speakers of the Japanese language. These units of study will not meet the needs of native speakers of Japanese who will not be eligible to enrol in the language.

Teaching, events, organizing, interpreting, tourism (within Australia and Japan).

The Japanese major is sequential in nature. Students must successfully complete all units of study in a stage before progressing to the next stage. A major in Japanese can be completed in a Beginners or Advanced (post-VCE Japanese) stream. Students who intend, on graduating, to teach Japanese either at primary or secondary level or who do not wish to preclude this possibility should note that the exit point required for attainment of the Japanese major is the third-year Advanced level. To achieve this, students are advised to transfer to the Advanced stream by enrolling in third year Advanced units of study after completing second year. A credit is the minimum requirement to be able to transfer to the Advanced course.

Note: Students whose Stage 2 results are credit or above in either the Beginners or the Advanced stream may choose to study a part of their third year course at an approved tertiary institution in Japan. A scholarship scheme has been established to enable students to undertake this alternative.

**Beginners Stream**

**Stage 1**

HAJ107 Introductory Japanese 1A#
HAJ108 Written Japanese 1B#
Management - Major/Minor

Management is a multidisciplinary area of study which aims to prepare students for a range of management roles in business. Students develop a strong understanding of the ways in which key resources, both human and financial, need to be planned, positioned, and controlled, and the products and services marketed to achieve an organisation's strategic goals.

This major aims to develop students' capacity to think strategically and in an integrated way about complex management issues and problems. In a number of units, students will also be encouraged to develop communication skills and personal competence so that they are better equipped to fill organisational roles with supervisory and management elements.

The major sequence of study requires students to combine studies in finance and management accounting, human resource management and marketing as three strands of expertise which are then integrated in a 'capstone' final year unit. Emphasis is placed on sound analysis of problems and practical application of knowledge. Students are encouraged to think through problems and develop workable solutions. In this way, the Management major will develop sound judgement and problem solving capacity in Business graduates.

There are many opportunities for Management graduates, both as general management cadets and trainees in larger organisations, or as managers of small and medium enterprises. Graduates who move into their own family or other businesses will equip graduates with managerial roles.

To complete a Management major the following six post-core units of study must be completed: HBC222, HBC224, HBM222, HBM234; one of the following: HBB220, HBB222, HBB225, HBB226; and one of the following: HBBH223, HBBH325, HBBH330, HBBH330, HBBH331. A Management minor is not offered.

Students completing both a Management and Marketing major must complete HBB222 and HBBM341 as part of the Management major and complete additional units towards the Marketing major. Refer to the Marketing section for Marketing major requirements.

Stage 1 (core units)
The following business core units are pre-requisites for the Management units.

- HBC110 Accounting for Success
- HBC110 Organisation and Management
- HBM110 The Marketing Concept

Mandatory units

- HBB222 Management Decision Making
- HBB224 Financial Management
- HBBM222 Marketing Planning

One of:
- HBB220 Organisational Behaviour and Change
- HBB222 Organisation Design & Technology
- HBB225 Human Resource Management in Contemporary Organisations
- HBBH226 Strategic Human Resource Management

One of:
- HBBH233 International Human Resource Management and Diversity
- HBBH235 Human Resource Management and Entrepreneurship
- HBBH330 Leadership and Organisation Dynamics
- HBBH330 Marketing Innovation Management
- HBBM331 Services Marketing and Management
- HBBM341 Business Strategy (mandatory capstone unit taken in final semester of study)

Manufacturing Management - Major/Minor

The manufacturing and processing of consumer and industrial products of food, beverages, automobiles, metals, plastics and minerals is an important part of the Australian economy. Following the deregulation of the early 1980's, it is fair to say that today's Australian companies in the dynamic manufacturing and processing industries are at, or close to, world class competitive standards.

These industries are large employers; graduates with a major in Manufacturing Management are well positioned for a wide range of employment opportunities in operations management, human resource management, marketing, financial analysis, information systems, management accounting or technology management and innovation.

The Industry Based Learning (IBL) year is strongly recommended for Manufacturing Management students.

The Foundation for Australian Manufacturing Education (FAME) sponsors studies in Manufacturing Management. Business Victoria, Visy and FAME have provided funding for scholarships in this area. Scholarships are based on academic performance and IBL placement.

The study of Manufacturing Management at Swinburne, when allied with other Bachelor of Business majors/minors and double degree options, can provide an interesting variety of employment and career opportunities, including: general management, small and medium enterprises, management traineeships and cadetships in large businesses and organisations.

The major in Manufacturing Management comprises four mandatory units of study and two additional units from one of the groups of listed below. A minor in Manufacturing Management comprises the four mandatory units of study. Note: Students cannot complete a major and a minor in Manufacturing Management. Students must complete prerequisite requirements for the units of study they select.

Stage 1 (core units)
The following business core unit of study is a pre-requisite for the mandatory Manufacturing Management units of study:

- HBBH110 Organisation and Management

Mandatory units

- HBBH222 Organisation Design & Technology
- HBBH228 Manufacturing Management
Marketing - Major/Minor

Successful companies take the path of 'market focus', that is, their strategies are customer driven. Marketing deals with the building and implementation of customer focus.

The meaning of marketing is often misunderstood. One need look no further than the many advertisements without any real substance as to customer benefits and/or the delivery of these benefits. Frequently no distinction is made between selling and marketing. Unfortunately marketing has been introduced into many organisations as the 'in word', a kind of cosmetic change, the solution to the company's problems, without changing the focus and the attitudes prevailing in the organisation. This has not worked, resulting in companies becoming disillusioned with marketing.

These companies did not understand the meaning of marketing. What does it mean? The answer is relatively simple: put yourself inside the skin of your customers and forget yourself for a while. That in itself is difficult to do, but that is exactly the difference between superficial and real marketing. To make this transition involves a rethink on your part, instead of thinking on behalf of your customers you have to learn to listen to your clients, accept what they say at face value and execute what they want.

At Swinburne we explain the components of a business plan and marketing's central role in strategy. Students are introduced to topics such as consumer behaviour, demand determinants, customer focus, marketing research, marketing planning, product and services management, advertising and promotion, transnational marketing and business environments of some European and Asian countries. Students are encouraged to think through problems and to find their own answers. They are assisted in exploring their thinking processes to ensure that they make the most of their abilities. Practical application and real life units of study are the key features of a marketing major and minor and elective(s). Refer to majors and minors listed below.

Public relations, advertising, product/brand management, market research, direct marketing, international marketing.

To complete a Marketing major the following post-core units of study must be completed: HBM220; HBM222; HBM330; HBM333; HBM339; either HBM330 or HBM331; and HBM341.

To complete a Marketing minor with a Marketing major four of the following units of study must be completed, with at least one at Stage 3: HBM220; either HBM222; HBM223 or HBM227; either HBM330 or HBM331; HBM333; HBM341.

To complete a Marketing minor without a Marketing Major four of the following post-core units of study must be completed, with at least one at Stage 3: HBM220; HBM222; HBM223 or HBM227; either HBM330 or HBM331; HBM333; HBM341. Students completing both a Marketing and Management major must complete HBM330 and HBM331 and one other unit of study from the Marketing minor as HBM222 and HBM341 must be completed towards the Management major.

Aims & Objectives

Refer to the Bachelor of Business [A055] entry in this handbook.

Career Opportunities

Students with studies in Accounting find rewarding work in industry, commerce, the public sector, the financial industry or business consulting and public accounting.

Professional Recognition

Graduates fulfil the requirements for recognition by the CPA Australia (CPAA) and the Institute of Chartered Accountants of Australia (ICAA).

Course Duration

Three years full-time or six years part-time. An optional and additional year of Industry-Based Learning (IBL) is also available. Students holding an international student visa are required to study full-time. The optional year of Industry-Based Learning (IBL) is not available to international students.

Course Structure

To complete the requirements of this course, students must complete twenty-four units of study comprising the seven business core units of study and at least a major and minor and elective(s). Refer to majors and minors listed below. A mandatory unit of study HGB0004 Careers in the Curriculum (zero credit points) must also be completed.

A major consists of six post-core units of study at least two of which must be at Stage 3 level. A minor consists of four post-core units of study at least one of
which must be at Stage 3 level. An elective is a unit of study that is not part of the core, a major or minor. See page 32 for business minor details.

All eighteen units of study listed below must be completed within this structure and an additional six units of study are required to make up either another major or a minor and electives.

Students wishing to enrol in units which are not a formal part of this course will be required to seek approval from the Faculty Manager prior to enrolment.

Note: this course structure should be read in conjunction with the A055 Bachelor of Business course entry.

Units of Study

Stage 1

Business Core Units of Study

HBC110 Accounting for Success
HBE110 Microeconomics
HBH110 Organisation and Management
HBL111 Law in Global Business
HBM110 The Marketing Concept
HIT1401 Introduction to Business Information Systems
HMB110 Quantitative Analysis A, OR
HMB111 Quantitative Analysis B

Stage 2

HBC220 Financial Information Systems
HBC221 Corporate Accounting
HBC222 Management Decision Making
HBC223 Analysis for Competitive Advantage
HBC224 Financial Management
HBC225 Auditing and Assurance
HBE220 Macroeconomics
HBL220 Contract Law
HBL221 Company Law

Stage 3

HBC330 Current Issues in Accounting
HBC331 Taxation Issues and Planning

Six additional units of study must be completed. These units of study may be taken as a major or a minor and two electives.

Entry Requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE prerequisites: Units 3 and 4 - a study score of at least 20 in English (any). Refer to the Bachelor of Business [A055] for other entry options.

For further information, visit the VTAC website at: www.vtac.edu.au

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 34181 (CSP), 34182 (Fee), 34183 (Int. Fee)

Bachelor of Business (Human Resource Management) [A043]

The Bachelor of Business (Human Resource Management) is a vocationally oriented course designed to assist in the intellectual, social and personal development of the student as preparation for entrance to human resource management professions. The program prepares students for a career in business, whether domestic or international, recognising that the business world is a global one as we step into the 21st Century. It also produces educationally rounded people, capable of taking their places in their chosen professions and in the community.

Swinburne takes particular pride in producing business graduates who are employment-ready, of immediate practical relevance to their employers and capable of excellent career development from a strong commencing base. Along with this knowledge and skills development, the program deliberately takes on an entrepreneurial ‘flavour’ throughout its entirety.

Graduates will have the basic capacity, attributes and ‘mindset’ to consider creating their own enterprises from the time of graduation, or at some future point in their career. They will therefore be well prepared to either seek professional entry as an employee in their chosen field of specialisation or to grasp innovative business opportunities to employ themselves and others.

Aims & Objectives

Refer to the Bachelor of Business [A055] entry in this handbook.

Campus

Hawthorn, Sarawak

Career Opportunities

Studies in HRM/CB prepare students for a vocation in HRM and provide students with the interpersonal and communication skills necessary for any position within an organisation. Students also acquire the managerial and general administrative skills necessary to work in any business environment. Career opportunities can be found in: administration, human resources, training management, quality co-ordination, customer service.

Professional Recognition

Graduates of this course are recognised by the Australian Human Resources Institute (AHRI).

Course Duration

Three years full-time or six years part-time. An optional and additional year of Industry-Based Learning (IBL) is also available.

Students holding an international student visa are required to study full-time. The optional year of Industry-Based Learning (IBL) is not available to international students.

Course Structure

To complete the requirements of this course students must complete twenty-four units of study comprising the seven business core units of study, eight Human Resource Management units of study and nine additional units of study that may be taken as a major and three electives, two minors and one elective, or one minor and five electives. A mandatory unit of study HBG0004 Careers in the Curriculum (zero credit points) must also be completed.

A major consists of six post-core units of study at least two of which must be at Stage 3 level. A minor consists of four post-core units of study at least one of which must be at Stage 3 level. An elective is a unit of study that is not part of the core, a major or minor. See page 32 for business minor details.

Students wishing to enrol in units of study which are not a formal part of this course will be required to seek approval from the Faculty Administration Manager prior to enrolment.

Note: this course structure should be read in conjunction with the A055 Bachelor of Business course entry.

Units of Study

Stage 1

Human Resource Management Units of Study

HBC110 Accounting for Success
HBE110 Microeconomics
HBH110 Organisation and Management
HBL111 Law in Global Business
HBM110 The Marketing Concept
HIT1401 Introduction to Business Information Systems
HMB110 Quantitative Analysis A, OR
HMB111 Quantitative Analysis B

Stage 2

Human Resource Management Units of Study

HBB220 Organisational Behaviour and Change
HBB222 Organisation Design & Technology
HBB225 Human Resource Management in Contemporary Organisations
HBB226 Strategic Human Resource Management

Stage 3

HBB323 International Human Resource Management and Diversity
HBB324 Managing Workplace Relations
HBB325 Human Resource Management and Entrepreneurship

Swinburne University of Technology | Undergraduate Course Handbook 2008
HBH330  Leadership and Organisation Dynamics
Nine additional units of study must be completed. These units of study may be taken as a major and three electives, two minors and one elective, or a minor and five electives.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2008 VCE prerequisites: Units 3 and 4 - a study score of at least 20 in English (any).
Refer to the Bachelor of Business [A055] for other entry options.
2007 Round 1 Clearly-In ENTER: 76.85 (CSP), 72.50 (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34411 (CSP), 34412 (Fee), 34413 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
NOTE: Application is to the A055 Bachelor of Business. Successful applicants will be requested to advise of their preferred course at the time of enrolment.

Bachelor of Business (Information Systems) [A046]
The Bachelor of Business (Information Systems) is a vocationally-oriented course that is designed to assist in the intellectual, social and personal development of the student as preparation for entrance to a range of specialist and generalist business professions. The program prepares students for a career in business, whether domestic or international, recognising that the business world is a global one as we step into the 21st Century. It also produces educationally rounded people, capable of taking their place in their chosen profession and community.
Swinburne takes particular pride in producing business graduates who are employment-ready, of immediate practical relevance to their employers and capable of excellent career development from a strong commencing base. Along with this knowledge and skills development, the program deliberately takes on an entrepreneurial 'flavour' throughout its entirety.
Graduates will have the basic capacity, attributes and 'mindset' to consider creating their own enterprises from the time of graduation, or at some future point in their career. They will therefore be well prepared to either seek professional entry as an employee in their chosen field of specialisation or to grasp innovative business opportunities to employ themselves and others.

Aims & Objectives
Refer to the Bachelor of Business [A055] entry in this handbook.

Campus
Hawthorn

Career Opportunities
This degree opens up many employment opportunities, both in the public and private sectors. Students currently find employment in organisations that utilise information technology to support traditional business applications. Students may choose to specialise in one of the following special interest areas:

Systems Management
Students selecting from Systems Management electives focus on understanding how to manage information systems to ensure the delivery of business value and sound returns on investments. Students will learn how to contribute to informed decision making about information systems, and learn how to manage IS-related risks.

Information & Knowledge Management
Students selecting from Information & Knowledge Management electives will develop an understanding of the value of information as a business resource, how information can be used for strategic advantage, how to manage an organisation's information resource, and how to identify the information needs of managers.

Systems Development
Students selecting from Systems Development electives will develop expertise in programming, database, and the design and development of information systems in a business environment.

Course Duration
Three years full-time or six years part-time. An optional and additional year of Industry-Based Learning (IBL) is also available.

Note: Students holding an international student visa are required to study full-time. The optional year of Industry-Based Learning (IBL) is not available to international students.

Course Structure
To satisfy the requirements for this program students must complete the following:
• Seven business core units of study
• HIT1402, HIT1403, HIT1404, HIT2405, HIT3044, HIT3407, HBS3270, HMB271, HMB272, HBM370.
• Plus any two of the following units of study: HIT3406, HIT3408, HIT3409, HIT3410, HIT3424
• Plus five units of study that may be taken as a minor and one elective or 5 elective units of study.

A major consists of six post-core units of study, with at least two of which must be at Stage 3 level. An elective is a unit of study that is not part of the core, a major or minor. See page 32 for business major/minor details.

Note: this course structure should be read in conjunction with the A055 Bachelor of Business course entry.

Units of Study

Business Core Units
HBC110  Accounting for Success
HBE110  Microeconomics
HBY110  Organisation and Management
HBL111  Law in Global Business
HBM110  The Marketing Concept
HIT1401  Introduction to Business Information Systems
HMB110  Quantitative Analysis A, OR
HMB111  Quantitative Analysis B

Course Units of Study

Stage 1
HIT1402  Database Analysis and Design
HIT1403  ICT Environments
HIT1404  Introduction to Programming in .NET

Stage 2
HIT2405  Requirements Analysis and Modelling
HBS270  eBusiness
HMB271  eCustomer Relationship Management
HMB272  eMarketing

Stage 3
HBM370  eCommerce Strategy: A Management Perspective
HIT3044  Professional Issues in Information Technology
HIT3407  Information Systems Project Management

Five additional units of study must be completed, which may be taken as a minor and one elective or five electives.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2008 VCE prerequisites: Units 3 and 4 - a study score of at least 20 in English (any).
Refer to the Bachelor of Business [A055] for other entry options.
2007 Round 1 Clearly-In ENTER: 76.85 (CSP), 72.50 (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34411(CSP), 34412 (Fee), 34413 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
Bachelor of Business (International Business) [A045]
The Bachelor of Business (International Business) is a vocationally oriented course that is designed to assist in the intellectual, social and personal development of the student as preparation for entrance into a range of specialist and generalist business professions. The program prepares students for a career in business, recognising that the business world is a global one as we step into the 21st Century. The Bachelor of Business (International Business) is a response to the pressures and opportunities globalization is creating for Australian business. Australian business graduates must be equipped to operate in a global marketplace.

Swinburne takes particular pride in producing business graduates who are employment-ready, of immediate practical relevance to their employers and capable of excellent career development from a strong commencing base. Along with this knowledge and skills development, the program deliberately takes on an entrepreneurial ‘flavour’ throughout its entirety. Graduates will have the basic capacity, attributes and ‘mindset’ to consider creating their own enterprises from the time of graduation, or at some future point in their career. They will therefore be well prepared to either seek professional entry as an employee in their chosen field of specialization or to grasp innovative business opportunities to employ themselves and others.

Aims & Objectives
Refer to the Bachelor of Business [A055] entry in this handbook.

Campus
Hawthorn, Sarawak

Career Opportunities
Students with studies in international Business find rewarding work in institutions and firms engaged in aspects of international business.

Professional Recognition
For full details on professional recognition pertaining to this course refer to the Bachelor of Business course entry.

Course Duration
Three years full-time or six years part-time. An optional and additional year of Industry-Based Learning (IBL) is also available.

Note: Students holding an international student visa are required to study full-time. The optional year of Industry-Based Learning (IBL) is not available to international students.

Course Structure
To complete the requirements of this course students must complete twenty-four units of study comprising seven business core units of study, a major in International Business, a minor in either Asian Business, European Business or International Business and an overseas study component, and seven additional units of study (which may comprise either another major and one elective, another minor and three electives or seven electives). Refer to majors and minors listed below. A mandatory unit of study HBG0004 Careers in the Curriculum (zero credit points) must also be completed.

A major consists of six post-core units of study at least two of which must be at Stage 3 level. A minor consists of four post-core units of study at least one of which must be at Stage 3 level. An elective is a unit of study that is not part of the core, a major or minor. See page 32 for business major/minor details.

Students wishing to enrol in units of study which are not a formal part of this course must be required to seek approval from the Faculty Administration Manager prior to enrolment.

Note: this course structure should be read in conjunction with the A055 Bachelor of Business course entry.

Overseas Study Component
Students are required to complete a minimum of 25 credit points overseas OR completion of one of the following units of study:
- HAJ302 Work Experience in Japan
- HBI390 Work Experience in Europe
- HBI390 International Union Study Tour
- HBI391 Pacific Rim Business Study Tour
- HBI390 Industry Placement completed overseas will also be accepted to fulfil the requirements of the overseas study component.

NOTE: International students are precluded from the mandatory overseas study component. Domestic students may apply for a preclusion from the overseas component if they have already completed studies overseas.

Units of Study

Business Core Units of Study

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBC110</td>
<td>Accounting for Success</td>
</tr>
<tr>
<td>HBE110</td>
<td>Macroeconomics</td>
</tr>
<tr>
<td>HBH110</td>
<td>Organisation and Management</td>
</tr>
<tr>
<td>HBL111</td>
<td>Law in Global Business</td>
</tr>
<tr>
<td>HBM110</td>
<td>The Marketing Concept</td>
</tr>
<tr>
<td>HT1401</td>
<td>Introduction to Business Information Systems</td>
</tr>
<tr>
<td>HMB110</td>
<td>Quantitative Analysis A, OR</td>
</tr>
<tr>
<td>HMB111</td>
<td>Quantitative Analysis B</td>
</tr>
</tbody>
</table>

International Business Major

Mandatory units of study:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBI231</td>
<td>Foundations of International Business</td>
</tr>
<tr>
<td>HBI340</td>
<td>International Trade Strategies</td>
</tr>
<tr>
<td>HBL321</td>
<td>International Business Law</td>
</tr>
</tbody>
</table>

At least one of:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBJ341</td>
<td>Asia - Business Context</td>
</tr>
<tr>
<td>HBJ392</td>
<td>European Union - Business Context</td>
</tr>
<tr>
<td>HBJ394</td>
<td>The Americas: Business Context</td>
</tr>
</tbody>
</table>

And remaining units of study from:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>HBE335</td>
<td>International Finance</td>
</tr>
<tr>
<td>HBJ223</td>
<td>International Human Resource Management and Diversity</td>
</tr>
<tr>
<td>HBJ342</td>
<td>International Investment and Taxation</td>
</tr>
<tr>
<td>HBM223</td>
<td>Transnational Marketing</td>
</tr>
<tr>
<td>HBM339</td>
<td>Transnational Business Practises</td>
</tr>
</tbody>
</table>

Asian Business Minor

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>HBJ341</td>
<td>Asia - Business Context</td>
</tr>
</tbody>
</table>

And three from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAJ232</td>
<td>Introduction to Japan: A Cultural Overview</td>
</tr>
<tr>
<td>HAJ101</td>
<td>Introductory Japanese 1A (or other Asian language unit of study)</td>
</tr>
<tr>
<td>HAJ202</td>
<td>Communication in Japanese</td>
</tr>
<tr>
<td>HAJ203</td>
<td>Work Experience in Japan</td>
</tr>
<tr>
<td>HBJ342</td>
<td>International Investment and Taxation</td>
</tr>
<tr>
<td>HBJ391</td>
<td>Pacific Rim Business Study Tour</td>
</tr>
<tr>
<td>HBM390</td>
<td>European Union Study Tour</td>
</tr>
</tbody>
</table>

European Business Minor

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBJ392</td>
<td>European Union - Business Context</td>
</tr>
</tbody>
</table>

And three from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAJ119</td>
<td>Post-War Italy</td>
</tr>
<tr>
<td>HAJ181</td>
<td>Italy and Its Language 1 (or other European language unit of study)</td>
</tr>
<tr>
<td>HBJ289</td>
<td>Comparative European Politics</td>
</tr>
<tr>
<td>HBJ287</td>
<td>European Union</td>
</tr>
<tr>
<td>HBJ342</td>
<td>International Investment and Taxation</td>
</tr>
<tr>
<td>HBJ389</td>
<td>Work Experience in Europe</td>
</tr>
<tr>
<td>HBJ390</td>
<td>European Union Study Tour</td>
</tr>
</tbody>
</table>

International Business Minor

At least two of:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBI231</td>
<td>Foundations of International Business</td>
</tr>
<tr>
<td>HBI340</td>
<td>International Trade Strategies</td>
</tr>
<tr>
<td>HBL321</td>
<td>International Business Law</td>
</tr>
</tbody>
</table>

At least one of:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBJ341</td>
<td>Asia - Business Context</td>
</tr>
<tr>
<td>HBJ392</td>
<td>European Union - Business Context</td>
</tr>
<tr>
<td>HBJ394</td>
<td>The Americas: Business Context</td>
</tr>
</tbody>
</table>

And remaining units of study from:
HBE235  International Finance
HBM233  International Human Resource Management and Diversity
HBM342  International Investment and Taxation
HBM223  Transnational Marketing
HBM339  Transnational Business Practices

Students must take another seven units of study. This provides the opportunity to take a second major (six units of study) or minor (four units of study) in another discipline, plus electives. Alternatively, all seven units of study may be taken as electives.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2008 VCE prerequisites: Units 3 and 4 - a study score of at least 20 in English (any).
Refer to the Bachelor of Business [A055] for other entry options.
2007 Round 1 Clearly-In ENTER: 75.85 (CSP), 72.50 (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34411 (CSP), 34412 (Fee), 34413 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
NOTE: Application is to the A055 Bachelor of Business. Successful applicants will be requested to advise of their preferred course at the time of enrolment.

Bachelor of Business (Marketing) [A044]
The Bachelor of Business (Marketing) is a vocationally oriented course that is designed to assist in the intellectual, social and personal development of the student as preparation for entrance to a range of specialist and generalist business professions. The program prepares students for a career in business, whether domestic or international, recognising that the business world is a global one as we step into the 21st Century. It also produces educationally rounded people, capable of taking their place in their chosen profession and community. Swinburne takes particular pride in producing business graduates who are employment-ready, of immediate practical relevance to their employers and capable of excellent career development from a strong beginning.
Along with this knowledge, skills and development, the program deliberately takes on an entrepreneurial 'flavour' throughout its entirety.
Graduates will have the basic capacity, attributes and 'mindset' to consider creating their own businesses from the time of graduation, or at some future point in their career. They will thereby be well-prepared to either seek professional entry as an employee in their chosen field of specialisation or to grasp innovative business opportunities to employ themselves and others.

Aims & Objectives
Refer to the Bachelor of Business [A053] entry in this handbook.

Campus
Hawthorn, Sarawak

Career Opportunities
Students with studies in marketing find rewarding work in public relations, advertising, product/brand management, market research, direct marketing and international marketing.

Professional Recognition
Graduates of this course are eligible to become associates of the Australian Marketing Institute (AMI). In addition, this course also fulfils the educational requirements for recognition as a Certified Practising Marketer. Students should further refer to A055 Bachelor of Business.

Course Duration
Three years full-time or six years part-time. An optional and additional year of Industry-Based Learning (IBL) is also available.
Note: Students holding an international student visa are required to study full-time. The optional year of Industry-Based Learning (IBL) is not available to international students.

Course Structure
To complete the requirements of this course students must complete twenty-four units of study comprising the seven business core units of study and a major and minor in marketing, and seven additional units of study that may be taken as a major and one elective, a minor and three electives, or seven electives. A mandatory unit of study HBG0004 Careers in the Curriculum (zero credit points) must also be completed.
A major consists of six post-core units of study at least two of which must be at Stage 3 level. A minor consists of four post-core units of study at least one of which must be at Stage 3 level. An elective is a unit of study that is not part of the core, a major or minor. Refer to majors and minors listed below.
All seventeen units of study listed below must be completed within this structure and an additional seven units of study are required to make up either another major or minor and electives. See page 32 for business major/minor details.

Students wishing to enrol in units of study that are not a formal part of this course will be required to seek approval from the Faculty Administration Manager prior to enrolment.

Note: this course structure should be read in conjunction with the A055 Bachelor of Business.

Units of Study
Stage 1

Bachelor of Business Core Units of Study
HBC110  Accounting for Success
HBE110  Microeconomics
HBB110  Organisation and Management
HBL111  Law in Global Business
HBM110  The Marketing Concept
HMB110  Quantitative Analysis A, OR
HME111  Quantitative Analysis B

Stage 2

HBL222  Marketing Law
HBM220  Market Behaviour (highly recommended as the first unit of study studied in Marketing post-core)
HBM222  Marketing Planning
HBM223  Transnational Marketing
HBO229  Marketing Research

Stage 3

HBM310  Marketing Innovation Management
HBM311  Services Marketing and Management
HBM333  Communications Strategy
HBM341  Business Strategy (capstone unit of study)
And one of (from Stage 2 and 3):
HBM271  eCustomer Relationship Management
HBM272  eMarketing
HBM339  Transnational Business Practices

Seven additional units of study must be completed. These units of study may be taken as a major and one elective, a minor and three electives, or seven electives.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2008 VCE Prerequisites: Units 3 and 4 - a study score of at least 20 in English (any).
Refer to the Bachelor of Business [A055] for other entry options.
2007 Round 1 Clearly-In ENTER: 75.85 (CSP), 72.50 (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34411 (CSP), 34412 (Fee), 34413 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
NOTE: Application is to the A055 Bachelor of Business. Successful applicants will be requested to advise of their preferred course at the time of enrolment.
Double Degrees

Bachelor of Business / Bachelor of Arts (Italian) [A055]
The Bachelor of Business/Bachelor of Arts (Italian) is a vocationally oriented course designed to assist in the conceptual, social and personal development of the student as preparation for entrance to a range of specialist and generalist business professions. The program prepares students for a career in business, whether domestic or international, recognizing that the business world is a global one as we step into the 21st Century. It also produces educationally rounded people, capable of taking their place in their chosen profession and their community.

The ability to communicate, both verbally and in documents, in the language of the customer is seen as a significant advantage for Australian business people trying to break into competitive international markets. Swinburne particularly takes pride in producing business graduates who are employment-ready, of immediate practical relevance to their employers and capable of excellent career development from a strong commencing base. Along with knowledge and skills development, the program deliberately takes on an entrepreneurial 'flavour' throughout its entirety. Graduates will have the basic capacity, attributes and 'mindset' to consider creating their own enterprises from the time of graduation, or at some future point in their career. They will therefore be well prepared to either seek professional entry as an employee in their chosen field of specialisation or grasp innovative business opportunities to employ themselves or others.

Swinburne’s Bachelor of Business/Bachelor of Arts (Italian) is a unique course offering students, with no previous knowledge of the language, study of the Italian language and its associated areas including culture, social, political and economic aspects, and an array of business specialisations. Completing students are eligible to receive two degrees, a Bachelor of Business and a Bachelor of Arts (Italian). In addition to the academic and practical skills which this course provides, it also opens up a myriad of international study and work opportunities upon which to build networks within Italy.

Aims & Objectives
Refer to the Bachelor of Business [A055] entry in this handbook.

Campus
Hawthorn

Career Opportunities
Graduates of this double degree enjoy opportunities wherever Italian is spoken, with particular advantages in organisations where there are either joint country business ventures or offices located in Italy. In order to teach Italian, graduates must have completed the Stage 3 units of study in the Advanced Italian stream.

The business majors provide graduates with skills in a wide range of professional occupations. For career opportunities based on business majors refer to Business specialisations listed under the A055 Bachelor of Business course entry.

Professional Recognition
For full details on professional recognition pertaining to this course refer to the A055 Bachelor of Business course entry.

Course Duration
Four years full-time or eight years part-time. An optional and additional year of Industry-Based Learning (IBL) is also available.

Note: Language units of study are not normally available in the evening.

Students holding an international student visa are required to study full-time. The optional year of Industry-Based Learning (IBL) is not available to international students.

Course Structure
The course comprises thirty-two semester units of study and is designed to enable students to complete the compulsory requirements for any business major together with the full range of Italian units of study in order to complete the requirements of the two degrees. The requirements of this course should be read in conjunction with the A055 Bachelor of Business course description.

Students must complete the core units of study of the business degree (seven units) and a major (six units) chosen from one of the approved business specialisations (refer to Business specialisations below) - a minimum of thirteen business specific units of study, plus eight mandatory Italian language units of study and five supporting cultural units of study and six additional units of study (major, minor and/or electives) which may be selected from units of study offered in the Bachelor of Arts or Bachelor of Business specialisations or other disciplines outside the Faculty of Business and Enterprise. For full details of Business and Arts specialisations pertaining to this course refer to the major/minor list below. A mandatory unit HBG0004 Careers in the Curriculum (zero credit points) must also be completed.

A major consists of six post-core units of study at least two of which must be at Stage 3 level. A minor consists of four post-core units of study at least one of which must be at Stage 3 level. An elective is a unit of study that is not part of the business core, a major or minor. See page 32 for business major/minor details.

Note: the requirements of this course should be read in conjunction with the A055 Bachelor of Business course description.

Students wishing to enrol in units of study which are not a formal part of this course will be required to seek approval from the Faculty Administration Manager prior to enrolment.

Stage 3 Units of Study – Honours Stream Option
Each semester a limited number of Stage 3 units of study are offered by the Faculty of Business and Enterprise to students as an Honours stream option. These units of study provide students with the challenge and an opportunity to develop a deeper understanding of the subject matter, and to develop research skills by completing research based assessment tasks. To enrol students are required to have achieved a credit grade average in the discipline units studied to date, an overall credit average and gain approval from the unit of study convenor. Students enrolled in Honours stream units of study will have codes appended with an H and the words (Honours stream) appended with an H and the words (Honours stream) to reflect the higher academic content and requirements. The Honours Stream option is highly recommended for students considering enrolment in the Bachelor of Business (Honours) course upon completion of the degree.

Course restrictions
Students should note the following restrictions on units of study that can be credited towards the Bachelor of Business/Bachelor of Arts (Italian):

- A minimum of eight units of study must be completed at Swinburne University. This must include completion of half the units of study for all majors and minors. At least one Stage 3 unit of study for any major or minor must also be completed at Swinburne University with the exception of Italian and Japanese language majors or minors. This regulation must be observed in course plans that include unit of study exemptions, studies completed through international exchange, cross-institutional study or study abroad.
- A maximum of twelve units of study from any discipline (e.g. Accounting – ‘HAC’, Marketing – ‘HBM’ unit code prefix).
- A maximum of twelve Stage 1 units of study (e.g. HBM110 – Stage 1 units have a 1 immediately following the three-letter code).
- A minimum of three Stage 3 units of study must be completed in addition to the mandatory Stage 3 language and cultural units of study (e.g. HBM330 - Stage 3 units have a 3 immediately following the three-letter code).
- The unit of study HAT119 Academic Communication Skills cannot be used for credits towards the double degree.
- A unit of study can only be counted once as part of a major or minor or as an elective - one unit of study cannot be counted twice (e.g. the unit of study HBA222 may be counted towards either a Management or Marketing major, but not both).
- Students are not permitted to enrol in units of study where they have completed another unit of study that is deemed to be equivalent.
- HBS300 Industry Placement cannot be used for credit towards the double degree.
- Students will be allowed to study a maximum of thirty-four units of study as part of the double degree.

Majors/Minors & Specialisations
The following business specific majors/minors are available:
- Accounting
- Asian Business#
- Business Law
- Economics#
- eBusiness#
- European Business#
- Finance
- Human Resource Management / Organisational Behaviour
The seven business core units of study are:

- HBL111 Accounting for Business
- HBE110 Microeconomics
- HBI110 Organisation and Management
- HBC110 Introduction to Business Information Systems
- HBM110 Marketing
- HBI390 European Business
- HBI288 International Business

Recommended Electives

- HBI339 Work Experience in Europe
- HBI390 European Union Study Tour
- HAT116 Linguistics

Students who intend, on graduating, to teach Italian either at primary or secondary level or who do not wish to preclude this possibility should note that the exit point required in the Italian Language stream must be at the third-year level. To achieve this, it is suggested that students in the beginners stream transfer to the Advanced stream by enrolling in HAA384 Individual Project in the last semester of studies. A credit is the minimum requirement to be able to transfer to the Advanced stream.

Language and business units of study must normally be studied simultaneously throughout the duration of the course.

Entry Requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE prerequisites: Units 3 and 4 - a study score of at least 20 in English (any). Bonus points will be given for VCE LOTET. For further information see the VTAC website: www.vtac.edu.au

NOTE: This three year intensive language sequence assumes no prior knowledge of the language. Advanced language sequence is available for students who have passed VCE level Italian.

Refer to the Bachelor of Business [A055] for other entry options.

2007 Round 1 Clearly-In ENTER: 76.25 (CSP), n/a (Fee)

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34651 (CSP), 34652 (Fee), 34653 (Int. Fee).

For further information, visit the VTAC website: www.vtac.edu.au

Note: First year languages units of study will not be available to students commencing in Semester 2. This could mean that the course duration will be longer than the advertised duration.

Bachelor of Business / Bachelor of Arts (Japanese) [A057]

The Bachelor of Business/Bachelor of Arts (Japanese) is a vocationally oriented course that is designed to assist in the intellectual, social and personal development of the student as preparation for entrance to a range of specialist and generalist business professions. The program prepares students for a career in business, whether domestic or international, recognising that the business world is a global one as we step into the 21st Century. It also produces educationally rounded people, capable of taking their places in their chosen professions and in the community in which they live.

The ability to communicate, both verbally and in documents, in the language of the customer is seen as a significant advantage for Australian business people trying to break into competitive international markets. Swinburne takes particular pride in producing business graduates who are employment-ready, of immediate practical relevance to their employers and capable of excellent career development from a strong commencing base. Along with knowledge and skills development, the program deliberately takes on an entrepreneurial 'flavour' throughout its entirety. Graduates will have the basic capacity, attributes and 'mindset' to consider creating their own enterprises from the time of graduation, or at some future point in their career. They will therefore be well prepared to either seek professional employment as an employee in their chosen field of specialisation or grasp innovative business opportunities to employ themselves or others.

Swinburne's Bachelor of Business/Bachelor of Arts (Japanese) is a unique course offering students (with no previous knowledge of the language) study of Japanese language and its associated areas including culture, social, political and economic aspects, and an array of business specialisations. Completing students are eligible to receive two degrees, a Bachelor of Business and a Bachelor of Arts (Japanese). In addition to academic and practical skills, the course also opens up a myriad of international study and work opportunities upon which to build networks within Japan.
Aims & Objectives
Refer to the Bachelor of Business (A055) entry in this handbook.

Campus
Hawthorn

Career Opportunities
Graduates of this double degree enjoy opportunities wherever Japanese is spoken, with particular advantages in organisations where there are either joint country business ventures or offices located in Japan. In order to teach Japanese, graduates must have completed the Stage 3 units in the Advanced Japanese stream.

The Business majors provide graduates with skills in a wide range of professional occupations. For career opportunities based on business majors, refer to Business specialisations below.

Professional Recognition
For full details on professional recognition pertaining to this course refer to the A055 Bachelor of Business course entry.

Course Duration
Four years full-time or eight years part-time. An optional and additional year of Industry-Based Learning (IBL) is also available.

Note: Language units of study are not normally available in the evening.

Students holding an international student visa are required to study full-time. The optional year of Industry-Based Learning (IBL) is not available to international students.

Course Structure
The course comprises thirty-two units of study and is designed to enable students to complete the compulsory requirements for any business major together with the full range of Japanese units of study in order to complete the requirements of the two degrees.

Students must complete the core units of study of the Business degree (seven units) and a major (six units) chosen from one of the approved Business specialisations (refer to Business specialisations below) - a minimum of thirteen business specific units of study, plus ten mandatory Japanese language units of study and three supporting cultural units of study and six additional units of study (major, or minor and/electives) which may be selected from units of study offered in the Bachelor of Arts or Bachelor of Business specialisations or other disciplines outside the Faculty of Business and Enterprise by approval.

For full details of Business and Arts specialisations pertaining to this course refer to the Bachelor of Business and Bachelor of Arts specialisation lists below. Mandatory unit of study HBG3004 Careers in the Curriculum (zero credit points) must also be completed.

A major consists of six post-core units of study at least two of which must be at Stage 3 level. A minor consists of four post-core units of study at least one of which must be at Stage 3 level. An elective is a unit studied that is not part of the business core, a major or minor.

Note: the requirements of this course should be read in conjunction with the A055 Bachelor of Business course description.

Students wishing to enrol in units of study which are not a formal part of this course will be required to seek approval from the Faculty Administration Manager prior to enrolment.

Stage 3 Units of Study - Honours Stream Option
Each semester a limited number of Stage 3 units of study are offered by the Faculty of Business and Enterprise to students as an Honours stream option. These units of study provide students with the challenge and an opportunity to develop a deeper understanding of the subject matter, and to develop research skills by completing research based assessment tasks. To enrol, students are required to have achieved a credit grade average in the discipline units studied to date, an overall credit average and gain approval from the unit of study convener.

Students enrolled in Honours stream units of study will have codes appended with an H and the words (Honours stream) to reflect the higher academic content and requirements. The Honours Stream option is highly recommended for students considering enrolment in the Bachelor of Business (Honours) course upon completion of the degree.

Course restrictions
Students should note the following restrictions on units of study that can be credited towards the Bachelor of Business/Bachelor of Arts (Japanese):

- A minimum of eight units of study must be completed at Swinburne University. This must include completion of half the units of study for all majors and minors. At least one Stage 3 unit of study for any major or minor must also be completed at Swinburne University with the exception of Italian and Japanese language majors or minors. This regulation must be observed in course plans that include unit of study exemptions, studies completed through international exchange, cross-institutional study or study abroad.
- A maximum of twelve units of study from any discipline (e.g. Marketing - 'HBM' unit code prefix).
- A maximum of twelve Stage 1 units of study (e.g. HBM110 - Stage 1 units have a 1 immediately following the three-letter code).
- A minimum of three Stage 3 units of study must be completed in addition to the mandatory Stage 3 language and cultural units of study (e.g. HBM330 - Stage 3 units have a 3 immediately following the three-letter code).
- Unmatched exemptions can only be used as electives and do not fulfil Stage 3 unit of study course requirements.
- The unit of study HAT119 Academic Communication Skills cannot be used for credits towards the double degree.
- A unit of study can only be counted once as part of a major or minor or as an elective - one unit of study cannot be counted twice (e.g. the unit HBM222 may be counted towards either a Management or Marketing major, but not both).
- Students are not permitted to enrol in units of study where they have completed another unit of study that is deemed to be equivalent.
- HBI300 Industry Placement cannot be used for credit towards the double degree.
- Students will be allowed to study a maximum of thirty-four units of study as part of the double degree.

Majors/Minors & Specialisations
The following business specific majors/minors are available:
- Accounting
- Asian Business#
- Business Law
- Economics#
- eBusiness#
- European Business#
- Finance
- Human Resource Management / Organisation Behaviour
- Information Systems
- International Business
- Manufacturing Management
- Marketing

# Available as minor only
See page 32 for Business major/minor details.

The following Arts specific majors/minors are available:
- Australian Studies
- Cultural Studies
- Electronic Society
- Japanese
- Literature
- Media Studies
- Philosophy and Cultural Inquiry

See page 147 for Arts major/minor details.

The following Social Science specific majors/minors are available:
- Politics
- Psychology
- Sociology

See page 178 for Social Science major/minor details.

Units of Study
Business - Core Units of Study
The seven business core units of study are:

HBC110 Accounting for Success
Advanced stream

Stage 1

HAJ131 Advanced Japanese 1A
HAJ132 Advanced Written Japanese 1B
HAJ133 Advanced Spoken Japanese 1B

Stage 2

HAJ231 Advanced Written Japanese 2A
HAJ232 Advanced Spoken Japanese 2A
HAJ233 Advanced Written Japanese 2B
HAJ234 Advanced Spoken Japanese 2B

Stage 3

HAJ331 Advanced Written Business Japanese
HAJ332 Advanced Spoken Business Japanese
HAJ333 Advanced Business Readings and Communication

Cultural Subjects

HAJ102 Introduction to Japan: A Cultural Overview
HAJ202 Communication in Japanese
HBI341 Asia - Business Context

Recommended Electives

HAT116 Linguistics
HBI344 Work Experience in Japan (subject to availability of placements)
HBI391 Pacific Rim Business Study Tour

Entry Requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification. 2008 VCE Prerequisites: Units 3 and 4 - a study score of at least 20 in English (any).Bonus points will be given for VCE LOTE. For further information, see the VTAC website: www.vtac.edu.au

Advanced Diploma holders: a minimum requirement of Credit Grade average 65% with no fails in the final year. In the first instance preference will be given to Advanced Diploma holders who have a Distinction Grade average (at least 75% or above) with no fail grades in the final year. Followed by Advanced Diploma holders who have a Grade average midway between Credit and Distinction (at least 70% or above) with no fail grades in the final year. Followed by applicants who have completed the equivalent of at least three full-time semesters towards the Advanced Diploma who have a Distinction Grade average (at least 75% or above) with no fail grades. Followed by Advanced Diploma holders who have a Credit Grade average (at least 65% or above) with no fail grades in the final year.

Note: This three year intensive language sequence assumes no prior knowledge of the language. Advanced language sequence is available for students who have passed VCE level Japanese. Native speakers of Japanese are not eligible for admission to this course.

Refer to the Bachelor of Arts [A055] for other entry options.

2007 Round 1 Clearly-IN ENTRY: 76.35 (CSP), n/a (Fee)

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 34801 (CSP), 34802 (Fee), 34803 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Note: First year languages units of study will not be available to students commencing in Semester 2. This could mean that the course duration will be longer than the advertised duration.

Bachelor of Business (International Business) / Bachelor of Arts (Italian) [A0581]

The Bachelor of Business (International Business) / Bachelor of Arts (Italian) is a vocationally oriented course that is designed to assist in the intellectual, social and personal development of the student as preparation for entrance into a range of specialist and generalist business professions. The program prepares students for a career in business, whether domestic or international, recognising that the business world is a global one as we step into the 21st Century. It also produces educationally rounded people, capable of taking their places in their chosen professions and in the community in which they live.

The ability to communicate, both verbally and in documents, in the language of the customer is seen as a significant advantage for Australian business people trying to break into competitive international markets. Swinburne takes particular pride in producing business graduates who are employment-ready, of immediate practical relevance to their employers and capable of excellent career development from a strong commencing base. Along with knowledge and skills development, the program deliberately takes on an entrepreneurial ‘flavour’ throughout its entirety. Graduates will have the basic capacity, attributes and ‘mindset’ to consider creating their own enterprises from the time of graduation, or at some future point in their career. They will therefore be well prepared to either seek professional entry as an employee in their chosen field of specialisation or grasp innovative business opportunities to employ themselves or others.

Swinburne’s Bachelor of Business (International Business) / Bachelor of Arts (Italian) is a unique course offering students (with or without previous knowledge of Italian) the opportunity to study the language and its associated areas including culture, society, politics and economics, together with an array of business specialisations. Completing students are eligible to receive two degrees, a Bachelor of Business (International Business) and a Bachelor of Arts (Italian). In addition to the academic and practical skills which this course provides, it also opens up a myriad of international study and work opportunities upon which to build networks within Italy.

Aims & Objectives

Refer to the Bachelor of Business [A055] entry in this handbook.

Campus

Hawthorn

Career Opportunities

Graduates of this double degree enjoy career opportunities generally in Europe, with particular advantages in organisations where there are either joint country business ventures or offices located in Europe and Italy. In order to teach Italian, graduates must have completed the Stage 3 units of study in the Advanced Italian stream.
Professional Recognition
For full details on professional recognition pertaining to this course refer to the A055 Bachelor of Business course entry.

Course Duration
Four years full-time or eight years part-time. An optional and additional year of Industry-Based Learning (IBL) is also available.

Note: Language units of study are not normally available in the evening.

Students holding an international student visa are required to study full-time. The optional year of Industry-Based Learning (IBL) is not available to international students.

Course Structure
To complete the requirements of this course students must complete thirty-two units of study comprising thirteen Italian language and supporting cultural units of study, seven business core units of study, an International Business major (six units of study) and an additional six units of study (which may comprise either another major, a minor and two electives or six electives). The six additional units of study may be selected from units offered in the Bachelor of Arts or Bachelor of Business specialisations or other disciplines outside the Faculty of Business and Enterprise by approval. For full details of Business and Arts specialisations pertaining to this course refer to the Bachelor of Business and Bachelor of Arts specialisations listed below. A mandatory unit HBSG0004 Careers in the Curriculum (zero credit points) must also be completed.

A major consists of six post-core units of study at least two of which must be at Stage 3 level. A minor consists of four post-core units of study at least one of which must be at Stage 3 level. An elective is a unit of study that is not part of the business core, a major or minor.

Note: the requirements of this course should be read in conjunction with the Bachelor of Business and the Bachelor of Business / Bachelor of Arts (Italian) course description.

Students wishing to enrol in units of study which are not a formal part of this course will be required to seek approval from the Faculty Administration Manager prior to enrolment.

Semester Abroad
Domestic students in the Bachelor of Business (International Business)/Bachelor of Arts (Italian) must undertake an approved component of the course overseas. This could be a student exchange, a study tour or work experience. Domestic students who have completed studies overseas may apply for preclusion from the overseas component.

International students are precluded from the mandatory overseas component provision that all other course conditions are met.

Course restrictions
Students should note the following restrictions on units of study that can be credited towards the Bachelor of Business (International Business)/Bachelor of Arts (Italian):

- A minimum of eight units of study must be completed at Swinburne University. This must include completion of half the units of study for all majors and minors. At least one Stage 3 unit of study for any major or minor must also be completed at Swinburne University with the exception of Italian and Japanese language majors or minors. This regulation must be observed in course plans that include unit of study exemptions, studies completed through international exchange, cross-institutional study or study abroad.
- A maximum of twelve units of study from any discipline (e.g. Marketing - 'HBM' unit code prefix).
- A maximum of twelve Stage 1 units of study (e.g. HBM110 - Stage 1 units have a 1 immediately following the three-letter code).
- A minimum of three Stage 3 units of study must be completed in addition to the mandatory Stage 3 language and cultural units of study (e.g. HBM350 - Stage 3 units have a 3 immediately following the three-letter code).
- Unmatched exemptions can only be used as electives and do not fulfill Stage 3 unit of study course requirements.
- The unit of study HAT119 Academic Communication Skills cannot be used for credit towards the double degree.
- A unit of study can only be counted once as part of a major or minor or as an elective - one unit of study cannot be counted twice (e.g. the unit HBS342 International Investment and Development may be counted towards either the International Business major or the Asian Business minor, but not both).
- Students are not permitted to enrol in units of study where they have completed another unit of study that is deemed to be equivalent.
- HBS300 Industry Placement cannot be used for credit towards the double degree.
- Students will be allowed to study a maximum of thirty-four units of study as part of the double degree.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HBG0004 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Stage 3 Unit of Study - Honours Stream Option
Each semester a limited number of Stage 3 units of study are offered by the Faculty of Business and Enterprise to students as an Honours stream option. These units of study provide students with the challenges and an opportunity to develop a deeper understanding of the subject matter, and to develop research skills by completing research based assessment tasks. To enrol, students are required to have achieved a credit grade average in the discipline units studied to date, an overall credit average and gain approval from the subject convenor. Students enrolled in Honours stream units of study will have codes appended with an H and the words (Honours stream) to reflect the higher academic content and requirements. The Honours Stream option is highly recommended for students considering enrolment in the Bachelor of Business (Honours) course upon completion of the degree.

Special course of study for students who have completed an Advanced Diploma in Business
Students enrolled in the Bachelor of Business (International Business)/Bachelor of Arts (Italian) who have completed an approved Advanced Diploma in Business or Diploma in Business or equivalent must complete all the normal requirements for the course except they are only required to complete four of the seven business core units of study (which may include matched unit of study credits). However, all core units of study required as prerequisites for later Stage units selected for study must be completed.

Prerequisites/Corequisites
Students must have passed all prerequisite units of study listed for each unit. They must have already passed or be concurrently enrolled in any corequisite units. Unit of study convenors must be consulted if students wish to enrol in a unit of study for which they do not have the stated prerequisite.

Industry-Based Learning (IBL)
The Bachelor of Business (International Business)/Bachelor of Arts (Italian) includes an optional Industry-Based Learning (IBL) placement, in which students are placed in paid, supervised employment as part of their degree course. Students require a credit grade average for acceptance into the IBL program. Whilst enrolment in the Industrial Placement completed as part of IBL is not for credit, it gives eligible students invaluable practical experience to add to their academic studies, and is a proven advantage in the graduate job market. All IBL placements are subject to availability and require suitable English language skills.

Note: The optional year of Industry-Based Learning in Australia is currently not available to international students.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Majors/Minors & Specialisations
The following business specific majors/minors are available:

- Accounting
- Asian Business#
- Business Law
- Economics#
- eBusiness#
- European Business#
- Finance

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• Human Resource Management / Organisation Behaviour
• Information Systems
• International Business
• Management
• Manufacturing Management
• Marketing

# Available as minor only

See page 32 for Business major/minor details.

The following Arts specific majors/minors are available:
• Australian Studies
• Cultural Studies
• Electronic Society
• Japanese
• Literature
• Media Studies
• Philosophy and Cultural Inquiry

See page 147 for Arts major/minor details.

The following Social Science specific majors/minors are available:
• Politics
• Psychology
• Sociology

See page 178 for Social Science major/minor details.

Units of Study

Business Core Units of Study
The seven business core units of study are:

HBC110 Accounting for Success
HBE110 Microeconomics
HBI110 Organisation and Management
HBL111 Law in Global Business
HBM110 The Marketing Concept
HIT1401 Introduction to Business Information Systems
HMB110 Quantitative Analysis A, OR
HMB111 Quantitative Analysis B

International Business Major

HBI231 Foundations of International Business
HBI340 International Trade Strategies
HBL331 International Business Law

At least one of:

HBI341 Asia - Business Context
HBI392 European Union - Business Context
HBI394 The Americas: Business Context

And remaining units of study from:

HBE335 International Finance
HBI342 International Investment and Taxation
HBM223 Transnational Marketing
HBM329 Transnational Business Practices

Arts - Language Units of Study

Beginners’ stream

Stage 1
HAA181 Italian and Its Language 1
HAA182 Italian and Its Language 2

Stage 2
HAA281 Italian 2X
HAA282 Introductory Business Italian 2Y
HAA283 Italian 2Z

Stage 3
HAA381 Italian 3X
HAA387 Advanced Business Italian
HAA388 Contemporary Italy

Advanced stream

Stage 1
HAA184 Advanced Italian 1A
HAA185 Advanced Italian 1B

Stage 2
HAA284 Advanced Italian 2A
HAA285 Introductory Business Italian 2B
HAA286 Advanced Italian 2C

Stage 3
HAA384 Individual Project
HAA387 Advanced Business Italian
HAA388 Contemporary Italy

Cultural Units of Study

HAA119 Post-War Italy
HAA289 Comparative European Politics
HBI243 International Business in the Italian Context
HBI288 European Union
HBI392 European Union - Business Context

Recommended Electives

HBI389 Work Experience in Europe
HBI390 European Union Study Tour
HAT116 Linguistics

Students who intend, on graduating, to teach Italian either at primary or secondary level or who do not wish to preclude this possibility, should note that the exit point required in the Italian Language stream is the third-year Advanced level. To achieve this, students are advised to transfer to the Advanced stream by enrolling in third year Advanced units of study after completing second year. A credit is the minimum requirement to be able to transfer to the Advanced stream.

Language and business units of study must normally be studied simultaneously throughout the duration of the course.

Entry Requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 and 4 - a study score of at least 20 in English (any). Bonus points will be given for VCE LOTE. For further information, see the VTAC website: www.vtac.edu.au

Note: The intensive language sequence assumes no prior knowledge of the language. An advanced language sequence is available for students who have passed VCE level Italian.

Referred to the Bachelor of Business [A055] for other entry options.

2007 Round 1 Clearly-In ENTER: 76.25 (CSP), n/a (Fee)

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 34651 (CSP), 34652 (Fee), 34653 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Note: First year languages units of study will not be available to students commencing in Semester 2. This could mean that the course duration will be longer than the advertised duration.

Bachelor of Business (International Business) / Bachelor of Arts (Japanese) [A0571]

The Bachelor of Business (International Business)/Bachelor of Arts (Japanese) is a vocationally oriented course that is designed to assist in the intellectual, social and personal development of the student as preparation for entrance into a range of specialist and generalist business professions. The program prepares students for a career in business, whether domestic or international, recognising that the business world is a global one as we step into the 21st Century. It also produces educationally rounded people, capable of taking their places in their chosen professions and in the community in which they live.

The ability to communicate, both verbally and in documents, in the language of the customer is seen as a significant advantage for Australian business people trying to break into competitive international markets. Swinburne takes particular pride in producing business graduates who are employment-ready, of immediate
practical relevance to their employers and capable of excellent career development from a strong commencing base. Along with knowledge and skills development, the program deliberately takes on an entrepreneurial 'flavour' throughout its entirety. Graduates will have the basic capacity, attributes and 'mindset' to consider creating their own enterprises from the time of graduation, or at some future point in their career. They will therefore be well prepared to either seek professional entry as an employee in their chosen field of specialisation or grasp innovative business opportunities to employ themselves or others.

Swinburne's Bachelor of Business (International Business)/Bachelor of Arts (Japanese) is a unique course offering students (with or without previous knowledge of Japanese) the opportunity to study the language and its associated areas including culture, society, politics and economics, together with an array of business specialisations. Completing students are eligible to receive two degrees, a Bachelor of Business (International Business) and a Bachelor of Arts (Japanese). In addition to the academic and practical skills which this course provides, it also opens up a myriad of international study and work opportunities upon which to build networks within Japan.

Aims & Objectives
Refer to the Bachelor of Business [A055] entry in this handbook.

Campus
Hawthorn

Career Opportunities
Graduates of this double degree enjoy opportunities wherever Japanese is spoken, with particular advantages in organisations where there are either joint country business ventures or offices located in Japan. In order to teach Japanese, graduates must have completed the Stage 3 units of study in the Advanced Japanese stream. Students with studies in International Business find rewarding work in an array of institutions and firms engaged in aspects of international business.

Professional Recognition
For full details on professional recognition pertaining to this course refer to the A055 Bachelor of Business course entry.

Course Duration
Four years full-time or eight years part-time. An optional and additional year of Industry-Based Learning (IBL) is also available.

Note: Language units of study are not normally available in the evening.

Note: Students holding an international student visa are required to study full-time. The optional year of Industry-Based Learning (IBL) is not available to international students.

Course Structure
To complete the requirements of this course students must complete thirty-two units of study comprising thirteen Japanese language and supporting cultural units, seven business core units, an International Business major (six units of study) and an additional six units of study (which may comprise either another major, a minor and two electives or six electives). The six additional units of study may be selected from units offered in the Bachelor of Arts or Bachelor of Business specialisations or other disciplines outside the Faculty of Business and Enterprise by approval. A mandatory unit HBB00044 Careers in the Curriculum (zero credit points) must also be completed. A major consists of six post-core units of study at least two of which must be at Stage 3 level. A minor consists of four post-core units of study at least one of which must be at Stage 3 level. An elective is a units of study that is not part of the business core, a major or minor.

Note: the requirements of this course should be read in conjunction with the Bachelor of Business and Bachelor of Business / Bachelor of Arts (Japanese) course descriptions.

Students wishing to enrol in units of study which are not a formal part of this course will be required to seek approval from the Faculty Administration Manager prior to enrolment.

Semester Abroad
Domestic students in the Bachelor of Business (International Business)/Bachelor of Arts (Italian) or (Japanese) must undertake an approved component of the course overseas. This could be a student exchange, a study tour or work experience. Domestic students who have completed studies overseas may apply for preclusion from the overseas component.

International students are precluded from the mandatory overseas component provision that all other course conditions are met.

Stage 3 Units of Study - Honours Stream Option
Each semester a limited number of Stage 3 units of study are offered by the Faculty of Business and Enterprise to students as an Honours stream option. These units of study provide students with the challenge and an opportunity to develop a deeper understanding of the subject matter, and to develop research skills by completing research based assessment tasks. To enrol, students are required to have achieved a credit grade average in the discipline units studied to date, an overall credit average and gain approval from the unit of study convenor.

Students enrolled in Honours stream units of study will have codes appended with an H and the (Honours stream) to reflect the higher academic content and requirements. The Honours Stream option is highly recommended for students considering enrolment in the Bachelor of Business (Honours) course upon completion of the degree.

Course restrictions
Students should note the following restrictions on units of study that can be credited towards the Bachelor of Business (International Business)/Bachelor of Arts (Japanese):

- A minimum of eight units of study must be completed at Swinburne University. This must include completion of half the units of study for all majors and minors.
- At least one Stage 3 unit of study for any major or minor must also be completed at Swinburne University with the exception of Japanese and Japanese language majors or minors. This regulation must be observed in course plans that include unit exemptions, studies completed through international exchange, cross-institutional study or study abroad.

- A maximum of twelve units of study from any discipline (e.g. Marketing - IBM unit code prefix).

- A maximum of twelve Stage 1 units of study (e.g. HBM110 - Stage 1 units have a 1 immediately following the three-letter code).

- A minimum of three Stage 3 units of study must be completed in addition to the mandatory Stage 3 language and cultural units (e.g. HBM330 - Stage 3 units have a 3 immediately following the three-letter code).

- Unmatched exemptions can only be used as electives and do not fulfill Stage 3 units of study course requirements.

- The unit HAT119 Academic Communication Skills cannot be used for credit towards the double degree.

- A unit of study can only be counted once as part of a major or minor or as an elective - one unit cannot be counted twice (e.g. the unit HBI342 International Investment and Development may be counted towards either the International Business major or the Asian Business minor, but not both).

- Students are not permitted to enrol in units of study where they have completed another unit that is deemed to be equivalent.

- HBI300 Industry Placement cannot be used for credit towards the double degree.

- Students will be allowed to study a maximum of thirty-four units of study as part of the double degree.

Majors/Minors & Specialisations
The following business specific majors/minors are available:

- Accounting
- Asian Business
- Business Law
- Economics
- eBusiness
- European Business
- Finance
- Human Resource Management / Organisation Behaviour
- Information Systems
- International Business
- Management
- Manufacturing Management
- Marketing

# Available as minor only

See page 32 for Business major/minor details.

The following Arts specific majors/minors are available:
The seven business core units of study are:

- Accounting for Business
- Microeconomics
- Organisation and Management
- Law in Global Business
- The Marketing Concept
- Introduction to Business Information Systems
- Quantitative Analysis A, OR
- Quantitative Analysis B

International Business Major

- Foundations of International Business
- International Trade Strategies
- International Business Law

At least one of:

- Asia - Business Context
- European Union - Business Context
- The Americas: Business Context

And remaining units of study from:

- International Finance
- International Investment and Taxation
- Transnational Marketing
- Transnational Business Practices

Arts - Language Units of Study

Beginners' stream

**Stage 1**

- Introductory Japanese 1A
- Written Japanese 1B
- Spoken Japanese 1B

**Stage 2**

- Intermediate Japanese 2A
- Written Japanese 2B
- Spoken Japanese 2B

**Stage 3**

- Written Japanese 3A
- Spoken Japanese 3A
- Written Japanese 3B
- Spoken Japanese 3B

Advanced stream

**Stage 1**

- Advanced Japanese 1A
- Advanced Written Japanese 1B
- Advanced Spoken Japanese 1B

**Stage 2**

- Advanced Written Japanese 2A
- Advanced Written Japanese 2B
- Advanced Spoken Japanese 2B
- Advanced Written Business Japanese
- Advanced Spoken Business Japanese
- Advanced Business Readings and Communication

Cultural Subjects

- Introduction to Japan: A Cultural Overview
- Communication in Japanese
- Asia - Business Context

Recommended electives

- Linguistics
- Work Experience in Japan (subject to availability of placements)
- Pacific Film Business Study Tour

Students who intend, on graduating, to teach Japanese either at primary or secondary level or who do not wish to preclude this possibility, should note that the exit point required is the third-year Advanced level. To achieve this, students in the Beginners stream are advised to transfer to the Advanced stream by enrolling in third year Advanced units of study after completing second year. A credit is the minimum requirement to be able to transfer to the Advanced stream. Language and business units of study must normally be studied simultaneously throughout the duration of the course.

Entry Requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 and 4 - a study score of at least 20 in English (any). Bonus points will be given for VCE LOTE. For further information, see the VTAC website: www.vtac.edu.au

NOTE: The intensive language sequence assumes no prior knowledge of the language. An advanced language sequence is available for students who have passed VCE level Japanese. Native speakers of Japanese are not eligible for admission to this course.

Refer to the Bachelor of Business [A055] for other entry options.

2007 Round 1 Clearer-in ENTER: 76.35 (CSP), n/a (Fee)

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC course code: 34801 (CSP), 34802 (Fee), 34803 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Note: First year languages units of study will not be available to students commencing in Semester 2. This could mean that the course duration will be longer than the advertised duration.

Honours Year

Bachelor of Business (Honours) [A063]

The Bachelor of Business (Honours) course provides students, with demonstrated academic ability, the opportunity to pursue their undergraduate studies to an advanced level, to deepen their intellectual understanding in their major area of study and to develop their research skills.

The Honours course is a recognised point of entry into postgraduate research studies. Students concentrate on their chosen area of study, gaining a better understanding of the academic discipline which they study and the research techniques appropriate to the discipline. The requirement to complete a substantial original piece of research for their dissertation ensures that honours graduates develop abilities to conceptualise problems, devise research strategies and carry out individual research work under the supervision of a member of staff with expertise in the area.

Undertaking the Honours course can also assist by providing a point of differentiation when seeking employment, as the course offers students the opportunity to extend their knowledge in their chosen discipline and to specialise in an area within it. The course's strong orientation to research instructs students in the principles and techniques of original research and prepares them for areas...
Aims & Objectives
The Bachelor of Business (Honours) course:
• Provides students with an opportunity to enhance their research ability and permits further studies and specialisation in their discipline.
• Offers students the opportunity to add considerable depth to their understanding of concepts within their chosen discipline and encourages students to pursue excellence in their studies at a higher level.
• Is unique in that it offers students a Business Honours degree with a language component option.

Campus
Hawthorn

Career Opportunities
Students with a Bachelor of Business (Honours) degree have the opportunity to develop academic and generic skills that will serve them well whether their future path leads to a career in research or industry.

Course Duration
One year full-time or over two consecutive years part-time.

Course Structure
The Honours course consists of a 20% research methodology component, a 20% advanced reading unit component and a 60% dissertation component. Students must satisfactorily complete all three components to achieve an overall honours assessment.

Students will be required to complete a dissertation in one of the major areas of study listed below:
• Accounting
• Finance
• Human Resource Management / Organisation Behaviour
• Information Systems
• International Business
• Management
• Manufacturing Management
• Marketing
• Any of the above areas of study combined with a language component from either Italian or Japanese

Research Methodology component
The research methodology unit of study (HBQ415) aims to equip students with the necessary research skills to conduct studies for higher degrees. It is designed to facilitate the development of independent learning skills. Students will be presented with various research methodologies appropriate to their chosen discipline as well as those used in other disciplines. Assessment will be based on assignments and class exercises. Teaching methods will include formal lectures and tutorial discussion groups and will make extensive use of library resources. This unit of study is compulsory for all Bachelor of Business (Honours) students and no prerequisite is necessary.

Advanced Reading component
The discipline specific unit of study (HBx411) aims to allow a breadth and depth of exploration of the area of study chosen by the student. This is an exploratory approach which is intended to help the student arrive at a viable topic for their dissertation. Students will be expected to read widely from a variety of sources including both textual and journal articles, and meet regularly with their supervisor.

Dissertation component
Normally a student will produce, under supervision, a dissertation (HBx410) between 15,000 and 20,000 words. The structure of the dissertation will be consistent with the proposal development in the Advanced Reading unit of study, and with the quality expectations that are carried with a work of this kind. As part of the Bachelor of Business (Honours) course, students may be required to make class presentations at progressive stages in their course and to attend and participate fully in a series of seminars conducted by staff.

Students who successfully complete the above components will be graded as follows:
• First Class Honours (H1) 80%-100%
• Upper Second Class Honours (H2A) 70%-79%
• Lower Second Class Honours (H2B) 60%-69%
• Third Class Honours (H3) 50%-59%

Units of Study

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBQ415</td>
<td>Research Methodology (20 credit points)</td>
</tr>
<tr>
<td>HBx410</td>
<td>Honours Dissertation (60 credit points)</td>
</tr>
<tr>
<td>HBx411</td>
<td>Advanced Reading Unit (20 credit points)</td>
</tr>
</tbody>
</table>

*’x’ represents the specific code for each area of study as listed below.

Entry Requirements
To be eligible for admission into the Bachelor of Business (Honours) course, a student must have achieved an average level of attainment of a credit (C) or better in an appropriate undergraduate course, and in their major discipline.

Application Procedure
An Application Form (Honours) is available by contacting the Faculty of Business and Enterprise or online at www.swin.edu.au/corporate/registere/student/UG_Honoursapp_2005WEB.pdf
Faculty of Design

Design impacts on all aspects of our culture. In everything, from the minutiae of everyday life through to matters of a broader social and economic sweep, there are elements of design. With this in mind, design teaching and research activities have a strong industry focus that permeates every program – communication design, interior design, industrial design, multimedia design, product design engineering, and film & television.

Swinburne has longstanding links with industry and relevant professions, and our small size allows us to respond quickly to their needs. In recent years a multimedia design program was established, in 2004 we launched a new Film and Television School with a digital postproduction focus, and our unique product design engineering program was set up with the Faculty of Engineering and Industrial Sciences in response to the need for designers who can take the initial concept of a product through to the manufacturing stage.

Our teaching approach and style is based on the Atelier method, which involves experiential learning and is centered on a studio-based project driven environment. This is enhanced by the Industry-Based Learning (IBL) program where students spend a period of six to twelve months working in a commercial design environment. Swinburne’s Design Centre also gives honours students the opportunity to work on live projects for industry in a commercial setting. As well as ensuring graduates leave with the right skills, attitudes and experience to become effective immediately, the Design Centre has become a lighthouse activity, attracting much interest from international delegations keen on developing their own version, and from industry wanting to commission projects.

Our focus is also international. Design is a truly international activity and our graduates are prepared for work in the international marketplace through international exchange, study tours, and offshore work-experience placements and working side by side with international collaborative projects as well as exchange, study abroad and full-time students from many countries.

Further Information

Telephone: +61 3 9214 6755
Fax: +61 3 9810 2665
Email: nidenquiry@swin.edu.au
Website: www.swinburne.edu.au/design

Associate Degree of Film and Television (ADFTV05)

The Associate Degree of Film and Television is only available to international students. It offers students the opportunity to acquire specialised skills and knowledge in preparation for employment in a dynamic workforce. Industry practices and protocols comprise a fundamental component of the coursework. Students will explore the relationship between content and technology within the context of both traditional film and digital video making processes and future technology developments.

Aims & Objectives
The aim of the program is to:
- Provide students with a solid foundation in all aspects of film, television and media production
- Foster innovation, experimentation and creative thinking to address the increasing demand for content provision within the film and television industries and future technological developments
- Provide industry with graduates who demonstrate high levels of technical and creative expertise.

Campus
Prahran

Career Opportunities
- Broadcast film and video post-production, computer/video game development, movie network telecommunications and scripting.
- Media/communications.
- International.
- Australian Cinematographers Society.

Course Duration
Two years full-time.

Course Structure
The Associate Degree operates under a student workload model base of 100 credit points for a full-time academic year. One credit point is deemed equivalent to one hour of student work per week for one semester whether in contact with staff or in private study. Usually, four units of study are taken per semester, each unit having a value of 12.5 credit points. Total student contact hours, including lectures, classes, tutorials, laboratory and field sessions, will be approximately 21 hours/week during academic semesters.

This Associate Degree is designed to align directly with the Bachelor of Film and Television. Generally speaking, the Associate Degree is equivalent to the first two years of the bachelor degree, with the addition of the units VFTV105AD Film and Television Guided Projects 1 and VFTV106AD Film and Television Guided Projects 2. These units have been included to provide students with a support structure for their studies in film and television while they are in the process of adapting to a new learning environment.

Units of Study
All units are 12.5 credit points unless otherwise indicated.

Year 1
Semester 1
- VFTV111AD Film and Television Technology Production 1
- VFTV112AD Film and Television Language and Communication 1
- VFTV113AD Film and Television Technology Post Production 1
- HALM104 Media Literature Film: Texts and Contexts
- VFTV105AD Film and Television Guided Projects 1 (0 credit points)

Semester 2
- VFTV121AD Film and Television Technology Production 2
- VFTV122AD Film and Television Language and Communication 2
- VFTV123AD Film and Television Technology Post Production 2
- VFTV106AD Film and Television Guided Projects 2 (0 credit points)

Year 2
Semester 3
- HFTV231AD Film and Television Technology 3 (25 credit points)
- HFTV232AD Film and Television Project Series 1
- One of:
  - HFTV233AD Screen Techniques 1
  - HOMD143AD Typographic Design for Screen
  - HALM312 Cinema Studies

Semester 4
- HFTV241AD Film and Television Technology 4
- HFTV242AD Film and Television Project Series 2 (25 credit points)
- One of:
  - HFTV243AD Screen Techniques 2
  - HFTV244AD Title Design
  - HAMR11 New Media: The Telecommunications Revolution
  - HBSG202 New Venture Development and Management

Entry Requirements
The Associate Degree of Film and Television is only available to international students.

Application Procedure
The Associate Degree of Film and Television is only available to international students. International students can apply for this course by following the step-by-step process on the Swinburne International website.

NOTE: This course will be offered in 2008 subject to sufficient student enrolments.
Bachelor of Design (Communication Design) [BDes]

The Communication Design program aims to produce imaginative designers, who work effectively in areas where information is primarily conveyed by visual means - such as advertising, publishing, public relations, packaging, multimedia, education and research. The program educates students to be effective designers and communicators through a wide variety of visual communication based projects, together with contextual and professional studies. Through the program's strong links with industry, graduates are well placed to seek employment in advanced areas of communication design.

Note: Stage 3 of this program, not including Industry Placement, will also be delivered at the Billy Blue School in North Sydney, and at City University, Hong Kong. Fees for students studying at campuses other than Swinburne Prahran will be different. Please contact the relevant institution for details.

Subject to sufficient expression of interest, this course may also be offered at the Singapore Institute of Material Management in 2008.

Aims & Objectives
The structure of, and the units of study within, the Bachelor of Design (Communication Design) degree conforms to the AQF Guidelines for a bachelor degree by allowing students to:
- Acquire a systematic and coherent body of knowledge, the underlying principles and concepts and the associated communication and problem solving skills
- Develop academic skills and attributes necessary to undertake design research, comprehend and evaluate new information, concepts and evidence from a range of sources
- Develop the ability to review, consolidate, extend and apply the knowledge and techniques learnt, including in a professional context
- Gain a foundation for self-directed and lifelong learning
- Gain interpersonal and teamwork skills appropriate to employment and/or further study.

Campus
Prahran

Career Opportunities
Design consultancy, advertising, publishing, merchandising, government instrumentalities.

Professional Recognition
Graduates of the program are eligible for membership of the Australian Graphic Design Association (AGDA) and Associate Membership of the Design Institute of Australia (DIA).

Course Duration
Three years full-time or equivalent part-time. Students holding an international student visa are required to study full-time.

Course Structure
The available units of study for completion of the Bachelor of Design (Communication Design) are classified into four study groups:
- Core units of study
- Specialist Communication Design units of study
- Communication Design Elective units of study
- Electives Plus sequences (or Faculty elective sequence)

Students will normally be enrolled in a Recommended Study Sequence and must successfully complete a minimum of 300 credit points, 50 per semester for full-time students. To qualify for the award, a student must complete, or have been granted an exemption for the units of study listed below. Students initially enter into the three year bachelor program. At the end of that program students may exit with an undergraduate bachelor degree. Work expected outside normal timetabled contact hours, in keeping with the nature of the discipline.

Careers in the Curriculum (CIC) (Prahran students only)
In addition to the above, students must complete a compulsory unit of study HED0009 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum is an innovative unit designed to assist Swinburne Prahran students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Honours
The first two years are common, followed by either a year three (pass degree) or selection into the four year Honours program with Industry Placement (third year). The Honours program requires a further 100 credit points of study consisting of all coursework or two Professional Practice and two other units of study in the Design Centre.

Students may continue into the Bachelor of Design (Communication Design) (Honours) program through the following avenues:
- If a student has maintained a grade average of credit or above (without participating in the Industry Placement (IP) program), they may be invited to apply to study in the Honours year
- Students who are involved in the IP program will be required to participate in the Honours year of study.

Electives Plus Sequences (Prahran students only)
Electives Plus sequences provide Swinburne Prahran degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
- Design: Process and Strategy
- Effective Communication
- Entreprenising Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne Prahran degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Elective Plus Sequence details.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternative study sequences to be undertaken.

Winter/Summer Term
The Faculty of Design offers an optional six-week Winter and/or Summer Term allowing you to complete extra study between the standard semesters. These terms are not mandatory. However, if you wish to vary your study load you may want to consider this option.

Units of Study
All units of study have a value of 12.5 credit points unless otherwise indicated (50 credit points per semester).

Swinburne Prahran - February Intake
Stage 1
Semester 1
HDCOM111 Introduction to Communication Design
HDCOM112 Typography
Allocated two of the following:
HDCOM121 20th Century Design
HDCOM202 Methods of Investigation
HDCOM203 Design Studio
HDCOM204 Digital Design
Semester 2
HDCOM211 Form and Structure for Communication Design
HDCOM212 Photography in Communication Design
Allocated remaining two of the following:
HDCOM101 20th Century Design
HDCOM202 Methods of Investigation

Swinburne University of Technology | Undergraduate Course Handbook 2008
This is a zero credit point unit of study which is compulsory for students in the second or third year of their course.

Stage 1
HDCOM211 Typographic for Publication
HDCOM212 Package Design
Allocated one of the following:
HDC005 Contemporary Design Issues
HDC006 Managing Design
Elective Studies:
HDMMD121 Interactive Design for Web Technology
HDMMD111 2D Animation
HDP050
HDD0009
OR any unit from an Electives Plus Sequence (see above)

Stage 2
HDCOM221 Branding and Identity
HDCOM222 Visual Language
Allocated remaining one of the following:
HDC005 Contemporary Design Issues
HDC006 Managing Design
Elective Studies:
HDMMD111 2D Animation
HDCOM212 Package Design
HDD0009
Elective from an Electives Plus Sequence (see above)

Stage 3
HDD0009 Careers in the Curriculum
HDCOM211 Communication Design Strategy
HDCOM212 Design for Production
Allocated remaining two of the following:
HDC007 Communicating Practice
HDC008 Design Systems and Services
HDC009 Design and Business Strategy

Stage 2
HDMMD121 Interactive Design for Web Technology
HDD0009
Elective from an Electives Plus Sequence (see above)

Stage 3
HDD0009 Careers in the Curriculum
HDCOM211 Typographic for Publication
HDCOM212 Package Design
Allocated remaining one of the following:
HDC005 Contemporary Design Issues
HDC006 Managing Design
Elective Studies:
HDMMD121 Interactive Design for Web Technology
HDD0009
Elective from an Electives Plus Sequence (see above)

Stage 3
HDD0009 Careers in the Curriculum
HDCOM211 Typographic for Publication
HDCOM212 Package Design
Allocated remaining one of the following:
HDC005 Contemporary Design Issues
HDC006 Managing Design
Elective Studies:
HDMMD121 Interactive Design for Web Technology
HDD0009
Elective from an Electives Plus Sequence (see above)

Stage 3
HDD0009 Careers in the Curriculum
HDCOM211 Typographic for Publication
HDCOM212 Package Design
Allocated remaining one of the following:
HDC005 Contemporary Design Issues
HDC006 Managing Design
Elective Studies:
HDMMD121 Interactive Design for Web Technology
HDD0009
Elective from an Electives Plus Sequence (see above)
Billy Blue College (Sydney)

NOTE: Fees for students studying at Billy Blue in Sydney are different to Swinburne Prahran. Please contact the school for details.

Stage 3 (Only)

Semesters 1 & 2
HDCCOM311S Communication Design Strategy
HDCCOM312S Design for Production
HDMMGD121S Interactive Design for Web Technology
HDCCOM308S Design Systems and Services

Semesters 1 & 2
HDCCOM321S Publication Design
HDCCOM323S Advertising Design
HDCCOM307S Communicating Practice
HDCCOM309S Design and Business Strategy

City University, Hong Kong

Stage 3 (Only)

Semesters 1 & 2
HDCCOM311HK Communication Design Strategy
HDCCOM312HK Design for Production
HDMMGD121HK Interactive Design for Web Technology
HDCCOM308HK Design Systems and Services

Semesters 1 & 2
HDCCOM321HK Publication Design
HDCCOM323HK Advertising Design
HDCCOM307HK Communicating Practice
HDCCOM309HK Design and Business Strategy

Singapore Institute of Materials Management

NOTE: classes will run in Singapore in 2008 subject to sufficient enrolments.

Stage 3 (Only)

Semesters 1 & 2
HDCCOM311SG Communication Design Strategy
HDCCOM312SG Design for Production
HDMMGD121SG Interactive Design for Web Technology
HDCCOM308SG Design Systems and Services

Semesters 1 & 2
HDCCOM321SG Publication Design
HDCCOM323SG Advertising Design
HDCCOM307SG Communicating Practice
HDCCOM309SG Design and Business Strategy

Note: Programs conducted in Sydney, Hong Kong and Singapore will have the initials S, HK or SG at the end of the unit of study code. Sydney, Hong Kong and Singapore will deliver Stage 3 of the program, not including Industry Placement.

Entry Requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any) and in one of Visual Communication and Design, Studio Arts or Art.

Successful completion of a relevant diploma or equivalent may provide entry into these programs with advanced standing.

2007 Round 1 Clear-cut: RC

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 36101 (CSP), 36102 (Fee), 36103 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Bachelor of Design (Industrial Design) (BID10)

The industrial design program produces design graduates with a focus on a broad range of products, furniture, medical equipment, sporting equipment and associated infrastructures. Students develop their creative and technological aptitude through a program supported by professional practice, business studies, consumer knowledge, and ethics and cultural studies.

Note: Stage 3 of this program, not including Industry Placement, is also delivered from the Limkokwing University of Creative Technology, Kuala Lumpur. Fees for students studying at campuses other than Swinburne Prahran will be different. Please contact the Limkokwing University for details.

Aims & Objectives

The Bachelor of Design (Industrial Design) degree conforms to the AQF Guidelines for a bachelor degree by allowing students to:

- Acquire a systematic and coherent body of knowledge, the underlying principles and concepts, and the associated communication and problem-solving skills.
- Develop academic skills and attributes necessary to undertake Design research, comprehend and evaluate new information, concepts and evidence from a range of sources.
- Develop the ability to review, consolidate, extend and apply the knowledge and techniques learnt, including in a professional context gain a foundation for self-directed and lifelong learning.
- Gain interpersonal and teamwork skills appropriate to employment and/or further study.

Campus

Prahran

Career Opportunities

Product design for and within manufacturing industries or design consultancies, exhibition, environmental and furniture design, stage and set design, self-employed designers or manufacturers.

Professional Recognition

Graduates of the program are eligible for Associate Membership of the Design Institute of Australia.

Course Duration

Three years full-time or the equivalent part-time. Students holding an international student visa are required to study full-time.

Course Structure

The available units of study for completion of the Bachelor of Design (Industrial Design) are classified into four study groups:

- Core units of study
- Specialist Industrial Design units of study
- Industrial Design Elective units of study
- Electives Plus sequences (or Faculty elective sequence)

Students will normally be enrolled in a Recommended Study Sequence and must successfully complete a minimum of 300 credit points, 50 credit points per semester for full-time students. To qualify for the award, a student must complete, or have been granted an exemption for the units of study listed below. Students initially enter into the three year bachelor program. At the end of that program students may exit with an undergraduate bachelor degree. Work expected outside normal timetabled contact hours, in keeping with related design courses, will usually be no less than a minimum of two hours independent study for each contact hour.

Careers in the Curriculum (CIC) (Prahran students only)

In addition to the above, students must complete a compulsory unit of study HDDD009 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or FEE debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Honours

The first two years are common, followed by either a third year (pass degree) or selection into the four year Honours program with Industry Placement (third year). The Honours program requires a further 100 credit points of units of study.
consisting of all coursework or two Professional Practice and two other units of study in the Design Centre.

Students may continue into the Bachelor of Design (Industrial Design) (Honours) program through the following avenues:
- If a student has maintained a grade average of credit or above (without participating in the Industry Placement (IP) program) they may be invited to apply to study in the Honours year.
- Students who are involved in the IP program will be required to participate in the Honours year of study.

**Electives Plus Sequences**

Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
- Design: Process and Strategy
- Effective Communication
- Entrepreneuring Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Elective Plus Sequence details.

**Final Year Experience - Major Projects**

As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternative study sequences to be undertaken.

**Winter/Summer Term**

The Faculty of Design offers an optional six-week Winter and/or Summer Term allowing you to complete extra study between the standard semesters. These terms are not mandatory. However, if you wish to vary your study load you may want to consider this option.

**Units of Study**

Units of study are 12.5 credit points unless otherwise indicated with students normally undertaking 50 credit points per semester.

**February Intake**

**Stage 1**

**Semester 1**

HDD003 Product Design Studio 1  
HDD004 Product Communication

Allocated two of the following:

HDC001 20th Century Design  
HDC002 Methods of Investigation  
HDC003 Design Studio  
HDC004 Digital Design

**Semester 2**

HDDND121 Industrial Design Studio - Ergonomic Interaction  
HDDND005 Communication Technology 1

Allocated remaining two of the following:

HDC001 20th Century Design  
HDC002 Methods of Investigation  
HDC003 Design Studio  
HDC004 Digital Design

**Stage 2**

HDD0009 Careers in the Curriculum (Prahran students only)

This is a zero credit point subject which is compulsory for students in the second or third year of their course.

**Semester 1**

HDDND211 Industrial Design Studio - Changing Patterns  
HDD3D006 Communication Technology 2

Allocated one of the following:

HDC005 Contemporary Design Issues  
HDC006 Managing Design

**Elective Studies:**

HDMM0D121 Interactive Design for Web Technology  
OR any unit from an Electives Plus Sequence (see above)

**Semester 2**

HDDND221 Industrial Design Studio - Sustainable Environment  
HDDND222 Processes Technology

Allocated remaining one of the following:

HDC005 Contemporary Design Issues  
HDC006 Managing Design

**Elective Studies:**

HDMM0D213 3D Modelling for Objects and Environments  
OR any unit from an Electives Plus Sequence (see above)

**Stage 3**

HDD0009 Careers in the Curriculum (Prahran students only)

This is a zero credit point subject which is compulsory for students in the second or third year of their course.

**Semester 1**

HDDND311 Manufacturing Technology  
HDD3D002 Furniture Design

Allocated one of the following:

HDC007 Communicating Practice  
HDC008 Design Systems and Services  
HDC009 Design and Business Strategy

**Elective Studies:**

HDD3D001 Exhibition Design  
OR

HDDND312 Sporting Directions  
OR

One unit from any Electives Plus sequence (see above)

**OR Industry Placement**

HDP050 Industry Placement 1 (37.5 credit points)

Any 12.5 credit point subject from Stage 3 units of study

**Semester 2**

HDDND321 Industrial Design Studio - Professional Practice  
HDDND322 Manufacturing Communication

Allocated remaining two of the following:

HDC007 Communicating Practice  
HDC008 Design Systems and Services  
HDC009 Design and Business Strategy

**OR Industry Placement**

HDP055 Industry Placement 2 (37.5 credit points)

Any 12.5 credit point subject from Stage 3 units of study

**LiNKoWKiNg University of Creative Technology, Kuala Lumpur**

**Stage 3 (only)**

**Semesters 1 & 2**

HDDND311KL Manufacturing Technology  
HDD3D001KL Exhibition Design  
HDD3D029KL Furniture Design  
HDC008KL Design Systems and Services

**Semesters 1 & 2**

HDDND312KL Industrial Design Studio - Professional Practice
HDIND322KL Manufacturing Communication
HDCl009KL Design and Business Strategy
HDC007KL Communicating Practice

Note: Programs conducted in Kuala Lumpur will have the initials KL at the end of the unit of study code. Kuala Lumpur will deliver Stage 3 only of the program, not including Industry Placement.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 and 4 - a study score of at least 20 in English (any), Mathematics (any) and in one of Visual Communication and Design, Design and Technology or Physics.

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2007 Round 1 Clearly-In: 75.85 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC), VTAC code: 36201 (CSP), 36202 (Fee), 36203 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Bachelor of Design (Interior Design) [DINTD10]

Interior Design concerns itself with the humanistic element of space, of how the environments in which we spend our day-to-day existence are formed and fabricated. Students in the program engage with a variety of projects which deal with small-scale (residential) to large-scale (offices, hospitals) projects. Graduates of the program work as interior designers in multi-disciplinary groups and work on projects which range from exhibition and furniture design to multi-million dollar construction projects.

Note: Stage 3 of this course may also be run at the Singapore Institute of Materials Management in 2008 subject to sufficient enrolments.

Aims & Objectives
The Bachelor of Design (Interior Design) degree conforms to the AQF Guidelines for a bachelor degree by allowing students to:

- Acquire a systematic and coherent body of knowledge, the underlying principles and concepts, and the associated communication and problem-solving skills.
- Develop academic skills and attributes necessary to undertake Design research, comprehend and evaluate new information, concepts and evidence from a range of sources (Refer to the following units of study: HDC001, HDC002, HDC005).
- Develop the ability to review, consolidate, extend and apply the knowledge and techniques learnt, including in a professional context (Refer to the following units of study: HDC004, HDC007, HDC008).
- Gain a foundation for self-directed and lifelong learning.
- Gain interpersonal and teamwork skills appropriate to employment and/or further study.

Campus
Prahran

Career Opportunities
Interior and exhibition design, hotel/retail design, theatre design, museum design, computer aided design, design management.

Professional Recognition
Graduates of the program are eligible for Associate Membership of the Design Institute of Australia.

Course Duration
Three years full-time or equivalent part-time. Students holding an international student visa are required to study full-time.

Course Structure
The available units of study for completion of the Bachelor of Design (Interior Design) are classified into four study groups:

- Core units of study
- Specialist Interior Design units of study
- Interior Design Elective units of study

- Electives Plus sequences (or Faculty elective sequence)

Students will normally be enrolled in a Recommended Study Sequence and must successfully complete a minimum of 300 credit points, 50 credit points per semester for full-time students. Note that international student visa holders are required to study full-time. To qualify for the award, a student must complete, or have been granted an exemption for the units of study listed below. Students initially enter into the three year bachelor program. At the end of that program students may exit with an undergraduate bachelor degree.

Work expected outside normal timetabled contact hours, in keeping with related design courses, will usually be no less than a minimum of two hours independent study for each contact hour.

Careers in the Curriculum (CIC) (Prahran students only)

In addition to the above, students must complete a compulsory unit of study HD000/09 Careers in the Curriculum to be awarded the degree, Careers in the Curriculum is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or FEE debt as the cost will be met by the university as part of an initiative to enhance students' career skills

Honours

The first two years are common, followed by either a year three (pass degree) or selection into the four year Honours program with Industry Placement (third year). The Honours program requires a further 100 credit points of units of study consisting of all coursework or two Professional Practice and two other units of study in the Design Centre.

Students may continue into the Bachelor of Design (Honours) (Interior Design) program through the following avenues:

- If a student has maintained a grade average of credit or above (without participating in the Industry Placement (IP) program), they may be invited to apply to study in the Honours year.
- students who are involved in the IP program will be required to participate in the Honours year of study.

Electives Plus Sequences
Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Enterprising Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Elective Plus Sequence details.

Final Year Experience - Major Projects

As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternative study sequences to be undertaken.

Winter/Summer Term

The Faculty of Design offers an optional six-week Winter and/or Summer Term allowing you to complete extra study between the standard semesters. These terms are not mandatory. However, if you wish to vary your study load you may want to consider this option.

Units of Study
Units of study are 12.5 credit points unless otherwise indicated with students normally undertaking 50 credit points per semester.
Swinburne Prahran - February Intake

Stage 1

Semester 1
HDINT111 Interior Design Studio - Context, Space, Place and Dwelling
HDINT112 Interior Design Communication
Allocated two of the following:
HDC001 20th Century Design
HDC002 Methods of Investigation
HDC003 Design Studio
HDC004 Digital Design

Semester 2
HDINT121 Interior Design Construction Technology
HDINT122 Contemporary Interior Design Theory
Allocated remaining two of the following:
HDC001 20th Century Design
HDC002 Methods of Investigation
HDC003 Design Studio
HDC004 Digital Design

Stage 2
HDD0009 Careers in the Curriculum (Prahran students only)
This is a zero credit point subject which is compulsory for students in the second or third year of their course.

Semester 1
HDINT211 Interior Design Studio - Changing Patterns and Social Space
HDINT212 Digital Representation
Allocated one of the following:
HDC005 Contemporary Design Issues
HDC006 Managing Design

Elective Studies:
HDMMD213 3D Modelling for Objects and Environments
OR one unit from any Electives Plus sequence (see above)

Semester 2
HDINT221 Interior Design Studio - Virtual Space
HDINT222 Construction Technology - Documentation and Detailing
Allocated remaining one of the following:
HDC005 Contemporary Design Issues
HDC006 Managing Design

Elective Studies:
HDFTV222 Film Screening Series - Production and Direction/MIFF
OR one unit from an Electives Plus sequence (see above)

Stage 3
HDD0009 Careers in the Curriculum (Prahran students only)
This is a zero credit point subject which is compulsory for students in the second or third year of their course.

Semester 1
HDINT311 Interior Design Studio - Sustainable Design
HD3D001 Exhibition Design
HDC008 Design Systems and Services
HDC009 Design and Business Strategy

OR Industry Placement
HDPI50 Industry Placement 1 (37.5 credit points)
Any 12.5 credit point subject from Stage 3 units of study

Semester 2
HDINT321 Interior Design Studio – Inhabitation
HDINT322 Construction Technology - Documentation and Specification
HDC007 Communicating Practice

Elective Studies:
HDC002 Furniture Design
OR one unit from any Electives Plus sequence (see above)

Swinburne Prahran - July Intake

Stage 1

Semester 2
HDINT121 Interior Design Construction Technology
HDINT122 Contemporary Interior Design Theory
Allocated two of the following:
HDC001 20th Century Design
HDC002 Methods of Investigation
HDC003 Design Studio
HDC004 Digital Design

Semester 1
HDINT111 Interior Design Studio - Context, Space, Place and Dwelling
HDINT112 Interior Design Communication
Allocated remaining two of the following:
HDC001 20th Century Design
HDC002 Methods of Investigation
HDC003 Design Studio
HDC004 Digital Design

Stage 2
HDD0009 Careers in the Curriculum (Prahran students only)
This is a zero credit point subject which is compulsory for students in the second or third year of their course.

Semester 2
HDINT221 Interior Design Studio - Virtual Space
HDINT222 Construction Technology - Documentation and Detailing
Allocated one of the following:
HDC005 Contemporary Design Issues
HDC006 Managing Design

Elective Studies:
HDFTV222 Film Screening Series - Production and Direction/MIFF
OR one unit from any Electives Plus sequence (see above)

Semester 1
HDINT211 Interior Design Studio - Changing Patterns and Social Space
HDINT212 Digital Representation
Allocated remaining one of the following:
HDC005 Contemporary Design Issues
HDC006 Managing Design

Elective Studies:
HDMMD213 3D Modelling for Objects and Environments
OR one unit from any Electives Plus sequence (see above)

Stage 3
HDD0009 Careers in the Curriculum (Prahran students only)
This is a zero credit point subject which is compulsory for students in the second or third year of their course.

Semester 2
HDINT321 Interior Design Studio - Inhabitation
HDINT322 Construction Technology - Documentation and Specification
HDC007 Communicating Practice

Elective Studies:
HD3D002 Furniture Design
OR one unit from any Electives Plus sequence (see above)

OR Industry Placement
HDPI50 Industry Placement 2 (37.5 credit points)
Any 12.5 credit point subject from Stage 3 units of study

Semester 1
HDINT311 Interior Design Studio - Sustainable Design
Sustainable Singapore

Note: This course will run in Singapore in 2008 subject to sufficient enrolments.

Stage 3 (only)

Seminars 1 & 2
HDINT311SG Interior Design Studio - Sustainable Design

HDINT313SG Design Systems and Services

HDINT316SG Exhibition Design
HDINT317SG Modelling for Objects and Environments

Semester 1 & 2
HDINT318SG Design and Business Strategy
HDINT319SG Interior Design Studio - Inhabitation
HDINT320SG Construction Technology - Documentation and Specification
HDINT321SG Communicating Practice

Note: Programs conducted in Sydney, Hong Kong and Singapore will have the initials S, HK or SG at the end of the unit of study code. Sydney, Hong Kong and Singapore will deliver Stage 3 of the program, not including Industry Placement.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent such as an interstate or international Year 12 qualification.

2008 VCE prerequisites: Units 3 & 4 - a study score of at least 20 in English (any) and in one of Visual Communication and Design or Studio Arts.

Successful completion of a relevant diploma or equivalent may provide entry into these programs with advanced standing.

2007 Round 1 Clearly-In: 78.95 (CSF), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 36031 (CSF), 36032 (Fee), 36033 (Int)

For further information, visit the VTAC website at: www.vtac.edu.au

Bachelor of Design (Multimedia Design) [DMN10]

The Multimedia Design program prepares students to work with design for digital film production, the World Wide Web and computer interactive media. The study of time-based sequence design provides students with expertise in animation, 3D modelling, digital video, audio media, and communication design for electronic media. Graduates leave the program with highly developed and relevant skills for work in such diverse industries as post-production houses (including the film and television industry), digital video, animation, web design consultancies, and video game design houses.

This course is offered at the Hawthorn campus, with some units available at Hawthorn campus.

NOTE: Stage 3 of this program, not including Industry Placement is also delivered at the Billy Blue School in North Sydney and City University, Hong Kong. Fees for students studying at campuses other than Swinburne Prahran will be different. Please contact the relevant institute for details. Stage 3 of this course may also be run at the Singapore Institute of Materials Management in 2008 subject to sufficient enrolments.

Aims & Objectives

The Bachelor of Design (Multimedia Design) degree conforms to the AQF Guidelines for a bachelor degree by allowing students to:

- Acquire a systematic and coherent body of knowledge, the underlying principles and concepts, and the associated communication and problem-solving skills
- Develop academic skills and attributes necessary to undertake Design research, comprehend and evaluate new information, concepts and evidence from a range of sources (Refer to the following units of study: HDD001, HDD002, HDD005)
- Develop the ability to review, consolidate, extend and apply the knowledge and techniques learnt, including in a professional context (Refer to the following units of study: HDD004, HDD007, HDD008)
- Gain a foundation for self-directed and lifelong learning
- Gain interpersonal and teamwork skills appropriate to employment and/or further study.

Campus

Prahran

Career Opportunities

Design consultancies, information technology companies, media and entertainment studios, advertising agencies and government instrumentalities.

Professional Recognition

Graduates of the program are eligible for membership of the Australian Graphic Design Association (AGDA), membership of multimedia Industry Network (mnIN) and Associate Membership of the Design Institute of Australia (DIA)

Course Duration

Three years full-time study or equivalent part-time study.

Students holding an International student visa are required to study full-time.

Course Structure

The available units of study for completion of the Bachelor of Design (Multimedia Design) are classified into four study groups:

- Core units of study
- Specialist Multimedia Design units of study
- Multimedia Elective units of study
- Electives Plus sequences (or Faculty elective sequence).

Students will normally be enrolled in a Recommended Study Sequence and must successfully complete a minimum of 300 credit points, 50 credit points per semester for full-time students. Note that international student visa holders are required to study full-time. To qualify for the award, a student must complete, or have been granted an exemption for the units of study listed below. Students initially enter into the three year bachelor program. At the end of that program students may exit with an undergraduate bachelor degree.

Work expected outside normal timetabled contact hours, in keeping with related design courses, will usually be no less than a minimum of two hours independent study for each contact hour.

Careers in the Curriculum (CIC) (Prahran students only)

In addition to the above, students must complete a compulsory unit of study HDD0009 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum is an innovative unit designed to assist Swinburne Prahran students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or Fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills

Honours

The first two years are common, followed by either a year three (pass degree) or selection into the four year Honours program with Industry Placement (third year). The Honours program requires a further 100 credit points of units of study consisting of all coursework or two Professional Practice and two other units of study in the Design Centre.

Students may continue into the Bachelor of Design (Multimedia Design) (Honours) program through the following avenues:

- If a student has maintained a grade average of credit or above (without participating in the Industry Placement (IP) program)
- They may be invited to apply to study in the Honours year. Students who are enrolled in the IP program will be required to participate in the Honours year of study.

Electives Plus Sequences

Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Enterprising Marketing
• Establishing and Running a Business
• Information Orientation and Knowledge Management
• Language Practice and Culture
• Multimedia & Web Development
• Sustainability
• The Networked Economy
• Undergraduate Research Skills

Elective Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Elective Plus Sequence details.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternative study sequences to be undertaken.

Winter/Summer Term
The Faculty of Design offers an optional six-week Winter and/or Summer Term allowing you to complete extra study between the standard semesters. These terms are not mandatory. However, if you wish to vary your study load you may want to consider this option.

Units of Study
Unit of study are 12.5 credit points unless otherwise indicated.

Swinburne Prahran - February Intake

Stage 1
Semester 1
HDMMD111 2D Animation
HDMMD112 Imaging for Narrative and Storyboards
Allocated two of the following:
HDC001 20th Century Design
HDC002 Methods of Investigation
HDC003 Design Studio
HDC004 Digital Design

Semester 2
HDMMD121 Interactive Design for Web Technology
HDMMD122 2D Character Animation
Allocated remaining two of the following:
HDC001 20th Century Design
HDC002 Methods of Investigation
HDC003 Design Studio
HDC004 Digital Design

Stage 2
HDD0009 Careers in the Curriculum (Prahran students only)
This is a zero credit point unit which is compulsory for students in the second or third year of their course.

Semester 1
HDMMD211 Interactive Design for Games and Web Applications
HDMMD212 Digital Video Camera Techniques
Allocated one of the following:
HDC005 Contemporary Design Issues
HDC006 Managing Design
Elective Studies:
HDMMD213 3D Modelling for Objects and Environments
OR any unit from Electives Plus sequence (see above)

Semester 2
HDMMD221 Typography for Screen and Motion
HDMMD222 Post Production for Film and Video
Allocated remaining one of the following:
HDC005 Contemporary Design Issues
HDC006 Managing Design
Elective Studies:
HDMMD200 3D Character Design and Animation
OR any unit from an Electives Plus sequence (see above)

Stage 3
HDD0009 Careers in the Curriculum (Prahran students only)
This is a zero credit point unit which is compulsory for students in the second or third year of their course.

Semester 1
HDMMD321 Individual Research Project
HDMMD312 Multimedia Design New Technologies
Allocated one of the following:
HDC007 Communicating Practice
HDC008 Design Systems and Services
HDC009 Design and Business Strategy
Elective Studies:
HDMMD320 3D Character and Environment Design for Animation
OR any unit from an Electives Plus sequence (see above)

OR Industry Placement
HDP050 Industry Placement 1 (37.5 credit points)
Any 12.5 credit point subject from Stage 3 units of study

Swinburne Prahran - July Intake

Stage 1
Semester 2
HDMMD121 Interactive Design for Web Technology
HDMMD122 2D Character Animation
Allocated two of the following:
HDC001 20th Century Design
HDC002 Methods of Investigation
HDC003 Design Studio
HDC004 Digital Design

Semester 1
HDMMD111 2D Animation
HDMMD112 Imaging for Narrative and Storyboards
Allocated remaining two of the following:
HDC001 20th Century Design
HDC002 Methods of Investigation
HDC003 Design Studio
HDC004 Digital Design

Stage 2
HDD0009 Careers in the Curriculum (Prahran students only)
This is a zero credit point unit which is compulsory for students in the second or third year of their course.

Semester 2
HDMMD221 Typography for Screen and Motion
HDMMD222 Post Production for Film and Video
Allocated one of the following:
HDC005 Contemporary Design Issues
HDC006 Managing Design
Elective Studies:
HDMMD200 3D Character Design and Animation
Semester 1
HDMMD211 Interactive Design for Games and Web Applications
HDMMD212 Digital Video Camera Techniques
Allocated remaining one of the following:
HDC005 Contemporary Design Issues
HDC006 Managing Design
Elective Studies:
HDMMD213 3D Modelling for Objects and Environments
OR any unit from an Electives Plus sequence (see above)

Stage 3
HDMMD300 Careers in the Curriculum (Prahran students only)
This is a zero credit point unit which is compulsory for students in the second or third year of their course.

Semester 2
HDMMD311 Group Project Research
HDMMD322 Multimedia Design: Advanced Technology
Allocated two of the following:
HDC007 Communicating Practice
HDC008 Design Systems and Services
HDC009 Design and Business Strategy

OR Industry Placement
HDP050 Industry Placement 2 (37.5 credit points)
Any 12.5 credit point subject from Stage 3 units of study

Semester 1
HDMMD200S Industry Placement
HDMMD312 Multimedia Design New Technologies
Allocated remaining one of the following:
HDC007 Communicating Practice
HDC008 Design Systems and Services
HDC009 Design and Business Strategy
Elective Studies:
HDMMD300 3D Character and Environment Design for Animation
OR any unit from an Electives Plus sequence (see above)

OR Industry Placement
HDP050 Industry Placement 1 (37.5 credit points)
Any 12.5 credit point subject from Stage 3 units of study

Billy Blue College (Sydney)
Stage 3 (Only)
Semesters 1 and 2
HDMMD311S Individual Research Project
HDMMD322S Multimedia Design: Advanced Technology
HDC007S Communicating Practice
HDC008S Design Systems and Services
HDC009S Design and Business Strategy

Semesters 1 and 2
HDMMD311HK Individual Research Project
HDMMD322HK Multimedia Design: Advanced Technology
HDC008HK Design Systems and Services

City University, Hong Kong
Stage 3 (Only)
Semesters 1 and 2
HDMMD311HK Individual Research Project
HDMMD322HK Multimedia Design: Advanced Technology
HDC008HK Design Systems and Services

Singapore Institute of Materials Management
NOTE: Stage 3 of this course will run in Singapore 2008 subject to sufficient enrolments.

Stage 3 (Only)
Semester 1 and 2
HDMMD321SG Individual Research Project
HDMMD322SG Multimedia Design: New Technologies
HDC008SG Design Systems and Services

Bachelor of Film and Television [FTV10]
The Film and Television program provides comprehensive education for digital outcomes in broadcast film and video post-production, computer/video game development and mobile network telecommunications - particularly in relation to advanced production skills, creative direction and project management. The program aims to address the complexity of the film and digital video making processes and optimise learning by breaking down production components into distinct elements. The relationship between film/digital video making principles, industry-based practice and creative development forms the basis of the curriculum. Through the program's strong links with industry, graduates are well placed to seek employment in many areas of the film and television profession.

Aims & Objectives
The Bachelor of Film and Television degree conforms to the AQF Guidelines for a bachelor degree by allowing students to:
• Acquire a systematic and coherent body of knowledge, the underlying principles and concepts, and the associated communication and problem-solving skills
• Develop academic skills and attributes necessary to undertake Film and Television research, comprehend and evaluate new information, concepts and evidence from a range of sources
• Develop the ability to review, consolidate, extend and apply the knowledge and techniques learnt, including in a professional context
• Gain a foundation for self directed and lifelong learning
• Gain interpersonal and teamwork skills appropriate to employment and/or further study.

Campus
Prahran
Career Opportunities
Broadcast film and video post-production, computer/video game development and movie network telecommunications, scriptwriting.

Professional Recognition
Graduates of the program are eligible for membership of the following industry bodies:
- Australian Screen Editors Guild
- Screen Services Association of Victoria
- Australian Graphic Designers Association (AGDA)
- Design Institute of Australia (DIA)
- Melbourne Art Directors Club (MADC)
- Australian Cinematographers Society.

Course Duration
Three years full-time or equivalent part-time. Students holding an international student visa are required to study full-time.

Course Structure
The available units of study for completion of the Bachelor of Film and Television are classified into four groups:
- Core units of study
- Specialist Film and Television units of study
- Film and Television Elective units of study
- Electives Plus sequences (or Faculty elective sequence)

Students will normally be enrolled in a Recommended Study Sequence and must successfully complete a minimum of 300 credit points, 50 per semester for full-time students. To qualify for the award, a student must complete, or have been granted an exemption for the units of study listed below. Students initially enter into the three year bachelor program. At the end of that program students may exit with an undergraduate bachelor degree.

Work expected outside normal timetabled contact hours, in keeping with related design courses, will usually be no less than a minimum of two hours independent study for each contact hour.

Winter Term
From 2007 the Faculty of Design is offering an optional six-week Winter term allowing you to complete extra study between the standard Semesters. The Winter term is not mandatory. However, if you wish to vary your study load you can study over Winter.

Careers in the Curriculum (CIC) (Prahran students only)
In addition to the above, students must complete a compulsory unit of study HDD0009 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum is an innovative unit designed to assist Swinburne Prahran students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or FEE debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Honours
The first two years are common, followed by either a third year (pass degree) or selection into the four year Honours program with Industry Placement (third year). The Honours program requires a further 100 credit points units of study and will consist of two study modes being (a) six specialist coursework Film and Television units of study or (b) two Film and Television units of study and the option of specialist Media Studies units of study from the Faculty of Life and Social Science.

Students may continue into the Bachelor of Film and Television (Honours) program through the following avenues:
- If a student has maintained a grade average of credit or above (without participating in the Industry Placement (IP) program), they may be invited to apply to study in the Honours year;
- Students who are involved in the IP program will be required to participate in the Honours year of study.

Electives Plus Sequences
Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
- Design: Process and Strategy
- Effective Communication
- Enterprise Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Elective Plus Sequence details.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally focussed final year major projects within their programs of study. Entry with advanced standing may require alternative study sequences to be undertaken.

Units of Study
All units of study are 12.5 credit points unless otherwise indicated.

Swinburne Prahran - February Intake

Stage 1

Semester 1
HDFTV111 Scriptwriting and Directing: Narrative Film
HDFTV112 Production Techniques
HDFTV113 Postproduction and Editing

Elective Studies:
HDMD111 2D Animation
Optional one unit from any Electives Plus sequence (see above)

Semester 2
HDCC004 Digital Design
HDFTV121 Documentary Production
HDFTV122 Film Screening Series - Contemporary Cinema/MIFF
HDFTV123 Production Management/ Sound Design

Stage 2
HD00009 Careers in the Curriculum (Prahran students only)
This is a zero credit point unit which is compulsory for students in the second or third year of their course.

Semester 1
HDFTV211 Scriptwriting and Directing: Film and Television Production
HDMD221 Typography for Screen and Motion

One of:
HDFTV212 Cinematography and Lighting - Film Production
OR
HDFTV221 Cinematography and Lighting - Broadcast Tape

Elective Studies:
HDMD213 3D Modelling for Objects and Environments
Optional one Unit from any Electives Plus Sequence (see above)

Semester 2
HDFTV222 Film Screening Series - Production and Direction/MIFF
HDFTV223 Screen Editing Techniques & DVD Authoring
HDC006 Managing Design

One of:
HDFTV221 Cinematography and Lighting - Broadcast Tape
OR
HDFTV212 Cinematography and Lighting - Film Production

Stage 3
HD00009 Careers in the Curriculum (Prahran students only)
This is a zero credit point unit which is compulsory for students in the second or third year of their course.
### Semester 1
- **HDFTV311** Scriptwriting and Directing: Major film and TV productions
- **HDFTV312** Research Project: Development
- **HDFTV313** Sound Design for Screen

**Elective Studies:**
- **HDCOM323** Advertising Design
- OR one unit from any Electives Plus sequence (see above)

#### Industry Placement
- **HDP050** Industry Placement 1 (37.5 credit points)
- OR Any 12.5 credit point subject from Stage 3 units of study

#### Stage 1
- **HDFTV111** Scriptwriting and Directing: Narrative Film
- **HDFTV112** Production Techniques
- **HDFTV113** Postproduction and Editing

**Elective Studies:**
- **HDCOM311** 2D Animation
- OR one unit from any Electives Plus sequence (see above)

### Stage 2
- **HDCOM309** Careers in the Curriculum (Prahran students only)
  - This is a zero credit point unit which is compulsory for students in the second or third year of their course.
- **HDFTV222** Film Screening Series - Production and Direction/MIFF
- **HDFTV223** Screen Editing Techniques & DVD Authoring
- **HDCOM306** Managing Design
- One of:
  - **HDFTV221** Cinematography and Lighting - Broadcast Taps
  - **HDFTV212** Cinematography and Lighting - Film Production

#### Semester 1
- **HDFTV211** Scriptwriting and Directing: Film and Television Production
- **HDMMD221** Typography for Screen and Motion
- One of:
  - **HDFTV212** Cinematography and Lighting - Film Production
  - **HDFTV221** Cinematography and Lighting - Broadcast Taps

**Elective Studies:**
- **HDMMD213** 3D Modelling for Objects and Environments
- OR one unit from any Electives Plus Sequence (see above)

### Stage 3
- **HDCOM309** Careers in the Curriculum (Prahran students only)
  - This is a zero credit point unit which is compulsory for students in the second or third year of their course.
- **HDFTV331** Research Project: Production (25 credit points)

### Semester 1
- **HDFTV322** Advanced Post-production and Digital Outcomes
- **HDFTV323** Cinematography and Lighting - Major Film and Television Productions

#### Industry Placement
- **HDP055** Industry Placement 2 (37.5 credit points)
- OR Any 12.5 credit point subject from Stage 3 units of study

#### Stage 1
- **HDFTV111** Scriptwriting and Directing: Major film and TV productions
- **HDFTV112** Research Project: Development
- **HDFTV113** Sound Design for Screen

**Elective Studies:**
- **HDCOM323** Advertising Design
- OR one unit from any Electives Plus sequence (see above)

#### Industry Placement
- **HDP050** Industry Placement 1 (37.5 credit points)
- OR Any 12.5 credit point subject from Stage 3 units of study

### Entry Requirements
- Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
- 2008 VCE prerequisites: Units 3 and 4 - a study score of at least 20 in English (any). 2007 Round 1: Clearly-In: ENTER: 86.85 (CSP), 96.85 (Fee)

Application Procedure
- Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
- VTAC code: 36321 (CSP), 36322 (Fee), 36323 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

### Double Degrees

**Bachelor of Design (Communication Design) / Bachelor of Business (BDBC10)**

The Bachelor of Design (Communication Design) / Bachelor of Business double degree aims to produce graduates with a broad range of design-specific skills combined with extensive skills in business and development required to introduce elements of design and the creative arts into a large field of business-related studies and vice versa.

The communication design stream aims to produce imaginative designers who work effectively in areas where information is primarily conveyed by visual means, such as advertising, publishing, publicity, printing, merchandising, multimedia, education and research. This core component of the double degree program trains students to be effective designers and communicators through a wide variety of visual communication based projects, together with contextual and professional studies. The business stream provides students with skills and abilities pertinent to a variety of professional careers in the private and public sectors. Students are encouraged to develop a theoretical understanding of their chosen disciplines to enable them to understand current developments in society and the workplace, and to adapt and respond appropriately to future developments as they occur.

In addition, the program is designed to enhance a number of generic skills highly valued by employers and important for the development of the individual such as self-awareness, presentation and communication skills, and skills for the maintenance of learning and knowledge.

**NOTE:** Units of study for this double degree are delivered at the Lilydale and Prahran campuses. Attendance at both campuses is required.

### Aims & Objectives

This program aims to produce graduates who are able to apply the more creative principles of design with the more linear principles of business to map out a new approach to business, design and problem-solving. Through the program’s strong links with industry, graduates are well placed to seek employment in a wide variety of areas in the communication design industry.

The program will equip students with the skills, knowledge and key theoretical insights required to work effectively within a broad range of contemporary business and design environments. It seeks to blend design, business and public relations disciplines in new and innovative ways to produce highly desirable
business graduates who will bring a new approach to business and organisational structures.

**Campus**
Lilydale and Prahran (attendance at both campuses is required).

**Course Duration**
Four years full-time or equivalent part-time. Students holding an international student visa are required to study full-time.

**Course Structure**
The Bachelor of Design (Communication Design) / Bachelor of Business double degree requires students to successfully complete 400 credit points of approved units of study equivalent to four years of full-time study, with an optional and additional year of Industry-Based Learning (IBL)* normally taken after three years of study.

The program operates under a student workload model based on 100 credit points for a full-time academic year. Usually, four units of study are taken per semester, each unit having a value of 12.5 credit points.

Students will normally be enrolled in a Recommended Study Sequence, depending on their choice of major study in the business program, and must successfully complete a minimum of 400 credit points. In all cases, students must choose units from study groups according to the following rules:

- **Core Business Studies** (5 units from the Faculty of Higher Education, Lilydale)
- **Core Design Studies** (7 units from the Faculty of Design)
- **Business Major** (6 or 7 units from the Faculty of Higher Education, Lilydale)
- **Design Major** (5 units from the Faculty of Design)
- **Business Minor** (4 units from the Faculty of Higher Education, Lilydale)
- **Additional elective units of study from any Lilydale program (if required in order to complete 16 Faculty of Higher Education, Lilydale units)**

The Program Panel has the authority to approve additional elective studies for particular students. Such approvals will be advised to the Faculty of Design Academic Committee. Although there may be constraints relating to timetabling, students undertaking a double-degree program will have considerable flexibility, given the interdisciplinary nature of program requirements at Lilydale and timetable availability at Prahran.

**Careers in the Curriculum (CIC)**
In addition to the above, students must complete a compulsory unit of study HDC0009. Careers in the Curriculum is a mandatory unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

**Final Year Experience - Major Projects**
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally focussed final year major projects within their programs of study. Entry with advanced standing may require alternative study sequences to be undertaken.

*Please note that IBL is not available to international students.**

**Winter/Summer Term**
The Faculty of Design offers an optional six-week Winter and/or Summer Term initiative to enhance students’ career skills.

**Units of Study**

**Core Business Studies**
- LBC100 Accounting 1
- LBE100 Microeconomics
- LBM100 Marketing Concepts
- LTE100 Introduction to Management

**Core Design Units**
- HDC002 Methods of Investigation
- HDC003 Design Studio
- HDC004 Digital Design

**HDC005** Contemporary Design Issues
**HDC006** Managing Design
**HDC008** Design Systems and Services
**HDC009** Design and Business Strategy

**Business Majors**
Select one of the following Business Major study groups:

**Accounting Studies**
- LBC200 Computer Accounting Systems
- LBC202 Management Accounting I
- LBC203 Computer Cost Accounting Systems
- LBC204 Financial Management I
- LBC204 Personal Investment Issues
- LBC206 Strategic Financial Management

**Note:** To achieve professional recognition in Accounting students would be required to undertake additional studies.

**Marketing Studies**
- LCR100 Statistics and Research Methods
- LBM200 Marketing Behaviour
- LBM201 Marketing Planning
- LBM202 Marketing Communications
- LSO201 Survey Research Methods
- LBM300 Product Management
- LBM301 Services Marketing and Management

**Economics Studies**
- LBE200 Macroeconomics
- LBE201 Managerial Economics and Strategy
- LBE203 Environmental Economics
- LBE204 Financial Markets and Institutions
- LBE300 Economic Policy in Society
- LBE301 International Trade and Finance
- LBE306 Strategic Financial Management

**Economics - Finance Studies**
- LBE200 Macroeconomics
- LBE204 Financial Management I
- LBE204 Financial Markets and Institutions
- LBE204 Personal Investment Issues
- LRC301 International Trade and Finance
- LBE306 Strategic Financial Management

**Human Resource Management Studies**
- LTE200 Organisations and Management
- LTE201 Human Resource Management
- LTE202 Organisational Behaviour
- LBL301 Law of Employment
- LTE300 Organisational Change and Development
- LTE301 Strategic Planning and Project Management

**Management**
- LTE200 Organisations and Management
- LTE201 Human Resource Management
- LTE202 Organisational Behaviour
- LTE300 Organisational Change and Development
- LTE301 Strategic Planning and Project Management
- LTE302 Leadership and Management

**Public Relations**
- LPR100 Professional Communication Practice
- LPR200 Public Relations Theory and Practice
- LPR201 Public Relations Writing
- LBM202 Marketing Communications
- LPR300 Strategic Public Relations Planning
- LPR301 Public Relations Campaigns
- LPR302 Events Management
Design Major (Communication Design)
HDCOM111 Introduction to Communication Design
HDCOM112 Typography
HDCOM121 Form and Structure for Communication Design
HDCOM122 Photography in Communication Design
HDCOM211 Typography for Publication
HDCOM222 Visual Language
HDCOM221 Branding and Identity
HDCOM311 Communication Design Strategy
HDCOM321 Publication Design

Business Minor
A minor consists of four units post Stage 1 at least one of which is at Stage III. These can be selected from:
- Accounting
- Marketing
- Economics
- Economics - Finance
- Human Resource Management
- Management
- Public Relations

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VTAC codes:
- Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
- Application Procedure
- Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

Bachelor of Design (Industrial Design) / Bachelor of Business [DBD10]
The Bachelor of Design (Industrial Design) / Bachelor of Business double degree aims to produce graduates with a broad range of design-specific skills combined with extensive skills in business and development required to introduce elements of design and the creative arts into a large field of business-related studies and vice versa.

The Industrial Design component of the program produces design graduates with a focus on a broad range of products, furniture, medical equipment, sporting equipment and associated infrastructures. Students develop their creative and technological aptitude through a program supported by professional practice, business studies, consumer knowledge, and ethics and cultural studies. This core component of the double degree program trains students to be effective designers and communicators through a wide variety of industrial design based projects, together with contextual and professional studies.

The Business component provides students with skills and abilities pertinent to a variety of professional careers in the private and public sectors. Students are encouraged to develop a theoretical understanding of their chosen disciplines to enable them to understand current developments in society and the workplace, and to adapt and respond appropriately to future developments as they occur. In addition, the program is designed to enhance a number of generic skills highly valued by employers and important for the development of the individual such as self-awareness, presentation and communication skills, and skills for the maintenance of learning and knowledge.

NOTE: Units of study for this double degree are delivered at the Lilydale and Prahran campuses. Attendance at both campuses is required.

Aims & Objectives
The Bachelor of Design / Bachelor of Business seeks to combine the two areas as a way of mapping out the emerging discipline of design management. This discipline would attempt to draw on the thoroughness, linearity and organisational structure of a business education and combine it with skills in creative problem solving, user-experience and an understanding of the end-user. Such a discipline-base would be applicable to large and small-scale companies and would set graduates of the program into a new and expanding field of business and design.

Campus
Lilydale and Prahran (attendance at both campuses is required)

Career Opportunities
Through the program's strong links with industry, graduates are well placed to seek employment in a wide variety of areas in the industrial design industry.

Course Duration
Four years full-time or equivalent part-time. Students holding an international student visa are required to study full-time.

Course Structure
The Bachelor of Design (Industrial Design) / Bachelor of Business double degree requires students to successfully complete 400 credit points of approved units of study equivalent to four years of full-time study, with an optional and additional year of Industry-Based Learning (IBL) normally taken after three years of study.

The program operates under a student workload model based on 100 credit points for a full-time academic year. Usually, four units of study are taken per semester, each unit having a value of 12.5 credit points.

Students will normally be enrolled in a Recommended Study Sequence, depending on their choice of major study in the Business program, and must successfully complete a minimum of 400 credit points. In all cases, students must choose units from study groups according to the following rules:
- Core Business Studies (5 units from the Faculty of Higher Education, Lilydale)
- Core Design Studies (7 units from the Faculty of Design)
- Business Major (8 or 7 units from the Faculty of Higher Education, Lilydale)
- Design Major (9 units from the Faculty of Design)
- Business Minor (4 units from the Faculty of Higher Education, Lilydale)
- Additional elective units of study from any Lilydale program (if required in order to complete 16 Faculty of Higher Education, Lilydale units).

The Program Panel has the authority to approve additional elective studies for particular students. Such approvals will be advised to the Faculty of Design Academic Committee. Although there may be constraints relating to timetabling, students undertaking a double-degree program will have considerable flexibility, given the interdisciplinary nature of program requirements at Lilydale and timetabling availability at Prahran.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HD00099 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternative study sequences to be undertaken.

Please note that IBL is not available to international students

Winter/Summer Term
The Faculty of Design offers an optional six-week Winter and/or Summer Term allowing you to complete extra study between the standard semesters. These terms are not mandatory. However, if you wish to vary your study load you may want to consider this option.

Units of Study
Core Business Units
LBC100 Accounting 1
LBE100 Microeconomics
LBL100 Introduction to Commercial Law
LBM100 Marketing Concepts
LTE100 Introduction to Management

Core Design Units
HDC002 Methods of Investigation
Design Major (Industrial Design Studies)
- HD3D002 Furniture Design
- HD3D003 Product Design Studio 1
- HD3D004 Product Communication
- HD3D005 Communication Technology 1
- HD3D006 Communication Technology 2
- HDIND211 Industrial Design Studio - Ergonomic Interaction
- HDIND212 Industrial Design Studio - Changing Patterns
- HDIND221 Industrial Design Studio - Sustainable Environment
- HDIND321 Industrial Design Studio - Professional Practice

Business Minor
A minor consists of four units post Stage at least one of which is at Stage III. Students select four appropriate units of study from the following:

- Accounting
- Marketing
- Economics
- Economics - Finance
- Human Resource Management
- Management
- Public Relations

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or International Year 12 qualification. 2008 VCE Prerequisites: Units 3 and 4 - a study score of at least 20 in English (any) and in one of Art, Design or Media (any).

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC codes: 36011 (CSP), 36012 (Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Bachelor of Design (Interior Design) / Bachelor of Business [DBIND10]
The Bachelor of Design (Interior Design) / Bachelor of Business double degree aims to produce graduates with a broad range of design-specific skills combined with extensive skills in business and development required to introduce elements of design and the creative arts into a large field of business-related studies and vice versa.

Interior design is concerned with the humanistic element of space; of how the environments in which we spend our day-to-day existences are formed and fabricated. Students in the program engage with a variety of projects which deal with small-scale (residential) to large-scale (offices, hospitals) projects. This core component of the double degree program trains students to be effective designers and communicators through a wide variety of interior-design based projects, together with contextual and professional studies.

The Business stream provides students with skills and abilities pertinent to a variety of professional careers in the private and public sectors. Students are encouraged to develop a theoretical understanding of their chosen disciplines to enable them to understand current developments in society and the workplace, and to adapt and respond appropriately to future developments as they occur. In addition, the program is designed to enhance a number of generic skills highly valued by employers and important for the development of the individual such as self-awareness, presentation and communication skills, and skills for the maintenance of learning and knowledge.

NOTE: Units of study for this double degree are delivered at the Lilydale and Prahran campuses. Attendance at both campuses is required.

Aims & Objectives
The objectives of the program are to produce graduates who are able to apply the more 'creative' principles of design with the more 'linear' principles of business to map out a new approach to business, design and problem-solving. The program aims to equip students with the skills, knowledge and key theoretical insights required to work effectively within a broad range of contemporary business and design environments. It seeks to blend design, business, and public relations disciplines in new and innovative ways to produce...
highly desirable business graduates who will bring a new approach to business and organisational structures.

Campus
Lilydale and Prahran (attendance at both campuses is required)

Career Opportunities
Through the program's strong links with industry, graduates are well placed to seek employment in a wide variety of areas in the interior design industry. Graduates of the program often work as interior designers in multi-disciplinary groups and on projects which range from exhibition and furniture design to multi-million dollar construction projects.

Course Duration
Four years full-time or equivalent part-time. Students holding an international student visa are required to study full-time.

Course Structure
The Bachelor of Design (Interior Design) / Bachelor of Business double degree requires students to successfully complete 400 credit points of approved units of study equivalent to four years of full-time study, with an optional and additional year of Industry-Based Learning (IBL) normally taken after three years of study. The program operates under a student workload model based on 100 credit points for a full-time academic year. Usually, four units of study are taken per semester, each unit having a value of 12.5 credit points.

Students will normally be enrolled in a Recommended Study Sequence, depending on their choice of major study in the business program, and must successfully complete a minimum of 400 credit points. In all cases, students must choose units from study groups according to the following rules:
- Core Business Studies (6 units from the Faculty of Higher Education, Lilydale)
- Core Design Studies (7 units from the Faculty of Design)
- Business Major (6 or 7 units from the Faculty of Higher Education, Lilydale)
- Business Minor (4 units from the Faculty of Higher Education, Lilydale)
- Design Major (9 units from the Faculty of Design)
- Business Minor (4 units from the Faculty of Higher Education, Lilydale)
- Additional elective units of study from any Lilydale program (if required in order to complete the 16 Faculty of Higher Education, Lilydale units).

The Program Panel has the authority to approve additional elective studies for particular students. Such approvals will be advised to the Faculty of Design Academic Committee. Although there may be constraints relating to timetabling, students undertaking a double-degree program will have considerable flexibility, given the interdisciplinary nature of program requirements at Lilydale and timetable availability at Prahran.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HDD0009 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternative study sequences to be undertaken.

* Please note that IBL is not available to international students.

Winter/Summer Term
The Faculty of Design offers an optional six-week Winter and/or Summer Term allowing you to complete extra study between the standard semesters. These terms are not mandatory. However, if you wish to vary your study load you may want to consider this option.

Units of Study

<table>
<thead>
<tr>
<th>Core Business Units</th>
<th>LBC100</th>
<th>LBE100</th>
<th>LBL100</th>
<th>LBM100</th>
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<tr>
<td></td>
<td>Accounting 1</td>
<td>Microeconomics</td>
<td>Introduction to Commercial Law</td>
<td>Marketing Concepts</td>
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LTE100 Introduction to Management

Core Design Units
HDC002 Methods of Investigation
HDC003 Design Studio
HDC004 Digital Design
HDC005 Contemporary Design Issues
HDC006 Managing Design
HDC008 Design Systems and Services
HDC009 Design and Business Strategy

Business Majors
Select one of the following Major groups of study:

Accounting Studies
LBC200 Computer Accounting Systems
LBC202 Management Accounting I
LBC203 Computer Cost Accounting Systems
LBC204 Financial Management 1
LBC304 Personal Investment Issues
LBC306 Strategic Financial Management

Marketing Studies
LCR100 Statistics and Research Methods
LBM200 Marketing Behaviour
LBM201 Marketing Planning
LBM202 Marketing Communications
LSQ201 Survey Research Methods
LBM300 Product Management
LBM301 Services Marketing and Management

Economics Studies
LBE200 Macroeconomics
LBE201 Managerial Economics and Strategy
LBE203 Environmental Economics
LBE204 Financial Markets and Institutions
LBE200 Economic Policy in Society
LBE301 International Trade and Finance
LBE306 Strategic Financial Management

Human Resource Management Studies
LTE200 Organisations and Management
LTE201 Human Resource Management
LTE202 Organisational Behaviour
LLE301 Law of Employment
LTE300 Organisational Change and Development
LTE301 Strategic Planning and Project Management
LTE302 Leadership and Management

Public Relations
LPR100 Professional Communication Practice
LPR200 Public Relations Theory and Practice
LPR201 Public Relations Writing
LBM202 Marketing Communications
Business Minor

A minor consists of four units post Stage 1 at least one of which is at Stage III. These can be selected from:

- Accounting
- Marketing
- Economics
- Economics - Finance
- Human Resource Management
- Management
- Public Relations

Entry Requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2007 Prerequisites: Units 3 and 4 - a study score of at least 20 in English (any) and in one of Art, Design or Media (any).

2007 Clearly-in ENTER: new course for 2008

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC codes: 36011 (CSP), 36012 (Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Bachelor of Design (Multimedia Design) / Bachelor of Business (BBMM10)

The Bachelor of Design (Multimedia Design) / Bachelor of Business double degree aims to produce graduates with a broad range of design-specific skills combined with extensive skills in business and development required to introduce elements of design and the creative arts into a large field of business-related studies and vice versa.

The multimedia design program prepares students to work with design for digital film production, the world wide web and computer interactive media. The study of time-based sequence design provides students with expertise in animation, 3D modelling, digital video, audio media, and communication design for electronic media. This core component of the double degree program trains students to be effective designers and communicators through a wide variety of multimedia based projects, together with contextual and professional studies.

The business stream provides students with skills and abilities pertinent to a variety of professional careers in the private and public sectors. Students are encouraged to develop a theoretical understanding of their chosen disciplines to enable them to understand current developments in society and the workplace, and to adapt and respond appropriately to future developments as they occur. In addition, the program is designed to enhance a number of generic skills highly valued by employers and important for the development of the individual such as self-awareness, presentation and communication skills, and skills for the maintenance of learning and knowledge.

NOTE: Units of study for this double degree are delivered at the Lilydale and Prahran campuses. Attendance at both campuses is required.

Aims & Objectives

A Bachelor of Design / Bachelor of Business seeks to combine the two areas as a way of mapping out the emerging discipline of design management. The program aims to draw on the thoroughness, linearity and organisational structure of a business education and combine it with skills in creative problem solving, user-experience and an understanding of the end-user. Such a discipline-base would be applicable to large and small-scale companies and would set graduates of the program into a new and expanding field of business and design. Graduates leave the program with highly developed and relevant skills for work in such diverse industries as post-production houses (including the film and television industry), digital video, animation, web design consultancies and video game design houses.

Campus

Lilydale and Prahran (attendance at both campuses is required)

Career Opportunities

The program aims to equip students with the skills, knowledge and key theoretical insights required to work effectively within a broad range of contemporary business and design environments. It seeks to blend design, business, and public relations disciplines in new and innovative ways to produce highly desirable business graduates who will bring a new approach to business and organisational structures.

Course Duration

Four years full-time or equivalent part-time. Students holding an international student visa are required to study full-time.

Course Structure

The Bachelor of Design (Multimedia Design) / Bachelor of Business double degree requires students to successfully complete 400 credit points of approved units of study equivalent to four years of full-time study, with an optional and additional year of Industry-Based Learning (IBL) normally taken after three years of study. This program operates under a student workload model based on 100 credit points for a full-time academic year. Usually, four units of study are taken per semester, each unit having a value of 12.5 credit points.

Students will normally be enrolled in a Recommended Study Sequence, depending on their choice of major study in the Business program, and must successfully complete a minimum of 400 credit points. In all cases, students must choose units from study groups according to the following rules:

- Core Business Studies (5 units from the Faculty of Higher Education, Lilydale)
- Core Design Studies (7 units from the Faculty of Design)
- Business Major (6 or 7 units from the Faculty of Higher Education, Lilydale)
- Design Major (9 units from the Faculty of Design)
- Business Minor (4 units from the Faculty of Higher Education, Lilydale)

Additional elective units of study from any Lilydale program (if required in order to complete the 16 Faculty of Higher Education, Lilydale units)

The Program Panel has the authority to approve additional elective studies for particular students. Such approvals will be advised to the Faculty of Design Academic Committee. Although there may be constraints relating to timetabling, students undertaking a double-degree program will have considerable flexibility, given the interdisciplinary nature of program requirements at Lilydale and timetabled availability at Prahran.

Careers in the Curriculum (CIC)

In addition to the above, students must complete a compulsory unit of study HDD0008 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects

As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternative study sequences to be undertaken. *Please note that IBL is not available to international students

Winter/Summer Term

The Faculty of Design offers an optional six-week Winter and/or Summer Term allowing you to complete extra study between the standard semesters. These terms are not mandatory. However, if you wish to vary your study load you may want to consider this option.
Units of Study

Core Business Units
- LBC100 Accounting 1
- LBE100 Microeconomics
- LBL100 Introduction to Commercial Law
- LBM100 Marketing Concepts
- LTE100 Introduction to Management

Core Design Units
- HDC002 Methods of Investigation
- HDC003 Design Studio
- HDC004 Digital Design
- HDC005 Contemporary Design Issues
- HDC006 Managing Design
- HDC008 Design Systems and Services
- HDC009 Design and Business Strategy

Business Majors
Select one of the following Major groups of study:

Accounting Studies
- LBC200 Computer Accounting Systems
- LBE201 Management Accounting 1
- LBC203 Computer Cost Accounting Systems
- LBC204 Financial Management 1
- LBC204 Personal Investment Issues
- LBC306 Strategic Financial Management

Marketing Studies
- LCR101 Statistics and Research Methods
- LBM201 Marketing Planning
- LBM202 Marketing Communications
- LSO201 Survey Research Methods
- LBM300 Product Management
- LBM301 Services Marketing and Management

Economics Studies
- LBE200 Macroeconomics
- LBE201 Managerial Economics and Strategy
- LBE203 Environmental Economics
- LBE204 Financial Markets and Institutions
- LBE300 Economic Policy in Society
- LBE301 International Trade and Finance

Economics - Finance Studies
- LBE200 Macroeconomics
- LBE202 Financial Management 1
- LBE204 Financial Markets and Institutions
- LBE204 Personal Investment Issues
- LBE301 International Trade and Finance
- LBE306 Strategic Financial Management

Human Resource Management Studies
- LTE200 Organisations and Management
- LTE201 Human Resource Management
- LTE202 Organisational Behaviour
- LBL301 Law of Employment
- LTE300 Organisational Change and Development
- LTE301 Strategic Planning and Project Management

Leadership and Management
- LTE302 Leadership and Management

Public Relations Studies
- LPR100 Professional Communication Practice
- LPR200 Public Relations Theory and Practice
- LPR201 Public Relations Writing
- LBM202 Marketing Communications
- LPR300 Strategic Public Relations Planning
- LPR301 Public Relations Campaigns
- LPR302 Events Management

Design Major (Multimedia Design) Studies
- HDMMD111 2D Animation
- HDMMD112 Imaging for Narrative and Storyboards
- HDMMD211 Interactive Design for Web Technology
- HDMMD212 Digital Video Camera Techniques
- HDMMD221 Typography for Screen and Motion
- HDMMD312 Multimedia Design New Technologies
- HDMMD322 Multimedia Design: Advanced Technology

Business Minor
A minor consists of four units post Stage 1 at least one of which is at Stage III. These can be selected from:
- Accounting
- Marketing
- Economics - Finance
- Human Resource Management
- Management
- Public Relations

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 Prerequisites: Units 3 and 4 - a study score of at least 20 in English (any) and in one of Art, Design or Media (any).

2007 Clearly-in ENTER: new course for 2008

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC codes: 36011 (CSP), 36012 (Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Honours Year

Bachelor of Design (Communication Design)(Honours) [DCD20]

The Communication Design program aims to produce imaginative designers, who work effectively in areas where information is primarily conveyed by visual means - such as advertising, publishing, publicity, printing, merchandising, multimedia, education and research. The program educates students to be effective designers and communicators through a wide variety of visual communication based projects, together with contextual and professional studies. Through the program's strong links with industry, graduates are well placed to seek employment in advanced areas of communication design.

Aims & Objectives
The Bachelor of Design (Communication Design) allows students to:

- Acquire a systematic and coherent body of knowledge, the underlying principles and concepts, and the associated communication and problem-solving skills.
- Develop academic skills and attributes necessary to undertake Design research, comprehend and evaluate new information, concepts and evidence from a range of sources.
- Develop the ability to review, consolidate, extend and apply the knowledge and techniques learnt, including in a professional context.
- Gain a foundation for self directed and lifelong learning.
• Gain interpersonal and teamwork skills appropriate to employment and/or further study.

Campus
Prahran

Career Opportunities
Design consultancy, advertising, publishing, merchandising, government instrumentalities.

Professional Recognition
Graduates of the course are eligible for Associate Membership of the Design Institute of Australia and the Australian Graphic Design Association.

Course Duration
The Honours year is the fourth year of a degree course and is one year full-time.

Course Structure
The Honours program consists of all coursework units of study or one 37.5 credit point Professional Practice unit of study in the Design Centre and one other 12.5 unit of study. The fourth, Honours year, requires students to complete 100 credit point units of study, 50 credit points per teaching period. The Honours year is divided into two different streams, both requiring a Selection process.

Industry Placement
Students accepted into the Industry Placement program in third year are required to complete the coursework program in their honours year.

Design Centre
Students who have completed the Swinburne Bachelor of Design program with a credit average or above in all units of study may apply for the honours program towards the end of third year. Students with equivalent qualifications or who wish to enter the Design Centre program, are required to attend an interview and submit a folio. The Design Centre, a hybrid educational and consultancy unit is a working design studio that develops innovative design projects, especially where innovation is supported by applied design research. Projects may include both commissioned and self-determined projects. The Centre provides an introduction to professional design practice in an educational environment under the guidance of Design Centre staff and industry mentors. During this year students attend Design Centre three days a week and also complete one unit of study coursework.

Students in honours programs at Swinburne University of Technology will be awarded Honours Grades in the following categories:
- H1 (first class honours) if overall grade is 90% or above
- H2A - if overall grade is 70 to 79%
- H2B - if overall grade is 60 to 69%
- H3 - if overall grade is 50 to 59%
- N - if overall grade is below 50%

Work expected outside normal timetabled contact hours, in keeping with related design courses, will usually be no less than a minimum of two hours independent study for each contact hour.

Units of Study

Design Research Methods - February Intake

Semester 1
HDG400 Design Research Methods - Social Patterns
HDG401 Design Research Studio - Social Patterns
HDG402 Design Research Analysis - Social Patterns
HDG418 Information Design

OR Design Centre
HDG415 Professional Practice 7 (37.5 credit points)
HDG418 Information Design

Semester 2
HDG403 Design Research Methods - New Technologies
HDG404 Design Research Studio - New Technologies
HDG405 Design Research Analysis - New Technologies
HDG406 Professional Context

OR Design Centre
HDG425 Professional Practice 8 (37.5 credit points)
HDG406 Professional Context

Entry Requirements
Swinburne students undertaking a Bachelor of Design degree who are accepted into the Industry Placement program must complete the Coursework Honours year. Students who have completed a Bachelor of Design degree with Swinburne, or equivalent program, with a credit average, must attend an interview with folio, for entrance into the Coursework Honours and Design Centre Honours.

Application Procedure
Direct application to the Faculty of Design on 9214 6755 or email nidsenquiry.edu.au

Bachelor of Design (Industrial Design)(Honours) [01020]

The Industrial Design program produces design graduates with a focus on a broad range of products, furniture, medical equipment, sporting equipment and associated infrastructures. Students develop their creative and technological aptitude through a program supported by professional practice, business studies, consumer knowledge, and ethics and cultural studies.

Aims & Objectives
The Bachelor of Design (Industrial Design) degree conforms to the AQF Guidelines for a bachelor degree by allowing students to:
- Acquire a systematic and coherent body of knowledge, the underlying principles and concepts, and the associated communication and problem-solving skills.
- Develop academic skills and attributes necessary to undertake Design research, comprehend and evaluate new information, concepts and evidence from a range of sources.
- Develop the ability to review, consolidate, extend and apply the knowledge and techniques learnt, including in a professional context.
- Gain a foundation for self directed and lifelong learning.
- Gain interpersonal and teamwork skills appropriate to employment and/or further study.

Campus
Prahran

Career Opportunities
Product design and within manufacturing industries or design consultancies, exhibition, environmental and furniture design, stage and set design, self-employed designers or manufacturers.

Professional Recognition
Graduates of the program are eligible for Associate Membership of the Design Institute of Australia.

Course Duration
One year full-time.

Course Structure
The Honours program consists of all coursework units of study or one 37.5 credit point Professional Practice unit of study in the Design Centre and one other 12.5 unit of study. The fourth, Honours year, requires students to complete 100 credit point units of study, 50 credit points per teaching period. The Honours year is divided into two different streams, both requiring a Selection process.

Industry Placement
Students accepted into the Industry Placement program in third year are required to complete the coursework program in their honours year.

Design Centre
Students who have completed the Swinburne Bachelor of Design program with a credit average or above in all units of study may apply for the honours program towards the end of third year. Students with equivalent qualifications or who wish to enter the Design Centre program, are required to attend an interview and submit a folio. The Design Centre, a hybrid educational and consultancy unit is a working design studio that develops innovative design projects, especially where innovation is supported by applied design research. Projects may include both commissioned and self-determined projects. The Centre provides an introduction to professional design practice in an educational environment under the guidance of Design Centre staff and industry mentors. During this year students attend Design Centre three days a week and also complete one unit of study coursework.
Students in honours programs at Swinburne University of Technology will be awarded Honours Grades in the following categories:

- H1 (first class honours) if overall grade is 80% or above
- H2A - if overall grade is 70 to 79%
- H2B - if overall grade is 60 to 69%
- H3 - if overall grade is 50 to 59%
- N - if overall grade is below 50%

Work expected outside normal timetabled contact hours, in keeping with related design courses, will usually be no less than a minimum of two hours of independent study for each contact hour.

Units of Study

**Stage 4 (February Intake)**

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<tr>
<th>Semester 1</th>
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<td>HDG401</td>
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**OR Design Centre**

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<th>HDG412</th>
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</table>

**Application Procedure**

Direct application to the Faculty of Design on 9214 6755 or email nidenquiry@swin.edu.au

**Bachelor of Design (Interior Design)(Honours) [DMNT20]**

Interior Design concerns itself with the humanistic element of space, of how the environments in which we spend our day-to-day existence are formed and fabricated. Students in the program engage with a variety of projects which deal with small-scale (residential) to large-scale (offices, hospitals) projects. Graduates of the program work as interior designers in multi-disciplinary groups and work on projects which range from exhibition and furniture design to multi-million dollar construction projects.

**Aims & Objectives**

The Bachelor of Design (Interior Design) allows students to:

- Acquire a systematic and coherent body of knowledge, the underlying principles and concepts, and the associated communication and problem-solving skills.
- Develop academic skills and attributes necessary to undertake Design research, comprehend and evaluate new information, concepts and evidence from a range of sources.
- Develop the ability to review, consolidate, extend and apply the knowledge and techniques learnt, including in a professional context.
- Gain a foundation for self-directed and lifelong learning.
- Gain interpersonal and teamwork skills appropriate to employment and/or further study.

**Campus**

Prahran

**Career Opportunities**

Interior and exhibition design, hotel/retail design, theatre design, museum design, computer aided design, design management.

**Professional Recognition**

Graduates of the program are eligible for Associate Membership of the Design Institute of Australia.

**Course Duration**

One year full-time.

**Course Structure**

The fourth, honours year, requires students to complete 100 credit point units of study, 50 per semester.

**Industry Placement**

Students accepted into the Industry Placement program in the third year of their bachelor degree are required to complete the coursework program in their honours year.

**Design Centre**

Industry experience may be available within the Swinburne Design Centre (a hybrid educational and consultancy unit) in the Faculty of Design. Please consult the Faculty of Design directly to determine whether this option is available to you.

Students in honours programs at Swinburne University of Technology will be awarded Honours Grades in the following categories:

- H1 (first class honours) if overall grade is 80% or above
- H2A - if overall grade is 70 to 79%
- H2B - if overall grade is 60 to 69%
- H3 - if overall grade is 50 to 59%
- N - if overall grade is below 50%

Work expected outside normal timetabled contact hours, in keeping with related design courses, will usually be no less than a minimum of two hours of independent study for each contact hour.

**Units of Study**

**Stage 4 (February Intake)**

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**Application Procedure**

Direct application to the Faculty of Design on 9214 6755 or email nidenquiry@swin.edu.au

**Bachelor of Design (Multimedia Design)(Honours) [DMNT20]**

The Multimedia Design program prepares students to work with design for digital film production, the world wide web and computer interactive media. The study of time-based sequence design provides students with expertise in animation, 3D modelling, digital video, audio media, and communication design for electronic media. Graduates leave the program with highly developed and relevant skills for work in such diverse industries as post-production houses (including the film and television industry), digital video, animation, web design consultancies, and video game design houses.
Aims & Objectives
The Bachelor of Design (Multimedia Design) degree conforms to the AQF Guidelines for a bachelor degree by allowing students to:

• acquire a systematic and coherent body of knowledge, the underlying principles and concepts, and the associated communication and problem-solving skills
• develop academic skills and attributes necessary to undertake Design research, comprehend and evaluate new information, concepts and evidence from a range of sources
• develop the ability to review, consolidate, extend and apply the knowledge and techniques learnt, including in a professional context
• gain a foundation for self directed and lifelong learning
• gain interpersonal and teamwork skills appropriate to employment and/or further study.

Campus
Prahran

Career Opportunities
Design consultancies, information technology companies, media and entertainment studios, advertising agencies and government instrumentalities.

Professional Recognition
Graduates of the program are eligible for membership of the Australian Graphic Design Association (AGDA), membership of multimedia Industry Network (mmIN) and Associates Membership of the Design Institute of Australia (DIA)

Course Duration
One year full-time.

Course Structure
The Honours program consists of all coursework units of study or one 37.5 credit point Professional Practice unit of study in the Design Centre and one other 12.5 unit of study. The fourth, Honours year, requires students to complete 100 credit point units of study, 50 credit points per teaching period. The Honours year is divided into two different streams, both requiring a Selection process.

Industry Placement
Students accepted into the Industry Placement program in third year are required to complete the coursework program in their honours year.

Design Centre
Students who have completed the Swinburne Bachelor of Design program with a credit average or above in all units of study may apply for the honours program towards the end of third year. Students with equivalent qualifications or who wish to enter the Design Centre program, are required to attend an interview and submit a folio. The Design Centre, a hybrid educational and consultancy unit is a working design studio that develops innovative design projects, especially where innovation is supported by applied design research. Projects may include both commissioned and self-determined projects. The Centre provides an introduction to professional design practice in an educational environment under the guidance of Design Centre staff and industry mentors. During this year students attend the Design Centre three days a week and also complete one unit of study coursework.

Students in honours programs at Swinburne University of Technology will be awarded Honours Grades in the following categories:

• H1 (first class honours) if overall grade is 80% or above
• H2A - if overall grade is 70 to 79%
• H2B - if overall grade is 60 to 69%
• H3 - if overall grade is 50 to 59%
• N - if overall grade is below 50%

Work expected outside normal timetabled contact hours, in keeping with related design courses, will usually be no less than a minimum of two hours independent study for each contact hour.

Units of Study
Stage 4 (February Intake)

| Semester 1 | HDG400 | Design Research Methods - Social Patterns |
| HDG401 | Design Research Studio - Social Patterns |
| HDG402 | Design Research Analysis - Social Patterns |
| HDG418 | Information Design |
| HDG415 | Professional Practice 7 (37.5 credit points) |
| HDG418 | Information Design |

Semester 2
| HDG403 | Design Research Methods - New Technologies |
| HDG404 | Design Research Studio - New Technologies |
| HDG405 | Design Research Analysis - New Technologies |
| HDG406 | Professional Context |

OR Design Centre
| HDG425 | Professional Practice 8 (37.5 credit points) |
| HDG406 | Professional Context |

Entry Requirements
Swinburne students undertaking a Bachelor of Design degree who are accepted into the Industry Placement program must complete the coursework honours year. Students who have completed a Bachelor of Design degree with Swinburne, or equivalent program, with a credit average, must attend an interview with folio, for entrance into the coursework honours and Design Centre honours.

Application Procedure
Direct application to the Faculty of Design on 9214 6755 or email nidenquiry@swin.edu.au

Bachelor of Design (Retail Design)(Honours) [DRD20]
This program aims to provide graduate designers with an understanding of the convergence of commercial objectives, marketing knowledge, spatial and display design, and communication and branding strategies in the growing field of retail design. The course will prepare participants to meet the challenges of retail design, which include understanding the spatial character of retail environments, the basis of visual merchandising in strategies of display, environmental graphics, multimedia and point of sale properties, the links between retail design, brand management and marketing, the dynamics of project management, that is, scoping, overseeing and delivering projects against budgets and timelines, the commercial role of retail design, and its basis of design strategy in effective qualities such as atmospherics, store image and user experience.

Aims & Objectives
The Bachelor of Design (Retail Design) (Honours) aims to:

• Offer participants the opportunity to (1) specialise in their discipline, and (2) to engage in interdisciplinary design activity, involving direct cooperation between design disciplines to explore new kinds of design artefacts, environments and experiences unachievable through any of the individual design disciplines involved, the promotion of team-work and group-based activity being fundamental to the design philosophy of the faculty
• Provide an honours degree in Retail Design that caters for a range of participants, from the areas of Communication Design, Industrial Design, Interior Design and Multimedia Design wishing to develop a focus in Retail Design; individuals from the retail industry or marketing wanting to gain knowledge and understanding of Retail Design to work as design managers: individuals from the retail industry wanting to gain knowledge and understanding of Retail Design to work as designers: individuals from design related areas wanting to gain knowledge and understanding of Retail Design to work as designers
• Graduate students able to (1) work as leaders in design and related industries through their expertise in design practice and design service delivery, (2) possessing the processes, creative tools and research skills for innovation in design; (3) the willingness to investigate and manage change in the nature of design; and (4) an advanced understanding of the role of information technology in documenting and communicating design.

Campus
Prahran

Career Opportunities
Visual merchandising, retail environments, environmental graphics, brand management, design manager.

Professional Recognition
Graduates of the Bachelor Design (Honours) (Retail Design) are eligible for membership of the Design Institute of Australia.
NOTE: This course will be offered in 2008 subject to sufficient student enrolments.

Bachelor of Film and Television (Honours) [FTV28]
The Film and Television program provides comprehensive education for digital outcomes in broadcast film and video post-production, computer/video game development and mobile network telecommunications - particularly in relation to advanced production skills, creative direction and project management.

The program aims to address the complexity of the film and digital video making processes and optimize learning by breaking down production components into distinct elements. The relationship between film/digital video making principles, industry-based practice and creative development forms the basis of the curriculum. Through the program's strong links with industry, graduates are well placed to seek employment in many areas of the Film and Television profession.

Aims & Objectives
The Bachelor of Film and Television degree conforms to the AQF Guidelines for a bachelor degree by allowing students to:
- Acquire a systematic and coherent body of knowledge, the underlying principles and concepts, and the associated communication and problem-solving skills
- Develop academic skills and attributes necessary to undertake Film and Television research, comprehend and evaluate new information, concepts and evidence from a range of sources
- Develop the ability to review, consolidate, extend and apply the knowledge and techniques learnt, including in a professional context
- Gain a foundation for self directed and lifelong learning
- Gain interpersonal and teamwork skills appropriate to employment and/or further study.

Campus
Prahran

Career Opportunities
Broadcast film and video post-production, computer/video game development and movie network telecommunications, scriptwriting.

Professional Recognition
Graduates of the program are eligible for membership of the following industry bodies:
- Australian Screen Editors Guild
- Screenwriters Association of Victoria
- Australian Graphic Designers Association (AGDA)
- Design Institute of Australia (DIA)
- Melbourne Art Directors Club (NADC)
- Australian Cinematographers Society.

Course Duration
One year full-time or equivalent part-time. Students holding an international student visa are required to study full-time.

Course Structure
This Honours program consists of all coursework units of study and requires students to complete 100 credit point units of study, 50 per semester.

Industry Placement - Students accepted into the Industry Placement program in the third year of the bachelor degree are required to complete the coursework program in their honours year.

Students in honours programs at Swinburne University of Technology will be awarded Honours Grades in the following categories:
- H1 (first class honours) if overall grade is 80% or above
- H2A - if overall grade is 70 to 79%
- H2B - if overall grade is 60 to 69%
- H3 - if overall grade is 50 to 59%
- N - if overall grade is below 50%

Work expected outside normal timetabled contact hours, in keeping with related design courses, will usually be no less than a minimum of two hours independent study for each contact hour.

Coursework
This is a coursework program with emphasis on structured skills acquisition, design investigation and applied design projects. The program has a two semester coursework format, offering advanced knowledge and experience in design practice, design management, creative strategies, project management, and relevant technical and marketing knowledge. Students may join the program in either semester, of which semesters one and two can be taken in either order. This coursework program will particularly suit those seeking to add knowledge of retail design to their existing experience and skill base. Each semester students take the Retail Design Studio (12.5 credit points) and choose three elective units of study (12.5 credit points) from the prescribed units of study offered by the Faculty of Design or in co-operation with other Swinburne faculties. The mandatory unit of study ensures participants gain an advanced understanding of issues associated with retail design. The elective units of study allow participants to tailor their program to include a focus on marketing, creative strategy and design process, user experience or the life cycle of retail designs and associated issues of sustainability.

Units of Study
All units of study are 12.5 credit points unless otherwise indicated

Stage 4 (February Intake)
Semester 1
HDRD411 Retail Design Studio: Creative Strategies and Market Segments
Select three from the following:
HDCOM4411 Identity Design
HDRD412 Retail Design Theory
HDG413 Digital Technology - Content Creation
HDG414 Design Process - Theories and Methods
Semester 2
HDRD421 Retail Design Studio: Assimilating Space Design and Communication Strategy
HDRD422 Experience Design
HDG423 Digital Technology - Presentation
HDCOM421 Design Management

Entry Requirements
Admission to the course is through a degree or diploma in design or a design-related area from a recognised tertiary institution or substantial experience in the retail or design industry (normally five years). Desirable technical prerequisites include a working knowledge of the 2D and 3D graphic applications, for example Adobe Photoshop and Adobe Illustrator, and the 3D software applications Solidworks and 3D Studio Max (or similar).

Application Procedure
Direct application to the Faculty of Design on 9214 6755 or email nidenquiry@swin.edu.au

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Units of Study

Stage 4 (February Intake)

Semester 1
HDFTV411 Major Film and Television Research Project (25 credit points)
And one of the following elective sequences:
HDFTV412 Producing and Preproduction of Major Film and Television project
HDFTV413 Advanced Film and Television Production Techniques
OR
HAM415 Media Arts in Australia
HAM410 Electronic Writing
OR
HAM440 Media and Multimedia Research Seminar (25 credit points)

Semester 2
HDFTV421 Production of Major Film and Television Project (25 credit points)
And one of the following elective sequences:
HDFTV422 Film and Television Digital Broadcasting
HDFTV423 Advanced Film and Television Post-production Techniques
OR
HAL401 Cultural Convergence
HAM422 Creative Writing and New Media

Faculty of Engineering and Industrial Sciences

Swinburne University of Technology has long been recognised for its excellence in engineering education. In the past few years it has built up a fine reputation for its research in fundamental physics, applied physics and engineering. The Faculty of Engineering and Industrial Sciences is committed to enhancing credentials and to offering a range of engineering qualifications.

Entry Requirements

Swinburne students undertaking a Bachelor of Film and Television degree who are accepted into the Industry Placement program must complete the coursework honours year.

Students who have completed a Bachelor of Film and Television degree with Swinburne, or equivalent program, with a credit average, must attend an interview with folio/showreel, for entrance into the coursework honours year.

Application Procedure

Direct application to the Faculty of Design on 9214 6755 or email enquiries@swin.edu.au

Further Information

Telephone: +61 3 9214 8372
Fax: +61 3 9819 8264
Email: engineering@swin.edu.au
Website: www.swinburne.edu.au/engineering

Associate Degree of Technology (Aviation) [M054]

The Associate Degree of Technology (Aviation) has been developed to provide a tertiary award in conjunction with a structured training program for students who are undertaking a cadet pilot training program. The program meets the requirements of the Civil Aviation Safety Authority for provision of Commercial Pilot Licence (aeroplane) theory and practical training and examination for the same, as well as Air Transport Pilot Licence theory. Practical training and examination for Multi Engine Command Instrument Rating is also included.

On completion of the associate degree, graduates will be offered an articulated pathway into the Bachelor of Technology (Aviation) or Bachelor of Technology (Aviation)/Bachelor of Business. Upon completion of additional units of competency graduates would also be eligible for the vocational awards of Certificate IV in Transport and Distribution (Aviation Flying Operations) and Advanced Diploma of Technology (Aviation). Upon completion of the associate degree program graduates would undertake a jet type rating before commencing line pilot operations with an airline.

Note: this course is only available to applicants who are accepted into a pilot cadet training program with an organisation holding an internationally recognised Air Operators Certificate (AOC) of transport category aeroplanes.

Campus
Hawthorn

Course Structure

Students must complete 200 credit points from five discipline groups, comprising:

- 75 credit points from Aviation core,
- 62.5 credit points from Aviation Practical core,
- 25 credit points from Aviation Human Factors core,
- 12.5 credit points from Air Transportation Management core,
- 12.5 credit points from Aviation Technology core,
- 12.5 credit points elective drawn from Aviation Human Factors and Air Transportation Management studies.

All units of study are 12.5 credit points unless noted otherwise.

Units of Study

Core Aviation Studies

| HES1900 | Private Pilot Licence |
| HES1906 | Commercial Pilot Licence 1 |
| HES2901 | Commercial Pilot Licence 2 |
This degree maximises a student's career choices through a combination of the study of the physical aspects of human physiology and the related technologies, to develop an understanding of human pathophysiology and associated clinical techniques for identifying them. To develop students a sound knowledge of anatomy, physiology, the application of physics to biomedical systems, and the appropriate application of monitoring technology in the clinical environment. To develop in students a mastery of the application of physics and mathematical principles to the interpretation and study of human physiological processes. To develop an understanding of human pathophysiology and associated clinical techniques for identifying them. To develop in students a thorough understanding of the appropriate technology, instrumentation and techniques, and competence in their application, so that students are able to comprehend and analyse problems and obtain satisfactory design solutions which, where appropriate, show originality and resourcefulness. To introduce students to the skills necessary for working in a clinical environment as an effective team member. To develop in students an understanding of clinical evaluation and monitoring to assist the medical process. To develop in students problem solving skills in complex human-machine systems. To develop students' communication skills so that they can present their ideas clearly by verbal, written and graphical means. To give students an appropriate introduction to the role of the professional engineer in the community and to explore the social effects of engineering decisions. To prepare students for the changing workplace and changing societal context of engineering by developing their life-long learning skills and flexibility of mind. To integrate the formal course of study with an optional one year period of Industry-Based Learning. To deliver a professionally recognised course of study that will enable graduates to join the profession. Please note Industry-Based Learning is not available to international students.

Campus
Hawthorn

Career Opportunities
Graduates may work in biomedical areas of either the public sector, for example in hospitals, or in the health industry. Alternatively, graduates may choose to work as an electrical engineer.

Professional Recognition
This degree program will produce graduates who have the technological skills and knowledge expected of professional engineers. Graduates will be eligible to apply for graduate membership of Engineers Australia. Graduates from the Biomedical Engineering degree are eligible for membership of the Australasian College of Physical Scientists and Engineers in Medicine.

Course Duration
Four years full-time (or equivalent part-time) plus an optional year of Industry-Based Learning or a minimum of 12 weeks Professional Engineering Experience.

Course Structure
This course will operate under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four units of study, each worth 12.5 credit points, will generally be taken each semester. The typical student’s average weekly workload during semester is therefore expected to be fifty hours. Total student contact hours, including lectures, classes, tutorials, flexible learning and laboratory and field sessions will vary in different semesters.

Students choose units of study from five Study Groups:
- Biomedical Engineering (BME) Core Studies
- Software Engineering Studies
- Technical (BME) Studies
- Specialist Technical (BME) Studies
- Management and Business Studies

According to the following rules, students complete at least 400 credit points made up of:
- Biomedical Engineering (BME) Core Studies (287.5 credit points);
- 25 credit points chosen from Software Engineering Studies;
- 37.5 credit points chosen from Management and Business Studies;
- 12.5 credit points chosen from Specialist Technical (BME) Studies (or Electives Plus Sequence #1); and a further 37.5 credit points chosen from Specialist Technical (BME) Studies and/or Software Engineering Studies (or Electives Plus Sequences #2, #3).

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HES0003 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in...
the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Electives Plus Sequences
Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus Sequences of up to three units from one of the following:
- Design: Process and Strategy
- Effective Communication
- Enterprising Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Elective Plus sequence details.

Units of Study

Biomedical Engineering (BME) Core Studies (all 12.5 credit points)

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<tr>
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<td>Introductory Physiology</td>
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<tr>
<td>HET235</td>
<td>Biomedical Electronics</td>
</tr>
<tr>
<td>HET240</td>
<td>Cellular Biophysics</td>
</tr>
<tr>
<td>HET260</td>
<td>Renal and Respiratory Biophysics</td>
</tr>
<tr>
<td>HET314</td>
<td>Communications Principles</td>
</tr>
<tr>
<td>HET408</td>
<td>Biomedical Imaging and Emerging Technologies</td>
</tr>
<tr>
<td>HET419</td>
<td>Physiological Modelling</td>
</tr>
<tr>
<td>HET550</td>
<td>Design and Development Project 1</td>
</tr>
<tr>
<td>HET556</td>
<td>Design &amp; Development Project 2</td>
</tr>
<tr>
<td>HMS111</td>
<td>Engineering Mathematics 1</td>
</tr>
<tr>
<td>HMS112</td>
<td>Engineering Mathematics 2</td>
</tr>
<tr>
<td>HMS213</td>
<td>Engineering Mathematics 3B</td>
</tr>
<tr>
<td>HMS214</td>
<td>Engineering Mathematics 4B</td>
</tr>
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</table>

Software Engineering Studies (all 12.5 credit points)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>HIT2080</td>
<td>Introduction to Programming</td>
</tr>
<tr>
<td>HIT3161</td>
<td>Technical Software Development</td>
</tr>
<tr>
<td>HIT3172</td>
<td>Object-Oriented Programming in C++</td>
</tr>
</tbody>
</table>

Technical (BME) Studies (all 12.5 credit points)

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>HIT103</td>
<td>Photonics 1</td>
</tr>
<tr>
<td>HIT308</td>
<td>Circuits and Electronics 2</td>
</tr>
<tr>
<td>HIT312</td>
<td>Control and Automation</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td>HET290</td>
<td>Digital Signal and Image Processing</td>
</tr>
<tr>
<td>HET490</td>
<td>Robotic Control</td>
</tr>
<tr>
<td>HIT138</td>
<td>Intelligent Systems</td>
</tr>
</tbody>
</table>

Specialist Technical (BME) Studies (all 12.5 credit points)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>HET219</td>
<td>Neurological Monitoring</td>
</tr>
<tr>
<td>HET227</td>
<td>Neuropsychology</td>
</tr>
<tr>
<td>HET425</td>
<td>Nucleonics and Spectroscopy</td>
</tr>
<tr>
<td>HIT527</td>
<td>Sleep and Attention</td>
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Management and Business Studies (all 12.5 credit points)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBSG200</td>
<td>New Venture Development and Management</td>
</tr>
<tr>
<td>HSS3380</td>
<td>Engineering Management 1</td>
</tr>
<tr>
<td>HSS5380</td>
<td>Engineering Management 2</td>
</tr>
</tbody>
</table>

Recommended Study Sequence

Stage 1

Semester 1
- HET202 | Digital Electronics Design
- HET240 | Cellular Biophysics
- HIT3181 | Technical Software Development
- HMS213 | Engineering Mathematics 3B

Semester 2
- HET230 | Cardiovascular Biophysics
- HET235 | Biomedical Electronics
- HET260 | Renal and Respiratory Biophysics
- HMS214 | Engineering Mathematics 4B
- HES0003 | Careers in the Curriculum

Stage 2

Semester 1
- HEW050 | Industry-Based Learning (Placement 1)* Optional
- HEW055 | Industry-Based Learning (Placement 2)* Optional

Semester 2
- HET128 | Physics 2
- HET408 | Biomedical Imaging and Emerging Technologies

Specialist Technical (BME) Studies (choose one)
Management and Business Studies (choose one)

Stage 3

Semester 1
- HIT214 | Circuits and Electronics 1
- HIT226 | Sensory Systems
- HIT232 | Embedded Microcontrollers
- HIT419 | Physiological Modelling

Stage 5

Semester 1
- HIT314 | Communications Principles
- HET550 | Design and Development Project 1

Software Engineering or Technical (BME) Studies (choose one)
Management and Business Studies (choose one)
Bachelor of Engineering (Civil Engineering) [C050]

Civil engineering deals with the design, construction and improvement of the built environment. Civil engineers provide the technical expertise and management skills to plan, design, construct, and maintain such facilities as buildings, bridges, dams, water supply systems, waste treatment systems, road and rail networks, air and sea ports.

Civil engineering offers a creative and rewarding career for men and women in many different areas which are essential to modern civilisation. Currently career prospects for civil engineers are good, both in Australia and overseas. Because civil engineers are responsible for many of Australia's essential services, they will continue to be needed in considerable numbers for the foreseeable future.

Aims & Objectives

The Civil Engineering degree course sets out to:

- Educate and develop students to understand the fundamentals of engineering and science;
- Provide students with the technical skills required, and to give them an appreciation for the history of engineering and their chosen discipline;
- Enable students to be literate, highly numerate and competent in all aspects of computer aided engineering with an understanding of the nature of creativity, innovation and enterprise, whilst being able to develop solution strategies and manage complex projects.

Campus

Hawthorn, Sarawak

Career Opportunities

Civil engineers work as planners, designers, construction managers, administrators, investigation and research engineers and consultants. They work for public authorities, municipalities, consulting firms and industry, or are self-employed.

Civil engineering is also an excellent preparation for many general managerial positions in business and industry, not directly related to civil engineering.

Professional Recognition

Graduates are eligible to apply for membership of Engineers Australia.

Course Duration

Four years full-time (or equivalent part-time) plus an optional year of Industry-Based Learning or a minimum of 12 weeks Professional Experience in Engineering.

Course Structure

Most engineering degree students follow a common first year program. This gives flexible entry into the various engineering degree majors, and allows the choice of degree course to be deferred until the end of the first year.

Careers in the Curriculum (CIC)

In addition, students must complete a compulsory unit of study HES00009 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2017 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects

As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Majors/Minors & Specialisations

Minor Streams

Construction Management
HES6793

Environmental Sustainability in Construction
HES6176

Project Management
HES6791

Construction Site Operations
HES6795

Risk Management
HES6720

Risk Perception and Analysis
HES6721

Quantitative Risk and Modelling
HES6722

New Ventures Development and Management
HBSC200

Students must complete 37.5 credit points from any one of the above engineering minor streams to be eligible for a minor.

Electives Plus Sequences

Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline. Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design, Process and Strategy
- Effective Communication
- Enterprising Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Units of Study

Foundation Studies

HET000 Professional Engineering
HES1115 Sustainable Design
HES1125 Mechanics of Structures
A study score of at least 25 in Mathematical Methods (either).

Stage 1

**Semester 1**
- HES1125 Engineering Mathematics 1
- HES1130 Civil Engineering Project
- HES2120 Structural Mechanics
- HES2125 Design of Concrete Structures
- HET124 Energy and Motion
- HES2126 Fluid Mechanics 1
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HMS215 Engineering Mathematics 3C

**Semester 2**
- HES1125 Engineering Mathematics 1
- HES2120 Structural Mechanics
- HES2125 Design of Concrete Structures
- HET124 Energy and Motion
- HES2126 Fluid Mechanics 1
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HMS215 Engineering Mathematics 3C

**Stage 3**

**Semester 1**
- HES1125 Engineering Mathematics 1
- HES2120 Structural Mechanics
- HET124 Energy and Motion
- HES2126 Fluid Mechanics 1
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HMS215 Engineering Mathematics 3C

**Stage 4**

**Semester 1**
- HEW055 Industry-Based Learning (Placement 2)
- HES3120 Infrastructure Design Project
- HES3121 Design of Steel Structures
- HES3125 Design of Concrete Structures
- HES3130 Design of Wood Structures
- HES3140 Road Engineering
- HES3150 Geotechnical Engineering
- HES3160 Geotechnical Engineering
- HES3380 Engineering Management 1
- HEW055 Industry-Based Learning (Placement 2)

**Stage 5**

**Semester 1**
- HES1125 Engineering Mathematics 1
- HES2120 Structural Mechanics
- HET124 Energy and Motion
- HES2126 Fluid Mechanics 1
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HMS215 Engineering Mathematics 3C

**Plus one Elective**

**Plus one Elective**

Note:
- Units of Study marked with ** can be replaced by HBSG200 New Venture Development and Management.
- **Elective to be chosen from Specialist Studies or an Electives Plus Sequence (see above)**
- In addition to the above sequence, the successful completion of HED400 Professional Experience in Engineering is required for the award of the above degree and can be taken at any stage of the course.
- The optional Industry-Based Learning (IBL) program is not available to international students.

**Entry Requirements**

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and a study score of at least 25 in Mathematical Methods (either).

Selection mode: ENTER and two-stage process with a middle-band of approximately 20%.

Middle-band: Re-ranking based on study scores in specialist mathematics, physics and either chemistry or information technology: information systems.

Applicants who have successfully completed a Certificate or Diploma at a Victorian Institute of TAFE, or reached an approved equivalent standard will also be eligible for consideration for admission. However, this does not guarantee a place.

Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and normally have at least five years related engineering work experience, may be considered for admission if they can demonstrate engineering skills and knowledge.

2007 Round 1 Clearly-In ENTER: 75.25 (CSP), nil (Fee)
Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34691 (CSP), 34692 (Fee), 34693 (Int. Fee).
For further information, visit the VTAC website at: www.vtac.edu.au

Applicants who believe they will receive an ENTER of at least 96.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swin.edu.au/scholarships

Bachelor of Engineering (Electrical and Electronic Engineering) [E667]
The Bachelor of Engineering in Electrical and Electronic Engineering is a broad-based course and develops in students a mastery of the basic engineering principles underlying electrical and electronic engineering with emphasis on electronic and micro-controllers-based design, operation and control of electrical machines, power system generation and distribution, systems modelling, automation and control. The program develops students' abilities to analyze, identify, formulate and generate specific solutions in the broad field of electrical and electronic engineering.

Aims & Objectives
• To develop in students a mastery of a wide spectrum of basic engineering principles underlying Electrical and Electronic Engineering.
• To develop in students a thorough understanding of a broad range of engineering methods and techniques, and competence in their application, so that students are able to comprehend and analyze problems and obtain satisfactory design solutions which, where appropriate, show originality and resourcefulness.
• To develop students' communication skills so that they can present their ideas clearly by verbal, written and graphical means.
• To give students an appropriate introduction to the role of the professional engineer in the community and to explore the social effects of engineering decisions.
• To prepare students for the changing workplace and changing societal context of engineering by developing their life-long learning skills and flexibility of mind.
• To integrate the formal course of study with an optional one year period of Industry-Based Learning*.
• To deliver a professionally recognised course of study that will enable graduates to join the professional organisation of Engineers Australia (IEAust) as graduate members.
* Please note Industry-Based Learning is not available to International students.

Campus
Hawthorn, Sarawak

Career Opportunities
Graduates can take up careers in a wide spectrum of industries including, Automotive, Robotics, Aerospace, Power Industry, Electronic appliances, Manufacturing and Industrial Research. Contributions can be made to these industries in a variety of roles including design engineer, project planner, product designer and project manager.

Professional Recognition
Graduates are eligible to apply for membership of Engineers Australia.

Course Duration
Four years full-time (or equivalent part-time) plus an optional year of Industry-Based Learning or a minimum of 12 weeks Professional Experience in Engineering.

Course Structure
Students will normally be enrolled in the Recommended Study Sequence (see below) and must successfully complete a minimum of 400 credit points. In all cases, students must choose units of study from Study Groups according to the following Rules, subject to timetable constraints and prerequisite studies being met.

The Course Panel has the authority to approve additional elective studies for particular students. Such approvals will be advised to the FEIS Academic Committee.

Students choose units of study from five Study Groups:
• Engineering (E&E) Core Studies
• Software Engineering Studies
• Technical (E&E) Studies
• Specialist Technical (E&E) Studies
• Management and Business Studies

According to the following rules, students must complete 400 credit points made up of:
• Core Electrical & Electronics Studies (275 credit points);
• Core Software Engineering Studies (25 credit points);
• Management and Business Studies (25 credit points);
• Specialist Technical (E&E) Studies (62.5 credit points); and a further
• Technical (E&E) Studies (12.5 credit points).

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study (see below) and must undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Majors/Minors & Specialisations

Minor Streams

Biomedical Engineering
HET102 Introductory Physiology
HET226 Sensory Systems
HET408 Biomedical Imaging and Emerging Technologies

Mechatronics Design
HET344 Mechatronics Systems Design
HES5250 Robot System Design
HET499 Robotic Control

Computer Science and Software Engineering

Option 1: Database Oriented Stream
HT1402 Database Analysis and Design
HT2420 Database Management Systems
HT2308 Software Development Practices

Option 2: Software Engineering Stream
HT2308 Software Development Practices
HT3309 Software Project Practices and Management
HT3310 Software Architectures and Design

Option 3: Programming Stream
HT2308 Software Development Practices
HT3037 Programming in Java
HT3138 Intelligent Systems

Electives Plus Sequences
Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
• Design, Process and Strategy
• Effective Communication
• Enterprise Marketing
• Establishing and Running a Business
• Information Orientation and Knowledge Management
• Language Practice and Culture
• Multimedia & Web Development
• Sustainability
• The Networked Economy

Swinburne University of Technology | Undergraduate Course Handbook 2008
• Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Units of Study

Engineering (E&E) Core Studies (all 12.5 credit points)

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Unit Title</th>
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</thead>
<tbody>
<tr>
<td>HET124</td>
<td>Energy and Motion</td>
</tr>
<tr>
<td>HET1000</td>
<td>Professional Engineering, or</td>
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<tr>
<td>HET105</td>
<td>Professional Skills - Telecommunications</td>
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<tr>
<td>HET182</td>
<td>Electronic Systems</td>
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<tr>
<td>HET1005</td>
<td>Engineering Project</td>
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<tr>
<td>HET202</td>
<td>Digital Electronics Design</td>
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<tr>
<td>HET214</td>
<td>Circuits and Electronics 1</td>
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<tr>
<td>HET228</td>
<td>Electrical Actuators and Sensors</td>
</tr>
<tr>
<td>HET232</td>
<td>Embedded Microcontrollers</td>
</tr>
<tr>
<td>HET314</td>
<td>Communications Principles</td>
</tr>
<tr>
<td>HET308</td>
<td>Circuits and Electronics 2</td>
</tr>
<tr>
<td>HET312</td>
<td>Control and Automation</td>
</tr>
<tr>
<td>HET316</td>
<td>Electromagnetic Waves</td>
</tr>
<tr>
<td>HET326</td>
<td>Electrical Power Systems</td>
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<tr>
<td>HET378</td>
<td>Integrated Circuit Design</td>
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<tr>
<td>HET489</td>
<td>Robotic Control</td>
</tr>
<tr>
<td>HET500</td>
<td>Design and Development Project 1</td>
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<tr>
<td>HET506</td>
<td>Design &amp; Development Project 2</td>
</tr>
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<td>HET509</td>
<td>Power Electronics</td>
</tr>
<tr>
<td>HES111</td>
<td>Engineering Mathematics 1</td>
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<tr>
<td>HES112</td>
<td>Engineering Mathematics 2</td>
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<td>HSM213</td>
<td>Engineering Mathematics 3B</td>
</tr>
<tr>
<td>HSM214</td>
<td>Engineering Mathematics 4B</td>
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</table>

Software Engineering Studies (all 12.5 credit points)

Choose two:

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Unit Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT2080</td>
<td>Introduction to Programming</td>
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<tr>
<td>HIT3181</td>
<td>Technical Software Development</td>
</tr>
</tbody>
</table>

Technical (E&E) Studies (all 12.5 credit points)

Choose one:

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Unit Title</th>
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</thead>
<tbody>
<tr>
<td>HES1230</td>
<td>Materials and Processes</td>
</tr>
<tr>
<td>HES2330</td>
<td>Thermodynamics 1</td>
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</table>

Specialist Technical (E&E) Studies (all 12.5 credit points)

Choose two of:

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Unit Title</th>
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</thead>
<tbody>
<tr>
<td>HET309</td>
<td>VLSI Design: Analogue and Digital Circuit Design</td>
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<tr>
<td>HET427</td>
<td>Electrical Safety</td>
</tr>
<tr>
<td>HET517</td>
<td>RF Electronics Design</td>
</tr>
<tr>
<td>HET550</td>
<td>Power System Operation and Control</td>
</tr>
</tbody>
</table>

Choose three of:

<table>
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<tbody>
<tr>
<td>HET329</td>
<td>Digital Signal and Image Processing, or</td>
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<td>HET416</td>
<td>Computer Systems Engineering, or</td>
</tr>
<tr>
<td>HET515</td>
<td>Advanced Embedded Systems, or</td>
</tr>
<tr>
<td>HET3172</td>
<td>Object-Oriented Programming in C++</td>
</tr>
<tr>
<td>HET309</td>
<td>VLSI Design: Analogue and Digital Circuit Design</td>
</tr>
<tr>
<td>HET315</td>
<td>Communications Information Theory</td>
</tr>
<tr>
<td>HET333</td>
<td>Security Engineering</td>
</tr>
<tr>
<td>HET344</td>
<td>Mechatronics Systems Design</td>
</tr>
<tr>
<td>HET411</td>
<td>VLSI Fabrication</td>
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<tr>
<td>HET3128</td>
<td>Intelligent Systems</td>
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</tbody>
</table>

OR 37.5 credit points from a minor stream or one of the Elective Plus sequences (see above)

Management and Business Studies (all 12.5 credit points)

Choose two:

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Unit Title</th>
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<tbody>
<tr>
<td>HES3380</td>
<td>Engineering Management 1</td>
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<td>HES5380</td>
<td>Engineering Management 2</td>
</tr>
<tr>
<td>HBSG200</td>
<td>New Venture Development and Management</td>
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</table>

Recommended Study Sequence

Stage 1

Semester 1

<table>
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<tr>
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<th>Unit Title</th>
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<tbody>
<tr>
<td>HET100</td>
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<tr>
<td>HET105</td>
<td>Professional Skills - Telecommunications</td>
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<tr>
<td>HET124</td>
<td>Energy and Motion</td>
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<tr>
<td>HES111</td>
<td>Engineering Mathematics 1</td>
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<tr>
<td>HIT2080</td>
<td>Introduction to Programming</td>
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</table>

Semester 2

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Unit Title</th>
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<tr>
<td>HET1005</td>
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<td>Electronic Systems</td>
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<td>Engineering Mathematics 2</td>
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<td>HSM239</td>
<td>Technical Software Development</td>
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Stage 2

Semester 1

<table>
<thead>
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<th>Unit Code</th>
<th>Unit Title</th>
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<td>Communications Principles</td>
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<td>HES1003</td>
<td>Careers in the Curriculum</td>
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Semester 2

<table>
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<th>Unit Title</th>
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<tbody>
<tr>
<td>HED500</td>
<td>Industry-Based Learning (Placement 1) # Optional</td>
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Stage 3

Semester 1

<table>
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<th>Unit Code</th>
<th>Unit Title</th>
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<tbody>
<tr>
<td>HED555</td>
<td>Industry-Based Learning (Placement 2) # Optional</td>
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Semester 2

<table>
<thead>
<tr>
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<th>Unit Title</th>
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<tr>
<td>HET306</td>
<td>Electrical Power Systems</td>
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<tr>
<td>HET489</td>
<td>Robotic Control</td>
</tr>
<tr>
<td>HET559</td>
<td>Power Electronics</td>
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<td>Management and Business Studies (choose one)</td>
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Stage 4

Semester 1

<table>
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<th>Unit Code</th>
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<tbody>
<tr>
<td>HED555</td>
<td>Industry-Based Learning (Placement 2) # Optional</td>
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Stage 5

Semester 1

<table>
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<tr>
<th>Unit Code</th>
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<tbody>
<tr>
<td>HET550</td>
<td>Design &amp; Development Project 2</td>
</tr>
<tr>
<td>HED555</td>
<td>Specialist (E&amp;E) studies (choose one)</td>
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<td>HED555</td>
<td>Specialist (E&amp;E) studies (choose one)</td>
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<tr>
<td>HED555</td>
<td>Specialist (E&amp;E) studies (choose one)</td>
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</tbody>
</table>

Note: In addition to the above sequence, the successful completion of HED400 Professional Experience in Engineering is required for the award of the above degree and can be taken at any stage of the course.

# Please note that Industry-Based Learning is not available to international students.
Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and a study score of at least 25 in Mathematical Methods (either).
Selection mode: ENTER and two-stage process with a middle-band of approximately 20%.
Middle-band: Re-ranking based on study scores in specialist mathematics, physics and either chemistry or information technology: information systems.
2007 Round 1 Clearly-In ENTER: 78.65 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34251 (CSP), 34252 (Fee), 34253 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au

Bachelor of Engineering (Electronics and Computer Systems) [E051]
The Bachelor of Engineering in Electronics and Computer Systems engineering prepares graduates for professions characterized by the growth of new technologies and new opportunities. This course provides professional career opportunities in a range of dynamic, high-technology areas including the overlapping fields of computer hardware and software, telecommunications, electronics and computer systems.
Swinburne also offers double degrees in Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business and Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
The course has the following objectives:
• To develop in students a mastery of a wide spectrum of basic engineering principles underlying electronics and computer systems engineering;
• To develop in students a thorough understanding of a broad range of engineering methods and techniques, and competence in their application, so that students are able to comprehend and analyse problems and obtain satisfactory design solutions which, where appropriate, show originality and resourcefulness;
• To develop students' communication skills so that they can present their ideas clearly by verbal, written and graphical means;
• To give students an appropriate introduction to the role of the professional engineer in the community and to explore the social effects of engineering decisions;
• To prepare students for the changing workplace and changing societal context of engineering by developing their life-long learning skills and flexibility of mind;
• To integrate the formal course of study with an optional one year period of industry based learning*; and
• To deliver a professionally recognized course of study which will enable graduates to join the Institution of Engineers Australia as graduate members.

* Please note that industry based learning is not available to international students.

Campus
Hawthorn, Sarawak

Career Opportunities
Graduates can take up careers in a wide spectrum of industries including, telecommunications, Automotive, Robotics, Power industry, Aerospace, Electronic appliances, Manufacturing and Chip Design and Industrial Research. Contributions can be made to these industries in a variety of roles including design engineer, software engineer, project planner, product designer and project manager.

Professional Recognition
Graduates are eligible to apply for membership of Engineers Australia.

Course Duration
Four years full-time (or equivalent part-time) plus an optional year of Industry-Based Learning or a minimum of 12 weeks Professional Experience in Engineering.

Course Structure
This course operates under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four units of study, each worth 12.5 credit points, will generally be taken each semester. The typical student’s average weekly workload during semester is therefore expected to be fifty hours. Total student contact hours, including lectures, classes, tutorials, flexible learning and laboratory and field sessions will vary in different semesters.

Students choose units of study from five Study Groups:
• Engineering (E&CS) Core Studies
• Software Engineering Studies
• Technical (E&CS) Studies
• Specialist Technical (E&CS) Studies
• Management and Business Studies

According to the following rules, students complete at least 400 credit points made up of:
• Engineering (E&CS) Core Studies (275 credit points)
• Software Engineering Studies (37.5 credit points)
• 37.5 credit points chosen from Specialist Technical (E&CS) Studies, and a further
• 25 credit points chosen from Management and Business Studies
• 25 credit points chosen from Technical (E&CS) Studies and/or Specialist Technical (E&CS) Studies.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HES0003 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Majors/Minors & Specialisations
Minor Streams
Biomedical Engineering
HET102 Introductory Physiology
HET226 Sensory Systems
HET408 Biomedical Imaging and Emerging Technologies

Mechatronics Design
HET344 Mechatronics Systems Design
HES5250 Robot System Design
HET499 Robotic Control

Computer Science and Software Engineering
Option 1: Database Oriented Stream
HIT1402 Database Analysis and Design
HIT2420 Database Management Systems
HIT2308 Software Development Practices
Option 2: Software Engineering Stream
HIT2308 Software Development Practices
HIT3309 Software Project Practices and Management
HIT3310 Software Architectures and Design
Option 3: Programming Stream
HIT2308 Software Development Practices
HIT3037 Programming in Java
HIT3138 Intelligent Systems

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Electives Plus Sequences

Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Entrepreneurial Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to sufficient enrolments, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Units of Study

Engineering (E&CS) Core Studies (all 12.5 credit points)

- HET1000 Professional Engineering
- HET1005 Engineering Project
- HET124 Energy and Motion
- HET182 Electronic Systems
- HET202 Digital Electronics Design
- HET204 Circuits and Electronics 1
- HET232 Embedded Microcontrollers
- HET208 Circuits and Electronics 2
- HET312 Control and Automation
- HET314 Communications Principles
- HET316 Electromagnetic Waves
- HET329 Digital Signal and Image Processing
- HET378 Integrated Circuit Design
- HET416 Computer Systems Engineering
- HET513 Design of DSP Architectures
- HET515 Advanced Embedded Systems
- HET550 Design and Development Project 1
- HET556 Design & Development Project 2
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HMS213 Engineering Mathematics 3B
- HMS214 Engineering Mathematics 4B

Software Engineering Studies (all 12.5 credit points)

- HIT2980 Introduction to Programming
- HIT3181 Technical Software Development
- HIT3172 Object-Oriented Programming in C++

Technical (E&CS) Studies (all 12.5 credit points)

- HES5250 Robot System Design
- HET228 Electrical Actuators and Sensors
- HET315 Communications Information Theory
- HET344 Mechatronics Systems Design
- HET417 Photonics and Fibre Optics
- HET452 Wireless Communications
- HET469 Robotic Control
- HET559 Power Electronics
- HIT216 Usability

Specialist Technical (E&CS) Studies (all 12.5 credit points)

- HET209 Fibre Optics Communication & Optical Instrumentation
- HET309 VLSI Design: Analogue and Digital Circuit Design
- HET336 Network Modelling and Analysis
- HET406 Multimedia Data Processing
- HET411 VLSI Fabrication
- HET517 RF Electronics Design
- HIT214 Operating Systems (Linux)
- HIT3138 Intelligent Systems

Or 37.5 credit points from one of the Elective Plus sequences or 37.5 credit points from a minor stream (see above)

Management and Business Studies (all 12.5 credit points)

- HBSG200 New Venture Development and Management
- HESS380 Engineering Management 1
- HESS380 Engineering Management 2

Note:
- Not all units of study are offered all semesters. Some may be only offered subject to sufficient enrolments.
- The Course Panel has the authority to approve additional elective studies for particular students.
- Such approvals will be advised to the Faculty Academic Committee.

Recommended Study Sequence

Stage 1

Semester 1

- HET1000 Professional Engineering
- HET124 Energy and Motion
- HIT2980 Introduction to Programming
- HMS111 Engineering Mathematics 1

Semester 2

- HET1005 Engineering Project
- HET182 Electronic Systems
- HIT3181 Technical Software Development
- HMS112 Engineering Mathematics 2

Stage 2

Semester 1

- HET202 Digital Electronics Design
- HET314 Communications Principles
- HIT3172 Object-Oriented Programming in C++
- HMS213 Engineering Mathematics 3B

Semester 2

- HIT214 Circuits and Electronics 1
- HET232 Embedded Microcontrollers
- HIT329 Digital Signal and Image Processing
- HMS214 Engineering Mathematics 4B
- HES3003 Careers in the Curriculum

Stage 3

Semester 1

- HET308 Circuits and Electronics 2
- HET312 Control and Automation
- HET316 Electromagnetic Waves
- HIT318 Integrated Circuit Design

Semester 2

- HEW650 Industry-Based Learning (Placement 1)* Optional

Stage 4

Semester 1

- HEW650 Industry-Based Learning (Placement 2)* Optional

Semester 2

- HET416 Computer Systems Engineering
- Management and Business Studies (choose one)
- Technical/Specialist Technical E&CS Studies (choose two)*
Stage 5
Semester 1
HET515 Advanced Embedded Systems
HET550 Design and Development Project 1
Management and Business (choose one)
Technical/Specialist Technical E&CS Studies (choose one)*

Semester 2
HET513 Design of DSP Architectures
HET555 Design & Development Project 2
Technical/Specialist Technical E&CS Studies (choose two)*

* At least 25 CP must be undertaken from the Specialist Technical (E&CS) Studies Group.

Note: In addition to the above sequence, the successful completion of HED400 Professional Experience in Engineering is required for the award of the above degree and can be taken at any stage of the course.

Please note that Industry-Based Learning is not available to international students.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and a study score of at least 25 in Mathematical Methods (either).
Selection mode: ENTER and two-stage process with a middle-band of approximately 20%. Middle-band: Re-ranking based on study scores in specialist mathematics, physics and either chemistry or information technology: information systems.
Applicants who have successfully completed an Advanced Certificate or Associate Diploma at a Victorian Institute of TAFE, or reached an approved equivalent standard will also be eligible for consideration for admission.
However, this does not guarantee a place.
2007 Round 1 Clearly-In ENTER: n/a (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34591 (CSP), 34592 (Fee), 34593 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au

Bachelor of Engineering (Mechanical Engineering) [HE5050]
Mechanical engineering deals with the design, manufacture and maintenance of machine components and systems from small domestic products to highly complex vehicle and aerospace systems. Mechanical engineers need to respond to a changing world dominated by advances in technology. Their combination of broad engineering knowledge and detailed expertise in specialist fields enables them to harness these changes.

Aims & Objectives
The Mechanical Engineering course sets out to:
• Develop skills in the design, development and testing of mechanical products and systems;
• Provide a thorough grounding in the engineering, physical and mathematical sciences;
• Develop an appreciation of the management of engineering activities;
• Enhance the learning experience through Industry-Based Learning (IBL);
• Develop the ability to undertake life-long professional learning;
• Develop an awareness of the professional responsibility for a sustainable environment.

Campus
Hawthorn, Sarawak

Career Opportunities
Employment may be found in many areas of industry and commerce including: automotive, vehicle, transport, power, manufacturing, materials processing, appliance production, mechanical building services, mining and raw material conversion.

The mechanical engineer's contributions can include design, development, testing, innovation, project management, planning, research, quality control, and engineering management.

Professional Recognition
Graduates are eligible to apply for membership of Engineers Australia.

Course Duration
Four years full-time (or equivalent part-time) plus an optional year of Industry-Based Learning or a minimum of 12 weeks Professional Experience in Engineering.

Course Structure
Most engineering degree students follow a common first year program. This gives flexible entry into the various engineering degree majors, and allows the choice of degree course to be deferred to the end of the first year.
In addition to the common first year, mechanical engineering students follow a common program with the manufacturing engineering stream for a further three semesters, covering the basic engineering sciences and essential preparatory material for Industry-Based Learning (IBL). Note that the optional IBL program is not available to international students.

Students then elect to take major studies in either mechanical or manufacturing engineering. At this advanced level students may select electives that will allow flexibility to pursue a range of personal interests and/or embrace specialisations.

The structure of the course is comprised of clusters (groups) of units of study reflecting different skills and knowledge to be acquired. The available units of study for completion of the above degrees are classified into five study groups:
• Foundation Studies
• Technical Studies
• Design and Projects
• Management and Business Studies
• Specialist Studies

Students will normally be enrolled in a Recommended Study Sequence and must successfully complete a minimum of 400 credit points in addition to the successful completion of HED400 Professional Experience in Engineering. In all cases, students must choose units of study from the following study groups according to the following rules (subject to timetable constraints and prerequisite studies being met):

Students complete at least 400 credit points made up of:
• 125 credit points of Foundation Studies
• 137.5 credit points of Technical Studies
• 75 credit points from Design and Projects Studies
• 25 credit points chosen from Management and Business Studies
• 37.5 credit points chosen from Specialist Studies

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HES50011 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Majors/Minors & Specialisations

Minors
The eligibility requirement for a minor is to complete at least 37.5 credit points from any one of the following minor streams:
• Automotive Engineering
• Manufacturing Engineering
• Biomedical Engineering
• Aviation Technology
• Economics
• Manufacturing Management
Electives Plus Sequences

Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Enterprise and Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs. Students double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Units of Study

Foundation Studies

- HES1125 Mechanics of Structures
- HES1220 Materials and Processes
- HES1300 Robotics and Mechatronics Project 1
- HES1305 Robotics and Mechatronics Project 2
- HET124 Energy and Motion
- HET182 Electronic Communication
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HMS211 Engineering Mathematics 3A
- HMS212 Engineering Mathematics 4A
- Technical Studies
  - HES2120 Structural Mechanics
  - HES2281 Materials and Manufacturing 1
  - HES2310 Machine Dynamics 1
  - HES2330 Thermodynamics 1
  - HES2340 Fluid Mechanics 1
  - HES2381 Materials and Manufacturing 2
  - HES3310 Control Engineering
  - HES3430 Thermodynamics 2
  - HES3510 Machine Dynamics 2
  - HES3520 Solid Mechanics
  - HES3540 Fluid Mechanics 2
- Design and Projects
  - HES2146 Computer Aided Engineering
  - HES3350 Machine Design
  - HES3360 Human Factors
  - HES4350 Mechanical Systems Design
- Management and Business Studies
  - HES3380 Engineering Management 1
  - HES3380 Engineering Management 2
  - HES3500 New Venture Development and Management
- Specialist Studies
  - HBH222 Organisation Design & Technology
  - HBP228 Manufacturing Management
  - HBP336 Quality Management in Manufacturing
  - HBP337 Managing Technology and Innovation
  - HES2350 Robot System Design
  - HES3350 Product Design
  - HES3360 Automotive Engineering Project
  - HES3370 Automotive Electronics
  - HET102 Introductory Physiology
  - HET226 Sensory Systems
  - HET231 Perception and Motor Systems
  - HET408 Biomedical Imaging and Emerging Technologies
  - HIT2308 Software Development Practices
  - HIR505 Robotics in Manufacturing
  - HIR507 Advanced Manufacturing Processes I
  - HIR509 Computer Modelling, Analysis and Visualisation
  - HIR511 Advanced Manufacturing Processes II
  - HMS411 Engineering Mathematics 5A

37.5 credit points from one of the single three-credit Project Elective Sequences.

The program panel has the authority to approve additional specialist studies choices for individual students.

Recommended Study Sequence

Stage 1

Semester 1
- HES1300 Robotics and Mechatronics Project 1
- HES1220 Materials and Processes
- HET124 Energy and Motion
- HMS111 Engineering Mathematics 1

Semester 2
- HES1125 Mechanics of Structures
- HES1305 Robotics and Mechatronics Project 2
- HET182 Electronic Systems
- HMS112 Engineering Mathematics 2

Stage 2

Semester 1
- HMS211 Engineering Mathematics 3A
- HES2330 Thermodynamics 1
- HES2146 Computer Aided Engineering

Semester 2
- HMS212 Engineering Mathematics 4A
- HES2340 Fluid Mechanics 1
- HES2310 Machine Dynamics 1
- HES2281 Materials and Manufacturing 1
- HES3001 Careers in the Curriculum

Stage 3

Semester 1
- HES3350 Machine Design
- HES3310 Control Engineering
- HES3281 Materials and Manufacturing 2
- HES3380 Engineering Management 1**

Semester 2
- HEW050 Industry-Based Learning (Placement 1)# Optional

Stage 4

Semester 1
- HEW085 Industry-Based Learning (Placement 2)# Optional

Stage 5

Semester 1
- HES3102 Research Project
HES5310 Machine Dynamics 2
HES360 Human Factors
Elective

Semester 2
HES390 Engineering Management 2**
HES5103 Advanced Research Project
HES5340 Fluid Mechanics 2
HES350 Product Design

Notes:
• ** These units of study can be exchanged for New Venture Development and Management (HSSG200)
• ** Recommended electives. Electives can also be chosen from the list of specialist studies or from an Electives Plus sequence.
• #HES0001: Careers in the Curriculum is compulsory for students commencing in 2007 and optional for pre-2007 students. It is offered in both semesters but is only required to be undertaken once. Preference is given to students in second semester of second year or first semester of third year.
• In addition to the above sequence, the successful completion of HED400 Professional Experience in Engineering, is required for the award of the above degree and can be taken at any stage of the course.
• # Industry-Based Learning is not available to international students.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and a study score of at least 25 in Mathematical Methods (either). Selection mode: ENTER and two-stage process with a middle-band of approximately 20%.

Middle-band: Re-ranking based on study scores in specialist mathematics, physics and either chemistry or information technology: information systems. Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and normally have at least five years related work experience, may be considered for admission if they can demonstrate motivation and ability to succeed.

2007 Round 1 Clearly-in ENTER: 75.25 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34611 (CSP), 34612 (Fee), 34613 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swin.edu.au/scholarships

Bachelor of Engineering (Product Design Engineering) [PDE560]
Product Design engineering is a combination of two traditionally separate fields each with its own strengths: engineering with its scientific material and manufacturing knowledge and industrial design with its human-centred approach. These two disciplines have been brought together to produce a new graduate who will develop competitive products in both quality and design and manufacture of domestic products or the automobile industry. Their role is to enhance their employability and career prospects.

Aims & Objectives
The main aim of the course is to educate a new generation of creative product design engineers with the knowledge, skills and attitudes that make them valuable members of any team working with product design, development and production. This aim is to be achieved by providing a project driven course that covers the required disciplines of creative design in parallel with studies in engineering science, materials and manufacturing processes and management of innovation.

The course objectives are to:
• Produce graduates with a sound knowledge of the principles and processes of product design.
• Develop the ability to design products with a sound engineering base.
• Develop student knowledge and understanding of traditional and innovative processes in designing and developing successful products for competitive markets.
• Educate students in making suitable material selection based on human/machine/manufacturing requirements.
• Produce graduates with sound management and professional skills that will be able to incorporate social, environmental, legal and ethical issues in their product design.

Campus
Lilydale and Prahran (attendance at both campuses is required)

Career Opportunities
Graduates will find employment in industries dealing in the design, development and manufacture of domestic products or the automobile industry. Their role will be primarily in the area of design, innovation, project management and manufacturing.

Professional Recognition
Graduates are eligible to apply for membership of Engineers Australia and the Design Institute of Australia

Course Structure
Each year of study has two semesters. Normally, four units of study of 12.5 credit points each are studied in each semester. The total number per semester is 50 credit points. Eight semester of academic study plus an optional and additional year of Industry-Based Learning or twelve weeks compulsory, approved industrial experience is required to complete this course.

Careers in the Curriculum
In addition to the above, students must complete a compulsory unit of study HES0002 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Majors/Minors & Specialisations
Minor Streams
Automotive Engineering
HES5360 Automotive Engineering Project
HIR509 Computer Modelling, Analysis and Visualisation
HES5370 Automotive Electronics
Manufacturing Engineering
HIR505 Robotics in Manufacturing
HIR507 Advanced Manufacturing Processes I
HIR509 Computer Modelling, Analysis and Visualisation
HIR311 Advanced Manufacturing Processes II
Industrial Engineering
HIR505 Technology Management
HIR316 Manufacturing Management Systems
HIR518 Systems Modelling
HIR521 Design of Physical Facilities
Biomedical Engineering
HET102 Introductory Physiology
HET226 Sensory Systems
Students must complete 37.5 credit points from any one of the above engineering minor streams to be eligible for a minor.

Electives Plus Sequences

Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Enterprise & Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timefilament constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Units of Study

Foundation Studies (all 12.5 credit points)
- HD3D003 Product Design Studio 1
- HD3D004 Product Communication
- HD3D005 Communication Technology 1
- HES1125 Mechanics of Structures
- HES1230 Materials and Processes
- HET124 Energy and Motion
- HET182 Electronic Systems
- HMS111P Engineering Mathematics 1P
- HMS112P Engineering Mathematics 2P

Technical Studies (all 12.5 credit points)
- HES2120 Structural Mechanics
- HES2281 Materials and Manufacturing 1
- HES2310 Machine Dynamics 1
- HES2330 Thermodynamics 1
- HES2340 Fluid Mechanics 1
- HES3350 Machine Design
- HES3360 Human Factors
- HES2281 Materials and Manufacturing 2
- HES4250 Design for Manufacture

Design and Projects
- HD3D006 Communication Technology 2
- HDPD214 Product Design Engineering 1
- HDPD224 Product Design Engineering 2
- HDPD314 Product Design Engineering 3
- HDPD324 Product Design Engineering 4
- HDPD514 Product Design Engineering 5
- HDPD524 Product Design Engineering 6
- HDPD512 Professional Project 1
- HDPD522 Professional Project 2

Management & Business Studies (all 12.5 credit points)
- HES3380 Engineering Management 1
- HES3381 Engineering Management 2
- HBSG200 New Venture Development and Management

Specialist Studies (all 12.5 credit points)

If students have not selected a Minor Stream or Electives Plus Sequence they must select their Elective+ unit from this list. They must select at least one unit from List A and List B.

List A:
- HBM110 The Marketing Concept
- HBM330 Marketing Innovation Management
- HBP337 Managing Technology and Innovation
- HDPD500 Multimedia
- HCC204 Digital Design
- HCC205 Contemporary Design Issues
- HCC206 Managing Design

List B:
- HES5250 Robot System Design
- HES5350 Product Design
- HES5360 Automotive Engineering Project
- HES5370 Automotive Electronics
- HET102 Introductory Physiology
- HET226 Sensory Systems
- HET231 Perception and Motor Systems
- HET408 Biomedical Imaging and Emerging Technologies
- HIR505 Robotics in Manufacturing
- HIR506 Technology Management
- HIR507 Advanced Manufacturing Processes I
- HIR509 Computer Modelling, Analysis and Visualisation
- HIR511 Advanced Manufacturing Processes II
- HIR516 Manufacturing Management Systems
- HIR518 Systems Modelling

Recommended Study Sequence

Stage 1

Semester 1
- HD3D003 Product Design Studio 1
- HD3D004 Product Communication
- HET124 Energy and Motion
- HMS111P Engineering Mathematics 1P

Semester 2
- HD3D005 Communication Technology 1
- HES1125 Mechanics of Structures
- HES1230 Materials and Processes
- HMS112P Engineering Mathematics 2P

Stage 2

Semester 1
- HD3D006 Communication Technology 2
- HDPD214 Product Design Engineering 1
- HES2120 Structural Mechanics
- HES2330 Thermodynamics 1

Semester 2
- HDPD224 Product Design Engineering 2
- HES2281 Materials and Manufacturing 1
- HES2310 Machine Dynamics 1
- HET192 Electronic Systems

Stage 3

Semester 1
- HDPD314 Product Design Engineering 3
- HES3261 Materials and Manufacturing 2
Bachelor of Engineering (Robotics and Mechatronics) [R050]

This course brings together the complementary disciplines of Robotics and Mechatronics which are founded in the engineering sciences, mathematics and mechanical/electronic engineering. It also addresses management issues including technology management, accounting and law. The course includes the study of biotics and micromachines which have a significant influence on the design of mechatronic systems for an increasing range of applications.

Robots are computer controlled devices which have been used to assist humans in various tasks. While the majority of robots have been used in manufacturing, a recent trend has seen robots used in a variety of applications including space and underwater exploration, medicine and a wide range of service industries. The discipline of robotics embraces the design and operation of these devices and their integration with other systems in the work environment. Mechatronics combines mechanical, electrical, electronic and software engineering in the design, development and control of diverse systems used in a range of industries including manufacturing, medicine and the service industries.

Aims & Objectives

The course aims to develop innovative skills in robotic and mechatronic systems, computing, electronics, mechanical and electrical engineering, in national and international contexts.

Career Opportunities

Graduates can take up careers in a wide spectrum of industries including robotics, airlines, chemical industries, automotive, appliance manufacturing and industrial research. Contributions can be made to these industries in a variety of roles including design engineer, project planner, product designer and project manager.

Professional Recognition

Graduates are eligible to apply for membership of Engineers Australia.

Course Duration

Four years full-time (or equivalent part-time) plus an optional year of Industry-Based Learning or a minimum of 12 weeks Professional Experience in Engineering.

Course Structure

The structure of the course is comprised of clusters (groups) of units of study reflecting different skills and knowledge to be acquired:

- Foundation Studies
- Software Engineering Studies
- Technical Studies
- Specialist Technical Studies
- Management and Business Studies

Students will normally be enrolled in the Recommended Study Sequence (see below) and must successfully complete a minimum of 400 credit points in addition to the successful completion of HED400 Professional Experience in Engineering. In all cases, students must choose units of study from these study groups according to the following rules (subject to timetable constraints and prerequisite studies being met).

Students complete at least 400 credit points made up of:

- 225 credit points from Foundation Studies
- 25 credit points from Software Engineering Studies
- 87.5 credit points from Technical Studies
- 25 credit points from Management and Business Studies
- 37.5 credit points from Specialist Studies

Careers in the Curriculum

In addition to the above, students must complete a compulsory unit of study HES0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.
Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Majors/Minors & Specialisations
Minors
The eligibility requirement for a minor is to complete at least 37.5 credit points from any one of the following minor streams.
• Automotive Engineering
• Manufacturing Management
• Electronics Design Engineering
• Mechanical Design Engineering

Electives Plus Sequences
Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
• Design: Process and Strategy
• Effective Communication
• Enterprise and Management
• Establishing and Running a Business
• Information Orientation and Knowledge Management
• Language Practice and Culture
• Multimedia & Web Development
• Sustainability
• The Networked Economy
• Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Units of Study
Foundation Studies
HES1125 Mechanics of Structures
HES1230 Materials and Processes
HES1300 Robotics and Mechatronics Project 1
HES1305 Robotics and Mechatronics Project 2
HES2120 Structural Mechanics
HES2310 Machine Dynamics 1
HES3350 Machine Design
HES3360 Human Factors
HET124 Energy and Motion
HET162 Electronic Systems
HET202 Digital Electronics Design
HET214 Circuits and Electronics 1
HET232 Embedded Microcontrollers
HET312 Control and Automation
HET329 Digital Signal and Image Processing
HMS111 Engineering Mathematics 1
HMS112 Engineering Mathematics 2
HMS211 Engineering Mathematics 3A

Software Engineering Studies
HIT3181 Technical Software Development
HIT3172 Object-Oriented Programming in C++

Technical Studies
HES5250 Robot System Design
HES5310 Machine Dynamics 2
HET228 Electrical Actuators and Sensors
HET344 Mechatronics Systems Design
HET489 Robotic Control

HET551 Design and Development Project 1
HET557 Design & Development Project 2

Specialist Studies
HES3334 Thermofluid Systems
HES4250 Design for Manufacture*
HES5370 Automotive Electronics
HET102 Introductory Physiology
HET226 Sensory Systems
HET308 Circuits and Electronics 2, or
HET235 Biomedical Electronics
HET417 Photonics and Fibre Optics
HET408 Biomedical Imaging and Emerging Technologies
HIE507 Advanced Manufacturing Processes i
HIT2308 Software Development Practices
HIT3002 Introduction to Artificial Intelligence
HIT3037 Programming in Java
HIT3138 Intelligent Systems

Management and Business Studies
HBSG200 New Venture Development and Management
HES3380 Engineering Management 1
HES5380 Engineering Management 2

Recommended Study Sequence
Stage 1
Semester 1
HES1300 Robotics and Mechatronics Project 1
HES1230 Materials and Processes
HET124 Energy and Motion
HMS111 Engineering Mathematics 1

Semester 2
HES1305 Robotics and Mechatronics Project 2
HES1125 Mechanics of Structures
HET182 Electronic Systems
HMS112 Engineering Mathematics 2

Stage 2
Semester 1
HMS211 Engineering Mathematics 3A
HES2120 Structural Mechanics
HET202 Digital Electronics Design
HIT3181 Technical Software Development

Semester 2
HES2310 Machine Dynamics 1
HET228 Electrical Actuators and Sensors
HET214 Circuits and Electronics 1
HET232 Embedded Microcontrollers
HES30001 Careers in the Curriculum##

Stage 3
Semester 1
HES3350 Machine Design
HET312 Control and Automation
HES5310 Machine Dynamics 2
HES3380 Engineering Management 1 **

Industry-Based Learning (Optional)
HEW050 Industry-Based Learning (Placement 1) Optional
HEW055 Industry-Based Learning (Placement 2) Optional
Please note the optional IBL is not available to international students.

Semester 2
HET344 Mechatronics Systems Design
HET489 Robotic Control
HET329 Digital Signal and Image Processing
Elective Plus Sequences

Elective

HES3360 Human Factors
HET308 Circuits and Electronics 2**

Semester 2
HET557 Design & Development Project 2
HES2520 Robot System Design
HES3380 Engineering Management 2**
HES4250 Design for Manufacture**

Notes:
- ** These units of study can be exchanged for New Venture Development and Management (HESG2010)
- ** Recommended electives. Electives can also be chosen from the list of Specialist Studies or from an Electives Plus sequence.
- #F Careers in the Curriculum is compulsory for students commencing in 2007 and optional for pre-2007 students. It is offered in both semesters but is only required to be undertaken once. Preference is given to students in second semester of Stage 2 or first semester of Stage 3.
- In addition to the above sequence, successful completion of HED400 Professional Experience in Engineering is required for the award of the above degree and can be taken at any stage of the course.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or International Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and a study score of at least 25 in Mathematical Methods (either).

Selection mode: ENTER and two-stage process with a middle-band of approximately 20%.

Middle-band: Re-ranking based on study scores in specialist mathematics, physics and either chemistry or information technology: information systems.

Applicants who have successfully completed an Advanced Certificate or Associate Diploma at a Victorian Institute of TAFE, or reached an approved equivalent standard will also be eligible for consideration for admission. However, this does not guarantee a place.

2007 Round 1 Clearly-In ENTER: 78.40 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34581 (CSP), 34582 (Fee), 34583 (Int, Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swin.edu.au/scholarships

Bachelor of Technology (Air Transportation Management) [BTECH]
The Bachelor of Technology in Air Transportation Management provides the necessary preparation for non-flying professional careers in the air transportation industry. Air Transportation Management covers the multi-organisational aspects of commercial aircraft and airport operation. Both within Australia and abroad, it operates in a highly complex environment of deregulation, governmental agreements and commercial pressures.

Campus
Hawthorn

Career Opportunities
The Air Transportation Management course prepares students for professional careers in the following areas:
- Airline management
- Airline flight operations
- Airline ground operations

- Airport management
- Airport operations
- Airport planning
- Aviation consultancy firms
- Aviation charter firms
- Air services
- Aviation regulatory and safety services
- Aviation safety authorities

Course Duration
Three years full-time (or equivalent part-time), plus an optional six months to one year of Industry-Based Learning (IBL).

Course Structure
Students complete at least 300 credit points, comprised of units of study from the following four groups:
- Core Aviation / Aviation Human Factors / Air Transportation Management & Aviation Technology Studies - 187.5 credit points
- Core Project Studies - 25 credit points
- Elective Aviation / Aviation Human Factors / Air Transportation Management & Aviation Technology Studies - 50 credit points
- A further 37.5 credit points from the following:
  - Elective Air Transportation Management & Aviation Technology Studies
  - Elective Plus Sequences
  - Alternative elective studies as approved by the Program Panel

Students may choose to undertake Industry-Based Learning (zero credit points). IBL is paid, supervised employment relevant to program. Students must meet all IBL registration and entry requirements. Note that this optional IBL program is not available to international students.

Electives Plus Sequences
Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
- Design, Process and Strategy
- Effective Communication
- Enterprising Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double majors, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Units of Study
Core Aviation Studies Group
HES1920 Private Pilot Licence (Non-Flying)
HES2925 Air Transport Pilot Licence 1 (Non-Flying)
Core Aviation Human Factors Studies Group
HES1910 Human Factors & Communication
HES1915 Occupational Health and Safety
HES2910 Human Factors and Performance

Core Air Transportation Management Studies Group
HES2915 Airline Planning & Operations
HES2986 Aviation Regulation Environment and Operation
HES2990 Airport Planning, Operation and Management
HES4981 Aviation Business Management
HES4990 Aviation Legal Framework
HES6720 Risk Perception and Analysis

Core Aviation Technology Studies Group
HES1945 Aircraft Electrics and Avionics
HES2940 Aircraft Aerodynamics and Performance
HET124 Energy and Motion
HMS141 Aviation Mathematics

Core Project Studies Group
HES4961 Aviation Research Project
HES4962 Advanced Aviation Research

Elective Aviation Human Factors Studies Group
HES4916 Integrated Safety Management Systems

Elective Air Transportation Management Studies Group
HES2935 Aircraft Maintenance
HES4965 Aviation Study Tour
HES4985 Airspace Management and Air Traffic Services
HES6132 Managing Modern Distribution
HES2920 New Venture Development and Management

Elective Aviation Technology Studies Group
HES1935 Internal Combustion and Gas Turbine Engines
HES2930 Aircraft Structures
HES2945 Aircraft Design and Operation

Note: all units of study are 12.5 credit points unless specified otherwise.

Recommended Study Sequence

Year 1
Semester 1
HES1910 Human Factors & Communication
HES1920 Private Pilot Licence (Non-Flying) *
HET124 Energy and Motion
HMS141 Aviation Mathematics

Semester 2
HES1915 Occupational Health and Safety *
HES1935 Internal Combustion and Gas Turbine Engines #
HES1945 Aircraft Electrics and Avionics
HES2925 Air Transport Pilot Licence 1 *

Stage 2
Semester 1
HES2910 Human Factors and Performance
HES2930 Aircraft Structures #
HES2940 Aircraft Aerodynamics and Performance
HES2990 Airport Planning, Operation and Management

Semester 2
HES2915 Airline Planning & Operations
HES2935 Aircraft Maintenance * #
HES2986 Aviation Regulation Environment and Operation
HES6720 Risk Perception and Analysis
HES3002 Careers in the Curriculum (0 credit points, no fees incurred)

Stage 3
Semester 1
HEW050 Industry-Based Learning (Placement 1) Optional

Semester 2
HEW055 Industry-Based Learning (Placement 2) Optional

Stage 4
Semester 1
HES4960 Aviation Project
HES4981 Aviation Business Management
HES4990 Aviation Legal Framework
HES6132 Managing Modern Distribution #

Semester 2
HES2945 Aircraft Design and Operation #
HES4916 Integrated Safety Management Systems #
HES4962 Advanced Aviation Research
HES4985 Airspace Management and Air Traffic Services #

Students are recommended to follow the above sequence, however you can choose to vary your program by taking alternative electives according to the program structure rules.

Note:
- # Electroive units of study.
- Please note that the Faculty will timetable combinations of units according to the recommended sequence.
- * These units of study will be either fully or partly delivered at General Flying Services, Moorabbin Airport.
- Students should undertake Careers in the Curriculum in their 4th academic semester. Students may undertake it after this point, however priority will be given to students selecting it as scheduled.
- Students interested in IBL should attend IBL information session one semester prior to scheduled entry point. The optional IBL program is not available to international students.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any) and Mathematical Methods (either).

Selection mode: ENTER and two-stage process with a middle-band of approximately 20%.

Middle-band: Re-ranking based on study scores in specialist mathematics, physics and psychology.

2007 Round 1 Clearly-In ENTER: 78.70 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34421 (CSP), 34422 (Fee), 34423 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Applicants should also view the 'How To Apply' section on the Swinburne Aviation Website - www.swin.edu.au/aviation/howtoapply.htm for further information.

Bachelor of Technology (Aviation) (B055)

The aim of the course is to prepare students for careers in the aviation industry as professional pilots. Skill training and education processes are weighted equally in the course where there is a need to provide a high level of both flying prowess and the ability to solve problems through the application of methodical and rational thinking. High quality Commercial Pilot Licence training is augmented with educational topics designed to provide an optimum balance between the range of areas required by today's professional pilots. Aviation Human Factors training, Aviation Management and additional aircraft specific engineering topics are included to attain this objective.

During the three year course, adequate time and facilities are provided to enable the students to undertake the flying training necessary to reach Commercial Pilot Licence standard based on a 150 hour integrated flying syllabus. Additional flying training to suit particular needs, such as instructor, agricultural or instrument ratings is also available.

Campus
Hawthorn
Career Opportunities
This course prepares students for aviation careers in the air transportation industry as professional pilots.

Professional Recognition
The BTech (Aviation) course is designed to take students beyond the requirements for the Civil Aviation Safety Authority (CASA), Air Transport Pilot Licence (ATPL) theory examination and Commercial Pilot Licence (CPL(A)) practical test.

Course Duration
Three years full-time (or equivalent part-time).

Course Structure
Students complete at least 300 credit points. The program must meet the requirements of the Civil Aviation Safety Authority for the provision of Commercial Pilot licence theory and practical training.

Students choose units of study from five discipline groups:
- Core Aviation / Aviation Human Factors / Air Transportation Management & Aviation Technology Studies - 200 credit points
- Core Project Studies - 26 credit points
- Elective Aviation / Aviation Human Factors / Air Transportation Management & Aviation Technology Studies - 37.5 credit points
- A further 37.5 credit points from: Aviation & Aviation Technology Studies; Elective Plus Sequence; or Elective studies as approved by the Program Panel
- HES0002 Careers in the Curriculum (zero credit points)

The practical flying training to CPL (A) standard is not compulsory but highly recommended since the program outcome upon graduation is a professional pilot. Students who do not undertake the practical training as recommended may not meet the CASA 150 hour approved syllabus requirements and therefore may require additional flight hours in the future to obtain their CPL(A). Students who do not wish to undertake or complete the practical flying training are highly recommended to undertake the Bachelor of Technology (Air Transportation Management) program.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HES0902 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Electives Plus Sequences
Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
- Design: Process and Strategy
- Effective Communication
- Entrepreneurial Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Units of Study

<table>
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<tr>
<th>Core Aviation Studies Group</th>
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<tbody>
<tr>
<td>HES1900 Private Pilot Licence</td>
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<tr>
<td>HES1905 Commercial Pilot Licence</td>
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<tr>
<td>HES2901 Commercial Pilot Licence 2</td>
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<tr>
<td>HES2906 Air Transport Pilot Licence 1</td>
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<tr>
<td>HES4901 Air Transport Pilot Licence 2</td>
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<tr>
<td>HES4906 Air Transport Pilot Licence 3</td>
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<tr>
<th>Core Aviation Human Factors Studies Group</th>
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<tr>
<td>HES1910 Human Factors &amp; Communication</td>
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<tr>
<td>HES1915 Occupational Health and Safety</td>
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<tr>
<td>HES2910 Human Factors and Performance</td>
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<tr>
<th>Core Air Transportation Management Studies Group</th>
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<tr>
<td>HES2986 Aviation Regulation Environment and Operation</td>
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<tr>
<td>HES4981 Aviation Business Management</td>
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<tr>
<td>HES4990 Aviation Legal Framework</td>
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<th>Core Aviation Technology Studies Group</th>
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<td>HES1945 Aircraft Electrics and Avionics</td>
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<tr>
<td>HES2940 Aircraft Aerodynamics and Performance</td>
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<td>HET124 Energy and Motion</td>
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<td>HMS141 Aviation Mathematics</td>
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<th>Core Project Studies Group</th>
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<tr>
<td>HES4961 Aviation Research Project</td>
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<td>HES4962 Advanced Aviation Research</td>
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<tr>
<th>Elective Aviation Studies Group</th>
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<tr>
<td>HES3901 Airline Standard Flying Training (zero credit points)</td>
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<th>Elective Aviation Human Factors Studies Group</th>
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<td>HES4916 Integrated Safety Management Systems</td>
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<th>Elective Air Transportation Management Studies Group</th>
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<tr>
<td>HES2915 Airline Planning &amp; Operations</td>
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<tr>
<td>HES2935 Aircraft Maintenance *</td>
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<tr>
<td>HES2990 Airport Planning, Operation and Management</td>
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<tr>
<td>HES4965 Aviation Study Tour</td>
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<tr>
<td>HES4985 Airspace Management and Air Traffic Services</td>
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<td>HBSG200 New Venture Development and Management</td>
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<tr>
<th>Elective Aviation Technology Studies Group</th>
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<td>HES1935 Internal Combustion and Gas Turbine Engines</td>
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<tr>
<td>HES2930 Aircraft Structures</td>
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<td>HES2945 Aircraft Design and Operation</td>
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All units of study are 12.5 credit points unless specified otherwise.

Recommended Study Sequence

Stage 1

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<tr>
<th>Semester 1</th>
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<tr>
<td>HES1900 Private Pilot Licence *</td>
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<td>HES1910 Human Factors &amp; Communication</td>
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<td>HET124 Energy and Motion</td>
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<td>HMS141 Aviation Mathematics</td>
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<tr>
<th>Semester 2</th>
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<tbody>
<tr>
<td>HES1906 Commercial Pilot Licence 1 *</td>
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<tr>
<td>HES1915 Occupational Health and Safety *</td>
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<tr>
<td>HES1935 Internal Combustion and Gas Turbine Engines #</td>
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<tr>
<td>HES1945 Aircraft Electrics and Avionics</td>
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Stage 2

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<th>Semester 1</th>
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<tr>
<td>HES2901 Commercial Pilot Licence 2 *</td>
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<tr>
<td>HES2910 Human Factors and Performance</td>
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<tr>
<td>HES2930 Aircraft Structures #</td>
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<tr>
<td>HES2940 Aircraft Aerodynamics and Performance</td>
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Are to obtain a their interest by submitting the Swinburne (VTAC)

Semester 2
HES2002 Careers in the Curriculum (0 credit points, no fees incurred)
HES2906 Air Transport Pilot Licence 1 *
HES2935 Aircraft Maintenance #
HES2945 Aircraft Design and Operation #
HES2986 Aviation Regulation Environment and Operation

Stage 3
Semester 1
HES3901 Airline Standard Flying Training #
HES4901 Air Transport Pilot Licence 2 *
HES4961 Aviation Research Project
HES4981 Aviation Business Management
HES4990 Aviation Legal Framework

Semester 2
HES4906 Air Transport Pilot Licence 3 *
HES4915 Integrated Safety Management Systems #
HES4962 Advanced Aviation Research
HES4985 Airspace Management and Air Traffic Services #

Students are recommended to follow the above sequence, however you can choose to vary your program by taking alternative electives according to the program structure rules.

Note:
- # Elective units of study.
- The Faculty will timetable combinations of units according to the recommended sequence.
- * These units of study will be either fully or partly delivered at General Flying Services, Moorabbin Airport.
- All 7 CASA CPL theory examination credits are required for the student to sit CASA ATPL theory exams.
- Students should undertake Careers in the Curriculum in their 4th academic semester. Students may undertake it after this point, however priority will be given to students selecting it as scheduled.
- The Faculty will enrol students in HES3901 upon GFS confirmation that CPL(A) has been achieved. No Swinburne fees are incurred.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any) and Mathematical Methods (either).

Selection mode: ENTER, interview and satisfaction of the statutory medical requirements of the Civil Aviation Safety Authority.

Middle-band: Re-ranking based on study scores in specialist mathematics, physics and psychology.

All applicants must participate in a pre-selection program and should register their interest by submitting the Swinburne Application for Interview Form by 28 September. All applicants will be required to attend an interview; details will be sent in the mail by mid-November. These applicants must attend in early December.

Applicants applying after 28 September must telephone (03) 9214 8372 for details.

Before commencing commercial licence flying training, students will be required to obtain a Civil Aviation Safety Authority (CASA) Class 1 Medical Certificate and are strongly advised to take an evaluation flight to determine if they have the co-ordination skills required.

Students will be required to cover costs of uniform, flying and simulator hours (minimum cost $5,030) payable in staged payments.

2007 Round 1 Clearing-In ENTER: RC

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34511 (CSP), 34512 (Fee), 34515 (Intl. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Applicants must also submit the Swinburne Aviation Application for Interview by 28 September. This is available from the 'How To Apply' section on the Swinburne Aviation Website.

Double Degrees
Bachelor of Engineering (Civil Engineering) / Bachelor of Business [EC950]

This double degree combines engineering and business, and is designed to increase student knowledge, skills and understanding of civil engineering principles and a fundamental knowledge of business studies.

Aims & Objectives
The Civil Engineering degree course aims to:
- Educate and develop students to understand the fundamentals of engineering and science;
- Provide students with the technical skills required, and to give them an appreciation for the history of engineering and their chosen discipline;
- Enable students to be literate, highly numerate and competent in all aspects of computer aided engineering with an understanding of the nature of creativity, innovation and enterprise, whilst being able to develop solution strategies and manage complex projects.

The Business degree course aims to:
- Expose students to curriculum with a strong entrepreneurial theme;
- Ensure that the body of knowledge and technology imparted in the course will be relevant to immediate and potential employment opportunities;
- Develop both written and oral communication skills, and team work capacities;
- Develop perspective and general knowledge by a study of a variety of disciplines and of their relationship to one another, forming an integrated, holistic business understanding;
- Develop an ability and willingness to adapt to change, given the turbulent, competitive and volatile nature of many businesses;
- Develop a broad understanding of the business and social environment, especially its global and complex nature;
- Develop skills and attitudes conducive to lifelong learning.

Campus
Hawthorn, Sarawak

Career Opportunities
Refer to entries under Bachelor of Engineering (Civil) and Bachelor of Business.

Professional Recognition
Graduates are eligible to apply for membership of Engineers Australia. The following professional recognition applies to studies in the Bachelor of Business:
- Australian Computer Society (ACS)
- Australian Human Resources Institute (AHRi)
- CPA Australia (CPAA) and the Institute of Chartered Accountants in Australia (ICAA)
- Australian Institute of Banking and Finance
- Australian Marketing Institute (AMI)
- Institute of Corporate Managers, Secretaries and Administrators

Specific requirements apply and students may be required to complete particular units of study in order to gain recognition; refer to the Bachelor of Business entry for more information.

Course Duration
Five years full-time (or the equivalent part-time) plus one year optional Industry-Based Learning or a minimum of 12 weeks Professional Experience in Engineering.

Students electing an engineering IBL can undertake this after completing at least 2.5 years of their degree. Students electing a business IBL should only undertake this after at least nine semesters are complete.

Course Structure
The program involves four equally-weighted units of study per semester over five years, plus one optional year of full-time, paid, Industry-Based Learning (IBL) (normally undertaken after the fifth semester). Practical laboratory work is
undertaken throughout the course. A research project is undertaken in final year. Note that the optional IBL program is not available to international students.

For an explanation of the rules of the business component of the double degree visit: www.swin.edu.au/fes/forms/businessrules.doc

Careers in the Curriculum (CIC)
In addition to the course requirements, students must complete a compulsory unit of study HES50000 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Units of Study
Foundation Studies
HEF1000  Professional Engineering
HES1125  Mechanics of Structures
HES1230  Materials and Processes
HES2120  Structural Mechanics
HES2340  Fluid Mechanics 1
HET124   Energy and Motion
HES1115  Sustainable Design
HMS111  Engineering Mathematics 1
HMS112  Engineering Mathematics 2
HMS215  Engineering Mathematics 3C

Technical Studies
HES1105  Civil Engineering Project
HES2125  Design of Concrete Structures
HES2131  Topographical Engineering
HES2136  Road Engineering
HES2146  Computer Aided Engineering
HES2155  Geomechanics
HES3112  Urban Water Resources
HES3121  Design of Steel Structures
HES3150  Geotechnical Engineering
HES4126  Structural Engineering
HES4136  Transport Engineering
HES4146  Water & Environmental Engineering
HES5190  Infrastructure Design Project

Infrastructure Studies
HES5191  Infrastructure Deterioration and Assessment
HES5195  Infrastructure Management Project

Management and Business Studies
HBC110  Accounting for Success
HBE110  Microeconomics
HBM110  Organisation and Management
HBL111  Law in Global Business
HBM110  The Marketing Concept

Specialist Studies
6 Business units in a chosen business major
3 Business elective units

Recommended Study Sequence
Stage 1
HEF1000  Professional Engineering
HET124   Energy and Motion

Stage 2

Semester 1
HES2131  Topographical Engineering
HES2146  Computer Aided Engineering
HES2120  Structural Mechanics
HMS215  Engineering Mathematics 3C

Semester 2
HES2155  Geomechanics
HES2136  Road Engineering
HES2340  Fluid Mechanics 1
HES2125  Design of Concrete Structures
HES0000  Careers in the Curriculum

Stage 3
Semester 1
HES3150  Geotechnical Engineering
HES3112  Urban Water Resources
HES3121  Design of Steel Structures
HBC110  Accounting for Success

Semester 2
HEW550  Industry-Based Learning (Placement 1)* Optional

Stage 4
Semester 2
HEW555  Industry-Based Learning (Placement 2)* Optional

Note that the optional IBL program is not available to international students.

Stage 5
Semester 1
HESS191  Infrastructure Deterioration and Assessment
HBH110  Organisation and Management
HBM110  The Marketing Concept

Semester 2
HESS195  Infrastructure Management Project
HBL111  Law in Global Business

2nd Unit of Chosen Major
3rd Unit of Chosen Major

Stage 6
Semester 1
HES5190  Infrastructure Design Project

4th Unit of Chosen Major
5th Unit of Chosen Major

Stage 2
HESS190  Research Project

6th Unit of Chosen Major

Elective Business Unit

Elective Business Unit
Note: In addition to the above sequence, the successful completion of HED400 Professional Experience in Engineering is required for the award of the above degree and can be taken at any stage of the course.

* Please note that Industry-Based Learning is not available to international students.

**Entry Requirements**

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and a study score of at least 25 in Mathematical Methods (either)

Selection mode: ENTER and two-stage process with a middle-band of approximately 20%

Middle Band: Re-ranking based on study scores in specialist mathematics, physics and either chemistry or information technology; information systems.

Applicants who have successfully completed an Advanced Certificate or Associate Diploma at a Victorian Institute of TAFE, or reached an approved equivalent standard will also be eligible for consideration for admission. However, this does not guarantee a place.

2007 Round 1 Clearly-In ENTER: 75.25 (CSP), n/a (Fee)

**Application Procedure**

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 34691 (CSP), 34692 (Fee), 34693 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor’s Scholarship Program. For further information visit the website at: www.swin.edu.au/scholarships

Applications for part-time places should be made directly to the Faculty of Engineering and Industrial Sciences.

**Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business [EB651]**

This double degree maximises a student's career choices through the study of engineering and business units of study. In addition to the objectives of the single degree, this course is designed to produce engineering and business qualified graduates equipped with multi-disciplinary and entrepreneurial skills, allowing them either to play leading parts in engineering corporations or to develop their own business ventures in the fields of electronics and computer systems engineering.

**Aims & Objectives**

This double degree course has the following objectives:

- To develop in students a mastery of a wide spectrum of basic engineering principles underlying electronics and computer systems engineering;
- To develop in students a thorough understanding of a broad range of engineering methods and techniques, and competence in their application, so that students are able to comprehend and analyse problems and obtain satisfactory design solutions which, where appropriate, show originality and resourcefulness;
- To develop students' communication skills so that they can present their ideas clearly by written, oral and graphical means;
- To give students an appropriate introduction to the role of the professional engineer in the community and to explore the social effects of engineering decisions;
- To prepare students for the changing workplace and changing societal context of engineering by developing their life-long learning skills and flexibility of mind;
- To integrate the formal course of study with an optional one year period of industry-based learning*

* To deliver a professionally recognized course of study which will enable graduates to join the Institution of Engineers Australia as graduate members.
- To develop a general knowledge and perspective of business by a study of a variety of disciplines and of their relationship to one another, forming an integrated, holistic business understanding;
- To develop creativity and business-related analytical skills;
- To develop multidisciplinary applied research skills;
- To ensure that the body of knowledge and technology imparted in the course will be relevant to immediate and potential employment opportunities;
- To develop self-confidence through a learning experience aimed at an understanding of the subject areas and including the development of life-long learning skills;
- To develop both written and oral communication skills, and team work capacities;
- To develop a broad understanding of the business and social environment, especially its global and complex nature; and
- To develop skills and attitudes conducive to life-long learning.

* Please note that Industry-Based Learning is not available to international students.

**Campus**

Hawthorn

**Career Opportunities**

Microprocessor applications, telecommunications and the ‘information superhighways’, analog and digital electronics design, systems modelling and control, and chip design, are some of the career opportunities available to students who complete this course.

**Professional Recognition**

Graduates are eligible to apply for membership of Engineers Australia.

**Course Duration**

Five years full-time (or the equivalent part-time) plus an optional year of Industry-Based Learning or a minimum of 12 weeks Professional Experience in Engineering.

**Course Structure**

This course operates under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four units of study will generally be taken each semester. The typical student's average weekly workload during semester is therefore expected to be fifty hours. This course can only be undertaken on a full-time basis. Total student contact hours, including lectures, classes, tutorials, laboratory and field sessions, will be approximately 22 hours per week during academic semesters.

Students may undertake two semesters of supervised Industry-Based Learning (IBL) which forms an integral part of the course. IBL is usually taken after the second year of study and is a half year academic semesters of study if relevant to the first named degree or after three and a half years academic semesters of study if relevant to the second named degree. Note: The optional Industry-Based Learning (IBL) program is not available to international students.

Students choose units of study from four Study Groups:

- Engineering (E&CS/B) Core Studies
- Software Engineering Studies
- Specialist Technical (EACS/B) Studies
- Management and Business Studies

According to the following rules, students complete at least 500 credit points made up of:

- Engineering (E&CS/B) Core Studies (337.5 credit points)
- Software Engineering Studies (37.5 credit points)
- 112.5 credit points chosen from Management and Business Studies (including one Business Major)
- 12.5 credit points chosen from Specialist Technical (E&CS/B) Studies

**Careers in the Curriculum**

In addition to the above, students must complete a compulsory unit of study HES0003 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

**Business Component**

This component comprises a minimum of 14 business units of study, which usually starts in the 5th academic semester. You will need to plan your business units of study and make sure you structure your course to include the following:

- Five Core Units of Study
- One Business Major. A major consists of six post-core units of study with at least two at Stage 3 level, from one specialisation. Except where specific,
requirements are specified under individual majors of study information outlined in the business specialisation section, Bachelor of Business.

- At least three additional business units of study must be undertaken in order to total a minimum of 14 units.
- At least two management units of study in addition to HBH110 Organisation and Management, and four units of study from Stage 3.

For an explanation of the rules of the business component of the double degree visit: www.swin.edu.au/feis/forms/businessrules.doc

Business Studies

The following Business specific major/minors are available:

- Accounting
- Business Law#
- Economics#
- Enterprise Marketing#
- European Business#
- Finance
- Human Resource Management / Organisation Behaviour
- Information Systems
- International Business
- Management
- Manufacturing Management
- Marketing

# Available as minor only

See page 32 for Business major/minor details.

Units of Study

Engineering & Business (E&CS/B) Core Studies (all 12.5 CP)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBC110</td>
<td>Accounting for Success</td>
</tr>
<tr>
<td>HBE110</td>
<td>Microeconomics</td>
</tr>
<tr>
<td>HBS110</td>
<td>Organisation and Management</td>
</tr>
<tr>
<td>HBL11</td>
<td>Law in Global Business</td>
</tr>
<tr>
<td>HBM110</td>
<td>The Marketing Concept</td>
</tr>
<tr>
<td>HET1000</td>
<td>Professional Engineering</td>
</tr>
<tr>
<td>HET1005</td>
<td>Engineering Project</td>
</tr>
<tr>
<td>HET124</td>
<td>Energy and Motion</td>
</tr>
<tr>
<td>HET182</td>
<td>Electronic Systems</td>
</tr>
<tr>
<td>HET202</td>
<td>Digital Electronics Design</td>
</tr>
<tr>
<td>HET214</td>
<td>Circuits and Electronics 1</td>
</tr>
<tr>
<td>HET232</td>
<td>Embedded Microcontrollers</td>
</tr>
<tr>
<td>HET308</td>
<td>Circuits and Electronics 2</td>
</tr>
<tr>
<td>HET312</td>
<td>Control and Automation</td>
</tr>
<tr>
<td>HET314</td>
<td>Communications Principles</td>
</tr>
<tr>
<td>HET316</td>
<td>Electromagnetic Waves</td>
</tr>
<tr>
<td>HET329</td>
<td>Digital Signal and Image Processing</td>
</tr>
<tr>
<td>HET376</td>
<td>Integrated Circuit Design</td>
</tr>
<tr>
<td>HET416</td>
<td>Computer Systems Engineering</td>
</tr>
<tr>
<td>HET513</td>
<td>Design of DSP Architectures</td>
</tr>
<tr>
<td>HET515</td>
<td>Advanced Embedded Systems</td>
</tr>
<tr>
<td>HET550</td>
<td>Design &amp; Development Project 1</td>
</tr>
<tr>
<td>HET556</td>
<td>Design &amp; Development Project 2</td>
</tr>
<tr>
<td>HMS111</td>
<td>Engineering Mathematics 1</td>
</tr>
<tr>
<td>HMS112</td>
<td>Engineering Mathematics 2</td>
</tr>
<tr>
<td>HMS213</td>
<td>Engineering Mathematics 3B</td>
</tr>
<tr>
<td>HMS214</td>
<td>Engineering Mathematics 4B</td>
</tr>
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</table>

Software Engineering Studies (all 12.5 CP)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT2080</td>
<td>Introduction to Programming</td>
</tr>
<tr>
<td>HIT3161</td>
<td>Technical Software Development</td>
</tr>
<tr>
<td>HIT3172</td>
<td>Object-Oriented Programming in C++</td>
</tr>
</tbody>
</table>

Specialist Technical (E&CS) Studies (all 12.5 CP)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HET209</td>
<td>Fibre Optics Communication &amp; Optical Instrumentation</td>
</tr>
<tr>
<td>HET336</td>
<td>Network Modelling and Analysis</td>
</tr>
<tr>
<td>HET406</td>
<td>Multimedia Data Processing</td>
</tr>
<tr>
<td>HET517</td>
<td>RF Electronics Design</td>
</tr>
<tr>
<td>HIT2114</td>
<td>Operating Systems (Linux)</td>
</tr>
<tr>
<td>HIT3138</td>
<td>Intelligent Systems</td>
</tr>
</tbody>
</table>

Management and Business Studies (all 12.5 CP)

Minimum of 9 Business units of study including one Business major (in addition to the five core units listed above under Engineering & Business (E&CS/B) Core Studies.).

Final Year Experience - Major Projects

As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Recommended Study Sequence

Stage 1

<table>
<thead>
<tr>
<th>Semester 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT1000</td>
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<tr>
<td>HET124</td>
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<td>HMS111</td>
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<table>
<thead>
<tr>
<th>Semester 2</th>
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</thead>
<tbody>
<tr>
<td>HET1005</td>
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<td>HET182</td>
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<tr>
<td>HMS112</td>
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<td>HIT3181</td>
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Stage 2

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>HET202</td>
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<td>HIT314</td>
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<tr>
<td>HIT3172</td>
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<td>HMS213</td>
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<table>
<thead>
<tr>
<th>Semester 2</th>
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</thead>
<tbody>
<tr>
<td>HIT214</td>
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<tr>
<td>HIT232</td>
</tr>
<tr>
<td>HIT329</td>
</tr>
<tr>
<td>HMS214</td>
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<td>HES0003</td>
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</table>

Stage 3

<table>
<thead>
<tr>
<th>Semester 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT308</td>
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<tr>
<td>HIT312</td>
</tr>
<tr>
<td>HIT378</td>
</tr>
<tr>
<td>HETW050</td>
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</table>

<table>
<thead>
<tr>
<th>Semester 2</th>
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</thead>
<tbody>
<tr>
<td>HETW055</td>
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Stage 4

<table>
<thead>
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<tbody>
<tr>
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<td>HMS111</td>
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<td>HETW050</td>
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<table>
<thead>
<tr>
<th>Semester 2</th>
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<tbody>
<tr>
<td>HETW055</td>
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Stage 5

<table>
<thead>
<tr>
<th>Semester 1</th>
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<tbody>
<tr>
<td>HET316</td>
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<tr>
<td>HET550</td>
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<tr>
<td>HET3181</td>
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</table>

<table>
<thead>
<tr>
<th>Semester 2</th>
</tr>
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<tbody>
<tr>
<td>HET3181</td>
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</tbody>
</table>

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Semester 2
HET513 Design of DSP Architectures
HET556 Design & Development Project 2
Management and Business Studies (choose two)

Stage 6
Semester 1
HET515 Advanced Embedded Systems
Management and Business Studies (choose three)

Semester 2
Management and Business Studies (choose four)

Note:
- Electives will be offered subject to a sufficient number of enrolments.
- The choice of units of study from the Management and Business Studies Group must include one Business major.
- In addition to the above sequence, the successful completion of HED401 Professional Experience in Engineering is required for the award of the above degree and can be taken at any stage of the course.
- # The optional Industry-Based Learning (IBL) program is not available to international students.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent. 2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and a study score of at least 25 in Mathematical Methods (either).

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34591 Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34591
For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact Swinburne International on +61 3 9214 8647 or visit the website at: www.international.swinburne.edu.au

Bachelor of Engineering (Electronics and Computer Engineering) (BEng)(E&CS) / Bachelor of Science (Computer Science and Software Engineering) (BSci)(CSS)

This double degree program is based on two single degree programs, the Bachelor of Engineering (Electronics and Computer Systems) and the Bachelor of Science (Computer Science and Software Engineering). These courses are complementary in providing hardware and software aspects of design and development. The double degree provides a course that can be completed in five years without sacrificing the strengths of either course.

Aims & Objectives
The course has the following objectives:
- Develop design expertise in electronics, computer systems and software engineering;
- Cultivate logical and lateral thinking that leads to creation and innovation in the pursuit of solutions to engineering problems;
- Develop students' communication skills so that they can present their ideas clearly by verbal, written and graphical means;
- Give students an appropriate introduction to the role of the professional engineer in the community and to explore the social effects of engineering decisions;
- Prepare students for the changing workplace and changing societal context of engineering by developing their life-long learning skills and flexibility of mind;
- Deliver a professionally recognized course of study which will enable graduates to join the Institution of Engineers Australia as graduate members.

Campus
Hawthorn, Sarawak

Career Opportunities
Graduates can take up careers in a wide spectrum of industries including, Telecommunications, Automotive, Robotics, Power Industry, Aerospace, Electronic appliances, Manufacturing and Chip Design and Industrial Research. Contributions can be made to these industries in a variety of roles including design engineer, software engineer, project planner, product designer and project manager.

Professional Recognition
Graduates of BEng(E&CS) are eligible to apply for membership of Engineers Australia. The BSc(CSSE) has been accredited at professional level by the Australian Computer Society (ACS). The double degree would provide a similar level of recognition by these societies.

Course Duration
Five years full-time (or the equivalent part-time) plus an optional year of Industry-Based Learning or a minimum of 12 weeks Professional Experience in Engineering.

Course Structure
This course operates under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four units of study, each worth 12.5 credit points, will generally be undertaken each semester. The typical student's average weekly workload during semester is therefore expected to be fifty hours. Total student contact hours, including lectures, classes, tutorials, flexible learning and laboratory and field sessions will vary in different semesters.

Students choose units of study from five Study Groups:
- Electronics and Computer Systems Engineering Core Studies
- Software Engineering Studies
- Technical Studies
- Specialist Technical Studies
- Management and Business Studies

According to the following rules, students must complete at least 500 credit points made up of:
- Electronics and Computer System Engineering Core Studies (250 credit points),
- Software Engineering Studies (200 credit points),
- 25 credit points from Management and Business Studies,
- 12.5 credit points from Technical Studies or Specialist Technical Studies.

Careers in the Curriculum
In addition to the above, students must complete a compulsory unit of study HES0003 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Units of Study
Electronics and Computer Systems Engineering Core Studies (all 12.5 credit points)
HET1000 Professional Engineering
HET1005 Engineering Project
HET124 Energy and Motion
HET192 Electronic Systems
HET202 Digital Electronics Design
HET214 Circuits and Electronics 1
HET232 Embedded Microcontrollers
HET308 Circuits and Electronics 2
HET314 Communications Principles
HET316 Electromagnetic Waves
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Stage 1

Semester 1
HET1000  Professional Engineering
HIT142  Energy and Motion
HIT2080  Introduction to Programming
HMS111  Engineering Mathematics 1

Semester 2
HET513  Design
HIT329  Digital Signal and Image Processing
HIT416  Computer Systems Engineering
HIT513  Design of DSP Architectures
HET515  Advanced Embedded Systems
HET552  Design and Development Project
HMS111  Engineering Mathematics 1
HMS112  Engineering Mathematics 2
HMS213  Engineering Mathematics 3B
HMS214  Engineering Mathematics 4B

Software Engineering Studies (12.5 credit points)
HIT1307  Internet Technologies
HIT1402  Database Analysis and Design
HIT2080  Introduction to Programming
HIT2308  Software Development Practices
HIT2316  Usability
HIT3037  Programming in Java
HIT3044  Professional Issues in Information Technology
HIT3047  Real-Time Programming
HIT3138  Intelligent Systems
HIT3158  Software Engineering Project A
HIT3172  Object-Oriented Programming in C++
HIT3181  Technical Software Development
HIT2358  Software Engineering Project B
HIT3309  Software Project Practices and Management
HIT3310  Software Architectures and Design
HIT3311  Software Deployment and Evolution

Technical Studies (all 12.5 credit points)
HES5250  Robot System Design
HET223  Electrical Actuators and Sensors
HIT313  Communications Information Theory
HET344  Mechatronics Systems Design
HET417  Photonics and Fibre Optics
HIT452  Wireless Communications
HIT489  Robotic ControlET489  Robotics Control
HIT553  Power Electronics
HIT3037  Programming in Java
HIT3057  Software Testing and Reliability
HIT3063  UNIX Systems Programming
HIT3087  Advanced Java
HIT3150  Multi-Agent Systems

Specialist Technical Studies (all 12.5 credit points)
HET209  Fibre Optics Communication & Optical Instrumentation
HIT336  Network Modelling and Analysis
HIT406  Multimedia Data Processing
HIT517  RF Electronics Design

Management and Business Studies (all 12.5 credit points)
HBSG200  New Venture Development and Management
HESS380  Engineering Management 1
HESS380  Engineering Management 2

Not all units of study are offered all semesters. Some may be only offered subject to sufficient enrolments.

Recommended Study Sequence

Stage 2

Semester 1
HET1005  Engineering Project
HET182  Electronic Systems
HIT3181  Technical Software Development
HMS112  Engineering Mathematics 2

Semester 2
HET202  Digital Electronics Design
HET314  Communications Principles
HIT3172  Object-Oriented Programming in C++
HMS213  Engineering Mathematics 3B

Stage 3

Semester 1
HET308  Circuits and Electronics 2
HET316  Electromagnetic Waves
HET378  Integrated Circuit Design
HIT3037  Programming in Java

Semester 2
HEW050  Industry-Based Learning (Placement 1)# Optional

Stage 4

Semester 1
HEW055  Industry-Based Learning (Placement 2)# Optional

Semester 2
HET329  Digital Signal and Image Processing
HIT416  Computer Systems Engineering
HIT1402  Database, Analysis and Design

Management and Business Studies (choose one)

Stage 5

Semester 1
HET513  Design of DSP Architectures
HIT2316  Usability
HIT3310  Software Architectures and Design

Management and Business Studies (choose one)

Stage 6

Semester 1
HET552  Design and Development Project
HIT3158  Software Engineering Project A
HIT3047  Real-Time Programming
HIT3102  Intelligent Agents

Semester 2
HIT3311  Software Deployment and Evolution
HIT3044  Professional Issues in Information Technology
HIT3258  Software Engineering Project B

Technical Studies or Specialist Technical Studies (choose one)

Note:
- The first 1.5 years of the recommended study sequence are common between the single BEng(Electronics & Computer Systems) and the double degree. This allows students with a suitable level of achievement to make a transition to the double degree.
• In addition to the above sequence, the successful completion of HED400 Professional Experience in Engineering is required for the award of the above degree and can be taken at any stage of the course.

• The optional Industry-Based Learning is not available to international students.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and a study score of at least 25 in Mathematical Methods (either).
Selection mode: ENTER and two-stage process with a middle-band of approximately 20%.
Middle-band: Re-ranking based on study scores in specialist mathematics, physics and either chemistry or Information Technology; Information systems.
2007 Round 1 Clearly-Entered: 78.05 (CSP), nil (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34231 (CSP), 34232 (Fee), 34233 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
Note: VTAC applicants accepted into the single degree E051 Bachelor of Engineering (Electronics and Computer Systems) can select this double degree at enrolment.

Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business [EMB009]

This double degree combines engineering and business units of study, and is designed to increase student knowledge, skills and understanding of engineering principles and a fundamental knowledge of business studies.

Aims & Objectives
The Mechanical Engineering course aims to:
• Develop skills in the design, development and testing of mechanical products and systems;
• Provide a thorough grounding in the engineering, physical and mathematical sciences;
• Develop an appreciation of the management of engineering activities;
• Enhance the learning experience through Industry-Based Learning*;
• Develop the ability to undertake life-long professional learning;
• Develop an awareness of the professional responsibility for a sustainable environment.

The Business degree course aims to:
• Expose students to curriculum with a strong entrepreneurial theme;
• Ensure that the body of knowledge and technology imparted in the course will be relevant to immediate and potential employment opportunities;
• Develop both written and oral communication skills, and team work capacities;
• Develop perspective and general knowledge by a study of a variety of disciplines and of their relationship to one another, forming an integrated, holistic business understanding;
• Develop an ability and willingness to adapt to change, given the turbulent, competitive and volatile nature of many businesses;
• Develop a broad understanding of the business and social environment, especially its global and complex nature;
• Develop skills and attitudes conducive to lifelong learning.

* Please note that Industry-Based Learning is not available to international students.

Campus
Hawthorn, Sarawak

Career Opportunities
Graduates of this double degree course may select paths from either Bachelor of Engineering (Mechanical) or Bachelor of Business, or from both discipline areas. Graduates will have an advantage in the market place compared to those with single discipline degrees.

Professional Recognition
Graduates are eligible to apply for membership of Engineers Australia.

The following professional recognition applies to studies in the Bachelor of Business:
• Australian Computer Society (ACS)
• Australian Human Resources Institute (AHRI)
• CPA Australia (CPA) and the Institute of Chartered Accountants in Australia (ICAA)
• Australian Marketing Institute (AMI)
• Institute of Corporate Managers, Secretaries and Administrators

Specific requirements apply and students may be required to complete particular units of study in order to gain recognition; refer to the Bachelor of Business entry for more information.

Course Duration
Five years full-time (or equivalent part-time), plus an optional year Industry-Based Learning may be available or a minimum of 12 weeks Professional Experience in Engineering.

International students must study full-time and are not eligible to undertake Industry-Based Learning.

Course Structure
The program involves four equally-weighted units of study per semester over five years, plus one optional year of full-time, paid, Industry-Based Learning (normally undertaken after the fifth semester). Practical laboratory work is undertaken throughout the course. A research project is undertaken in the final year. Note that the Industry-Based Learning year is not available to international student visa holders.
For an explanation of the rules of the business component of the double degree visit: www.swin.edu.au/ils/forms/businessrules.doc
The structure of the course is comprised of clusters (groups) of units of study reflecting different skills and knowledge to be acquired. The available units of study for completion of the degree is classified into 5 different groups:
• Foundation Studies
• Technical Studies
• Design and Projects
• Management and Business Studies
• Specialist Studies

Students will normally be enrolled in the Recommended Study Sequence and must successfully complete a minimum of 500 credit points in addition to the successful completion of HED400 Professional Experience in Engineering. In all cases, students must choose units of study from the following study groups according to the following rules (subject to timetable constraints and prerequisite studies being met):
Students complete at least 500 credit points made up of:
• 125 credit points of Foundation Studies
• 137.5 credit points of Technical Studies
• 62.5 credit points from Design and Projects Studies
• 62.5 credit points chosen from Management and Business Studies
• 112.5 credit points chosen from Specialist Studies

Careers in the Curriculum
In addition to the above, students must complete a compulsory unit of study HES50001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduate students from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Units of Study
Foundation Studies
HES1125 Mechanics of Structures
HES1330 Materials and Processes
HES1300 Robotics and Mechatronics Project 1
### Technical Studies
- HES1305 Robotics and Mechatronics Project 2
- HET124 Energy and Motion
- HET182 Electronic Systems
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HMS211 Engineering Mathematics 3A
- HMS212 Engineering Mathematics 4A

### Design and Projects
- HES2146 Computer Aided Engineering
- HES3350 Machine Design
- HES3360 Human Factors
- HES4350 Mechanical Systems Design
- HES5102 Research Project
- HES5103 Advanced Research Project

### Management and Business Studies
- HBC110 Accounting for Success
- HBE110 Microeconomics
- HBL111 Law in Global Business
- HBM110 The Marketing Concept

### Specialist Studies
- 6 Business units in a chosen business major
- 3 Business elective units

### Recommended Study Sequence

#### Year 1

**Semester 1**
- HES1300 Robotics and Mechatronics Project 1
- HES1125 Mechanics of Structures
- HET124 Energy and Motion
- HMS111 Engineering Mathematics 1

**Semester 2**
- HES1305 Robotics and Mechatronics Project 2
- HMS211 Engineering Mathematics 3A
- HES2340 Fluid Mechanics 1
- HMS212 Engineering Mathematics 4A

#### Year 2

**Semester 1**
- HET182 Electronic Systems
- HES2120 Structural Mechanics
- HES2130 Machine Dynamics 1
- HMS211 Engineering Mathematics 3A

**Semester 2**
- HES2340 Fluid Mechanics 1
- HMS2281 Materials and Manufacturing 1

### Year 3

**Semester 1**
- HES3150 Machine Design
- HES3110 Control Engineering
- HES3281 Materials and Manufacturing 2
- HBH110 Organisation and Management

**Semester 2**
- HEW050 Industry-Based Learning (Placement 1)* Optional

### Year 4

**Semester 1**
- HEW055 Industry-Based Learning (Placement 2)* Optional

**Semester 2**
- HES3150 Machine Design
- HES3281 Materials and Manufacturing 2
- HES3360 Human Factors
- HES5102 Research Project

### Year 5

**Semester 1**
- HES3310 Machine Dynamics 2
- HES3360 Human Factors
- HBE110 Microeconomics
- HES5102 Research Project

**Semester 2**
- HES3430 Fluid Mechanics 2
- HEB111 Law in Global Business
- HBM110 The Marketing Concept
- HES5103 Advanced Research Project

### Year 6

**Semester 1**
- 1st Unit of Chosen Major
- 2nd Unit of Chosen Major
- 3rd Unit of Chosen Major
- Business Unit Elective (1)

**Semester 2**
- 4th Unit of Chosen Major
- 5th Unit of Chosen Major
- 6th Unit of Chosen Major
- Business Unit Elective (2)

#### Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

- 2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and a study score of at least 25 in Mathematical Methods (either). Selection mode: ENTER and two-stage process with a middle-band of approximately 20%.
- Middle-band: Re-ranking based on study scores in specialist mathematics, physics and either chemistry or information technology: information systems.
- Applicants who have successfully completed an Advanced Certificate or Associate Diploma at a Victorian Institute of TAFE, or reached an approved equivalent standard will also be eligible for consideration for admission. However, this does not guarantee a place.
- 2007 Round 1 Clearer In ENTER: 75.25 (CSP), nil (Fee)
Today's society is dependent on complex computer-based systems. From online, multimedia electronic commerce to air-traffic control, from enterprise-wide systems in manufacturing to interactive games, the computer has invaded all of our lives. Complex computer systems are built by teams of professionals who have the technical expertise, project know-how and communication skills that best achieved by studying computer science and software engineering in-depth.

Mechatronics combines mechanical, electrical, electronic and software engineering in the design, development and control of diverse systems used in a range of industries including manufacturing, medicine and the service industries. Examples of mechatronic systems include aircraft, whitegoods, automobiles, automated plant and robots. Robots are computer controlled mechatronics devices, which have been used to assist humans in various tasks. While the majority of robots have been used in manufacturing a recent trend has seen robots used in a variety of applications including space and underwater exploration, medicine and a wide range of service industries. The discipline of robotics embraces the design and operation of these devices and their integration with other systems in the work environment.

Graduates of this course will have extensive skills in integrating engineering with software development, particularly relating to multi-disciplinary projects, and will have developed experience in working on team projects. They will also have well-developed oral, written and graphical communication skills.

Aims & Objectives

The course aims to develop in students:

- A mastery of the basic scientific principles underlying robotics and mechatronics.
- A sound knowledge of engineering, computer science and software engineering.
- A thorough understanding of engineering methods and the ability to apply them competently, and where appropriate, with originality and resourcefulness.
- An understanding of the principles of management and the financial aspects of engineering.
- Communication skills so that students can present their ideas clearly by verbal, written and graphical means.
- Self-educative skills and flexibility of mind so that students are prepared for a world of accelerating technological change.
- The skills necessary for working in a software development team on a large scale project.
- An understanding of the process of software development.
- Skills in the object-oriented approach to systems analysis, design and implementation.
- The communication and management skills required to successfully manage software development projects.
- An understanding of social, legal and ethical issues confronting the software and engineering professional.
- Knowledge and experience in human factors, knowledge-based systems, database systems and data communications.

Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering) [ERCS050]

There is clear synergy between the Bachelor of Engineering (Robotics and Mechatronics) and Bachelor of Science (Computer Science and Software Engineering) courses which, when combined, results in a homogeneous and focused course. Graduates will possess a combination of skills that will allow them to make a valuable contribution to society.

Applications for part-time places should be made directly to the Faculty of Engineering and Industrial Sciences.

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). Applications who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swin.edu.au/ scholarships

Campus

Hawthorn, Sarawak

Career Opportunities

Graduates from this program can take up careers in a wide spectrum of industries including robotics, aerospace, chemical, defence, automotive and manufacturing where complex software plays a major role, as well as in businesses that require extensive computer support, such as banking and commerce. Contributions can be made to these industries in a variety of roles including design engineer, software engineer, project planner, product designer and project manager.

Professional Recognition

Graduates are eligible to apply for membership of Engineers Australia and credit at Professional Level (the highest level) towards membership of the Australian Computer Society.

Course Duration

Five years full-time plus an optional year of Industry-Based Learning. This course is not available on a part-time basis.

Course Structure

The first year of the program focuses mainly on the basic engineering sciences, mathematics, electronics and computing; units of study which form the foundation of the disciplines of Robotics and Mechatronics, and Computer Science and Software Engineering. A unique feature of the first year program is the incorporation of the Robotics and Mechatronics unit of study which is undertaken in project mode. This unit of study is designed to stimulate student interest and provide an understanding of the elements that make up the disciplines of Robotics and Mechatronics, and Computer Science and Software Engineering.

The following years of the course address various units of study within the broad fields of mechanical engineering, computer science, electronic engineering and software engineering to form a coherent and balanced approach to the disciplines of Robotics and Mechatronics, and Computer Science and Software Engineering. Aspects of management including technology management, accounting and law are also taught in relation to the design, development and marketing of robotic, mechatronic and computer-based systems. Web Development and Artificial Intelligence, which are increasingly having an impact on and/or being impacted upon by Robotics and Mechatronics, are units of study addressed in the course.

The fifth year project, which is a compulsory subject, will often be industry-sponsored/based. It provides opportunities for incorporation of knowledge gained in the course into a product/process with potential for practical application.

The structure of the course is comprised of clusters (groups) of units of study reflecting different skills and knowledge to be acquired. The available units of study for completion of the above degrees are classified into five different groups:

- Foundation Studies
- Software Engineering Studies
- Technical Studies
- Specialist Technical Studies
- Management and Business Studies

Students will normally be enrolled in the Recommended Study Sequence (see below) and must successfully complete a minimum of 500 credit points in addition to the successful completion of HED400 Professional Experience in Engineering. In all cases, students must choose units of study from the above study groups according to the following Rules (subject to timetable constraints and prerequisite studies being met).

Students complete at least 500 credit points made up of:
- 225 credit points of Foundation Studies
- 162.5 credit points of Software Engineering Studies
- 75 credit points chosen from Technical Studies
- 12.5 credit points chosen from Specialist Studies
- 25 credit points chosen from Management and Business Studies

Careers in the Curriculum

In addition to the above, students must complete a compulsory unit of study HES0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to
enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Units of Study
Foundation Studies
- HES1125 Mechanics of Structures
- HES1230 Materials and Processes
- HES1300 Robotics and Mechatronics Project 1
- HES1305 Robotics and Mechatronics Project 2
- HES2120 Structural Mechanics
- HES2310 Machine Dynamics 1
- HES3350 Machine Design
- HES3360 Human Factors
- HET124 Energy and Motion
- HET182 Electronic Systems
- HET202 Digital Electronics Design
- HET214 Circuits and Electronics 1
- HET232 Embedded Microcontrollers
- HET212 Control and Automation
- HET229 Digital Signal and Image Processing
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HMS211 Engineering Mathematics 3A

Software Engineering Studies
- HET104 LAN Principles
- HIT6402 Database Analysis and Design
- HIT2006 Software Development Practices
- HIT3007 Programming in Java
- HIT3644 Professional Issues in Information Technology
- HIT3047 Real-Time Programming
- HIT3136 Intelligent Systems
- HIT3172 Object-Oriented Programming in C++
- HIT3181 Technical Software Development
- HIT3178 Software Engineering Project A
- HIT3299 Software Project Practices and Management
- HIT3310 Software Architectures and Design
- HIT3311 Software Deployment and Evolution

Technical Studies
- HET228 Electrical Actuators and Sensors
- HET344 Mechatronics Systems Design
- HET489 Robotic Control
- HET553 Software Engineering and Robotics Project
- HES5250 Robot System Design
- HES5310 Machine Dynamics 2

Specialist Studies
- HES3334 Thermofluid Systems
- HES4250 Design for Manufacture*
- HET308 Circuits and Electronics 2*
- HET417 Photonics and Fibre Optics
- HIT1307 Internet Technologies
- HIRS07 Advanced Manufacturing Processes I

Management and Business Studies
- HBSG200 New Venture Development and Management
- HES3380 Engineering Management 1
- HES5380 Engineering Management 2

Recommended Study Sequence
Stage 1

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
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<tbody>
<tr>
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Stage 2

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Stage 3

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<td>HIT3172</td>
<td>HIT228</td>
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<tr>
<td>HIT232</td>
<td>HIT329</td>
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</tbody>
</table>

Industry Based Learning (Optional)

- HEW050 Industry-Based Learning (Placement 1) Optional
- HEW055 Industry-Based Learning (Placement 2) Optional

Stage 4

<table>
<thead>
<tr>
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<tr>
<td>HIT3309</td>
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<td>HIT1402</td>
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Stage 5

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<td>HIT3138</td>
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<tr>
<td>HES3360</td>
<td>HES3158</td>
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</tbody>
</table>

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Note:
- * Recommended elective,
- ** These units can be exchanged for HBSG200 New Venture Development and Management
- **# HES0001 Career in the Curriculum is compulsory for students commencing in 2007 and optional for pre-2007 students. It is offered in both semesters but is only required to be undertaken once. Preference given to students in second semester of Stage 2 or first semester of Stage 3.
- ** In addition to the above sequence, the successful completion of HED400 Professional Experience in Engineering, is required for the award of the above degree and can be taken at any stage of the course.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and a study score of at least 25 in Mathematical Methods (either).

Selection mode: ENTER and two-stage process with a middle-band of approximately 10%.

Middle-band: Re-ranking based on study scores in specialist mathematics, physics and either chemistry or information technology: information systems.

Applicants who have successfully completed an Advanced Certificate or Associate Diploma at a Victorian Institute of TAFE, or reached an approved equivalent standard will also be eligible for consideration for admission.

However, this does not guarantee a place.

Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and normally have at least five years related work experience, may be considered for admission if they can demonstrate motivation and ability to succeed.

2007 Round 1 Clearing Entry: 86.50 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 34991 (CSP), 34692 (Fee), 34960 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Students who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swin.edu.au/scholarships

Bachelor of Technology (Air Transportation Management) / Bachelor of Business [EATB080]

The aim of this course is to provide an alternative non-flying degree to the Bachelor of Technology (Aviation) course and to prepare students for professional careers in the air transportation industry. The additional business studies aim to expand the range of employment opportunities into management areas.

Campus
Hawthorn

Career Opportunities
The Air Transportation Management course prepares students for professional careers in the following areas:
- Airline management
- Airline flight operations
- Airline ground operations
- Airport management
- Airport operations
- Airport planning
- Aviation consultancy firms
- Aviation charter firms
- Air services
- Aviation regulatory and safety services
- Aviation safety authorities

Professional Recognition
The combined degree fulfills the educational requirements for associate membership of the Institute of Corporate Managers, Secretaries and Administrators, affiliate membership of the Australian Institute of Banking and Finance, initial membership requirements for the Australian Institute of Management.

Course Duration
Four years full-time (or equivalent part-time), plus six months to one year optional Industry-Based Learning.

International students must study full time and are not eligible to undertake Industry-Based Learning.

Course Structure
Students complete at least 400 credit points, comprised of units of study from the following groups:

ATM Component:
- Core Aviation / Aviation Human Factors / Air Transportation Management & Aviation Technology Studies - 187.5 credit points
- Core Project Studies - 25 credit points
- Elective Aviation / Aviation Human Factors / Air Transportation Management & Aviation Technology Studies - 25 credit points

Business Component:
- Core Business Units - 50 credit points
- Business Management/Major Sequence of Study (special sequence approved for Aviation & ATM students) - 62.5 credit points
- Business Minor Sequence of Study - 50 credit points

Note:
- Some ATM units are also counted towards the Business Component. See the Business Units Planner for details.
- Students also undertake HES5002 Careers in the Curriculum (zero credit points).
- Students may choose to undertake Industry-Based Learning (zero credit points). IBL is paid, supervised employment relevant to program. Students must meet all IBL registration and entry requirements. Note: The optional year of Industry-Based Learning is not available to international students.

Careers in the Curriculum
In addition to the above, students must complete a compulsory unit of study HES5002 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students, who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Aviation Unit Groups

Core Aviation Studies Group
HES1920 Private Pilot Licence (Non-Flying)
HES2925 Air Transport Pilot Licence 1 (Non-Flying)

Core Aviation Human Factors Studies Group
HES1910 Human Factors & Communication
HES1915 Occupational Health and Safety
HES2910 Human Factors and Performance

Core Air Transportation Management Studies Group
HES2915 Airline Planning & Operations
HES2986 Aviation Regulation Environment and Operation
HES3990 Airport Planning, Operation and Management
HES4981 Aviation Business Management
HES4990 Aviation Legal Framework
HES6720 Risk Perception and Analysis
HET124 Aircraft Electrics and Avionics
HET124 Aircraft Aerodynamics and Performance
HMS141 Air Transport

Core Aviation Technology Studies Group
HES2940 Aircraft Aerodynamics and Performance
HET124 Energy and Motion
HMS141 Aviation Mathematics

Core Project Studies Group
HES4961 Aviation Research Project
HES4982 Advanced Aviation Research

Elective Aviation Human Factors Studies Group
HES4916 Integrated Safety Management Systems

Elective Air Transportation Management Studies Group
HES4985 Aviation Management and Air Traffic Services
HES4985 Aviation Study Tour
HES4985 Airspace Management and Air Traffic Services
HES5132 Managing Modern Distribution
HES5200 New Venture Development and Management

Elective Aviation Technology Studies Group
HES1935 Internal Combustion and Gas Turbine Engines
HES2980 Aircraft Structures
HES2945 Aircraft Design and Operation

Business Units
• Four Core Business units of study
• Major course of study in Management
• Minor course of study

The following Business specific minors are available:
• Accounting
• Asian Business
• Business Law
• eBusiness
• Economics
• European Business
• Finance
• Human Resource Management / Organisation Behaviour
• Information Systems
• International Business
• Manufacturing Management
• Marketing

See page 32 for Business major/minor details.

Recommended Study Sequence

Stage 1
Semester 1
HES1910 Human Factors & Communication
HES1920 Private Pilot Licence *
HET124 Energy and Motion
HMS141 Aviation Mathematics

Semester 2
HES1915 Occupational Health and Safety *
HES1945 Aircraft Electrics and Avionics
HES2925 Air Transport Pilot Licence 1 *

Business Unit

Stage 2
Semester 1
HES2940 Aircraft Aerodynamics and Performance
HES2940 Aircraft Aerodynamics and Performance
HES2900 Air Transport Planning, Operation and Management

Business Unit

Stage 2
Semester 2
HES2900 Aircraft Maintenance
HES2915 Airline Planning & Operations
HES2986 Aviation Regulation Environment and Operation

HE5720 Risk Perception and Analysis

One of:
HES2905 Aircraft Maintenance *
HES4985 Airspace Management and Air Traffic Services

Stage 3 - Optional Industry-Based Learning (IBL)
Semester 1
HEW500 Industry-Based Learning (Placement 1) Optional

Semester 2
HEW505 Industry-Based Learning (Placement 2) Optional

This optional Industry-Based Learning program is not available to international students.

Stage 4
Semester 1
HES4961 Aviation Business Management
HES4960 Aviation Legal Framework

Business Unit

Semester 2
Business Unit
Business Unit
Business Unit

One of:
HES2945 Aircraft Design and Operation #
HES4916 Integrated Safety Management Systems #

Stage 5
Semester 1
HES4961 Aviation Research Project

Business Unit

Semester 2
HES4962 Advanced Aviation Research

Business Unit

Business Unit

Business Unit

Note:
• Students are recommended to follow the above sequence, however you can choose to vary your program by taking alternative electives according to the program structure rules. The faculty will timetable combinations of ATM units according to the recommended sequence.
• * These units of study will be either fully or partly delivered at General Flying School, Moorabbin Airport.
• Students should undertake HES3002 Careers in the Curriculum in their 4th academic semester. Students may undertake it after this point, however priority will be given to students selecting it as scheduled.
• For Business requirements see the program structure rules and the Business Units Planner template.
• Students interested in IBL should attend IBL information session one semester prior to scheduled entry point.
• # These units of study are electives.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any) and Mathematical Methods (either).
Selection mode: ENTER and two-stage process with a middle-band of approximately 20%.
Middle-band: Re-ranking based on study scores in specialist mathematics, physics and psychology.
2007 Round 1 Clearly-In ENTER: 78.70 (CSP), n/a (Fee)
Application Procedure
Applicants must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34421 (CSP), 34422 (Fee), 34423 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
Applicants should also view the 'How To Apply' section on the Swinburne Aviation Website - www.swin.edu.au aviation/howtoapply.htm for further information.

Bachelor of Technology (Aviation) / Bachelor of Business [E98659]
This degree prepares students for careers in the air transportation industry as professional pilots. The course incorporates the theory subjects required by the Australian Civil Aviation Safety Authority (CASA) up to Air Transport Pilot Licence (ATPL) standard. Students who successfully complete this course are awarded the degree of Bachelor of Technology (Aviation) and will also gain a Commercial Pilot Licence (CPL). Additionally, professional education in the world of business will be provided.

Aims & Objectives
The aim of the course is to prepare students for careers in the aviation industry as professional pilots. Skill training and education processes are weighted equally in the course where there is a need to provide a high level of both flying and professional education. The student is provided with the theoretical background and the ability to solve problems through the application of methodical and rational thinking. High quality Commercial Pilot Licence training is augmented with educational topics designed to provide an optimum balance between the range of areas required by today's professional pilots. Aviation Human Factors training, Aviation Management and additional aircraft specific engineering topics are included to attain this objective. Additionally, the double degree will facilitate graduates to effectively enter the aviation business and particularly the management areas.

Campus
Hawthorn

Career Opportunities
This course prepares students for aviation careers in the air transportation industry as professional pilots.

Professional Recognition
This double degree course is designed to take students beyond the requirements for the Civil Aviation Safety Authority (CASA), Air Transport Pilot Licence (ATPL) theory examination and Commercial Pilot Licence (CPL(A)) practical test. The combined degree also fulfills the educational requirements for associate membership of the Institute of Corporate Managers, Secretaries and Administrators, affiliate membership of the Australian Institute of Banking and Finance, initial membership requirements for the Australian Institute of Management.

Course Duration
Four years full-time (or equivalent part-time).

Course Structure
Students complete at least 400 credit points. The program must meet the requirements of the Civil Aviation Safety Authority for the provision of Commercial Pilot licence theory and practical training.

Aviation Component
- Core Aviation / Aviation Human Factors / Air Transportation Management & Aviation Technology Studies - 200 credit points
- Core Project Studies - 25 credit points
- Elective Aviation / Aviation Human Factors / Air Transportation Management & Aviation Technology Studies - 12.5 credit points

Business Component
- Core Business Units - 50 credit points
- Business Management Major of Study (special sequence approved for Aviation & ATM students) - 62.5 credit points
- Business Minor Sequence of Study - 50 credit points

Note: Some Aviation units are also counted towards the Business Component. See Business Units Planner for details.

Careers in the Curriculum
In addition to the above, students must complete a compulsory unit of study. HES0002 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Aviation Unit Groups
Core Aviation Studies Group
HES1900 Private Pilot Licence
HES1906 Commercial Pilot Licence 1
HES2901 Commercial Pilot Licence 2
HES2906 Air Transport Pilot Licence 1
HES4901 Air Transport Pilot Licence 2
HES4906 Air Transport Pilot Licence 3

Core Aviation Human Factors Studies Group
HES1910 Human Factors & Communication
HES1915 Occupational Health and Safety
HES2910 Human Factors and Performance

Core Air Transportation Management Studies Group
HES3986 Aviation Regulation Environment and Operation
HES3981 Aviation Business Management
HES4990 Aviation Legal Framework

Core Aviation Technology Studies Group
HES1945 Aircraft Electrics and Avionics
HES2940 Aircraft Aerodynamics and Performance
HET124 Energy and Motion
HMS141 Aviation Mathematics

Core Project Studies Group
HES4961 Aviation Research Project
HES4962 Advanced Aviation Research

Elective Aviation Studies Group
HES3901 Airline Standard Flying Training (zero credit points)

Elective Aviation Human Factors Studies Group
HES4916 Integrated Safety Management Systems

Elective Air Transportation Management Studies Group
HES2915 Airline Planning & Operations
HES2935 Aircraft Maintenance
HES2990 Airport Planning. Operation and Management
HES4965 Aviation Study Tour
HES4965 Airspace Management and Air Traffic Services
HBS0200 New Venture Development and Management

Elective Aviation Technology Studies Group
HES1935 Internal Combustion and Gas Turbine Engines
HES2930 Aircraft Structures
HES2945 Aircraft Design and Operation

Note:
- All units of study are 12.5 credit points unless specified otherwise.
- The practical flying training to CPL (A) standard is not compulsory but highly recommended since the program outcome upon graduation is a professional pilot.
- Students who do not undertake the practical training as recommended may not meet the CASA 150 hour approved syllabus requirements and therefore may require additional flight hours in the future to obtain their CPL(A).
- Students who do not wish to undertake or complete the practical flying training are highly recommended to undertake the Bachelor of Technology (Air Transportation Management) program.

Business Units
• Four Core Business units of study
• Major course of study in Management
• Minor course of study
The following Business specific minors are available:
• Accounting
• Asian Business
• Business Law
• eBusiness
• Economics
• European Business
• Finance
• Human Resource Management / Organisation Behaviour
• Information Systems
• International Business
• Manufacturing Management
• Marketing
See page 32 for Business major/minor details.

Recommend Study Sequence

Stage 1
Semester 1
HES1900 Private Pilot Licence *
HES1910 Human Factors & Communication
HET124 Energy and Motion
HMS141 Aviation Mathematics

Stage 2
Semester 2
HES1906 Commercial Pilot Licence **
HES1915 Occupational Health and Safety *
HES1935 Internal Combustion and Gas Turbine Engines #
HES1945 Aircraft Electrics and Avionics
Business Unit

Stage 3
Semester 1
HES3901 Airline Standard Flying Training #
HES4901 Air Transport Pilot Licence 2*
HES4981 Aviation Business Management
HES4990 Aviation Legal Framework
Business Unit

Stage 4
Semester 1
HES4961 Aviation Research Project
Business Unit
Business Unit
Business Unit

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any) and Mathematical Methods (either).

Selection mode: ENTER, interview and satisfaction of the statutory medical requirements of the Civil Aviation Safety Authority.

Middle-band: Re-ranking based on study scores in specialist mathematics, physics and psychology.

All applicants must participate in a pre-selection program and should register their interest by submitting the Swinburne Aviation Application for Interview by 28 September. All applicants will be required to attend an interview; details will be sent in the mail by mid November. These applicants must attend in early December.

Applicants applying after 28 September must telephone (03) 9214 8372 for details.

Before commencing commercial licence flying training, students will be required to obtain a Civil Aviation Safety Authority (CASA) Class 1 Medical Certificate and are strongly advised to take an evaluation flight to determine if they have the coordination skills required.

Bachelor of Science (Biophotonics) (Honours) [2019]
This course allows students, who possess a bachelor degree, to specialise in the exciting new fields of optical technologies. The general field of optical technology is in a state of enormous growth around the world, especially in Australia. A large number of industry areas are developing and/or implementing laser based technologies. Some of these include telecommunications, materials processing, materials development, medical diagnostics, data storage, precision optical sensing, and many others.

The course combines coursework with a two-semester research project. The coursework concentrates on taking the student to the highest level of theoretical understanding required for original research involving laser technologies.
completion of the research project, the student is expected to have made a substantial and original contribution to their chosen field, and submitted a clear and concise thesis describing their work. As part of the formal research supervision, students are expected to perform as active members of a research team.

**Aims & Objectives**

This course aims to:
- Provide students with the appropriate experimental, analytical, and theoretical skills required for high quality research involving optical technologies;
- Provide students with the resources, both physical and intellectual, to actively participate in frontier research projects;
- Develop student’s communication skills, enabling them to present their ideas clearly by verbal and written means; and
- Prepare students for a career in research.

**Campus**

Hawthorn

**Career Opportunities**

Graduates will have excellent prospects for employment in research operations of high-technology corporations, as well as universities and other institutions.

**Course Duration**

Two semesters full-time. In exceptional circumstances the program will be available to students (in full-time employment) on a part-time basis. In such a case the duration will be the equivalent to two semesters of full-time study ie. four semester part-time.

**Course Structure**

The honours program comprises two components:
- Coursework (50 credit points)
- Research project (50 credit points)

**Coursework**

Students must complete 50 credit points, with 25 credit points coming from ‘core’ units of study. The core units are defined separately for the two streams. The units will be offered in a flexible delivery mode (not necessarily conforming to the standard semesters of the undergraduate teaching year). All units of study have a value of 12.5 credit points unless otherwise indicated.

**Research Project**

Students must complete an all-year project as part of a research group. At the completion of the project the student must be able to demonstrate a professional understanding of the context of their research. Included in the research project component of this course will be compulsory completion of a structured Research Methods program.

**Units of Study**

**Core Units**

- HET511 Honours Research Project (50 credit points)
- HET512 Research Methods (0 credit points)
- HET503 Lasers
- HET505 Advanced Optical Imaging Theory

Choose two from:

- HET504 Quantum Mechanics A
- HET506 Modern Optics
- HET507 Atomic and Molecular Spectroscopy & Non-linear
- HET508 Optical Waveguide Theory and Optical Fibre Sensors
- HET509 Advanced Optical Microscopy
- HET514 Quantum Mechanics B

Note: Student cannot undertake both HET504 Quantum Mechanics A and HET514 Quantum Mechanics B.

**Entry Requirements**

Entry to this course is available to academically prepared students. These students must have completed a three-year (pass) degree (or four years for BEng) from Swinburne University of Technology or another recognised university. The pass degree should show strong academic achievement, corresponding to a credit average or higher. It should also include at least two years of mathematics, and preferably some study of electromagnetism.

**Application Procedure**

Contact the Faculty of Engineering and Industrial Sciences on (+61 3) 9214 8372 to obtain a direct application form.

**Bachelor of Science (Optronics and Lasers) (Honours)**

This course allows students with a bachelor degree, to specialise in the exciting new fields of optical technologies. The general field of optical technology is in a state of enormous growth around the world, especially in Australia. A large number of industry areas are developing and implementing laser based technologies. Some of these include telecommunications, materials processing, medical diagnostics, data storage, precision optical sensing, and many others.

The course combines coursework with a two-semester research project. The coursework concentrates on taking the student to the highest level of theoretical understanding required for original research involving laser technologies. On completion of the research project, the student is expected to have made a substantial and original contribution to their chosen field, and submitted a clear and concise thesis describing their work. As part of the formal research supervision, students are expected to perform as active members of a research team.

**Aims & Objectives**

This course aims to:
- Provide students with the appropriate experimental, analytical, and theoretical skills required for high quality research involving optical technologies;
- Provide students with the resources, both physical and intellectual, to actively participate in frontier research projects;
- Develop student’s communication skills, enabling them to present their ideas clearly by verbal and written means; and
- Prepare students for a career in research.

**Campus**

Hawthorn

**Career Opportunities**

A large number of industry areas are developing and/or implementing laser based technologies. Some of these include telecommunications, materials processing, medical diagnostics, data storage, precision optical sensing, and many others. Graduates will have excellent prospects for employment in research operations of high-technology corporations, as well as universities and other institutions.

**Course Duration**

Two semesters full-time. In exceptional circumstances the program will be available to students, in full-time employment, on a part-time basis. In such a case the duration will be the equivalent of two semesters of full-time study ie. four semesters part-time.

**Course Structure**

The honours program comprises two components:
- Coursework (50 credit points)
- Research project (50 credit points)

**Coursework**

Students must complete 50 credit points, with 25 credit points coming from ‘core’ units of study. The core units are defined separately for the two streams. The units will be offered in a flexible delivery mode (not necessarily conforming to the standard semesters of the undergraduate teaching year). In exceptional circumstances the program will be available to students, in full-time employment, on a part-time basis. In such a case the duration will be the equivalent of two semesters of full-time study ie. four semesters part-time.

**Research Project**

Students must complete an all-year project as part of a research group. At the completion of the project the student must be able to demonstrate a professional understanding of the context of their research. Included in the research project component of this course will be compulsory completion of a structured Research Methods program.

**Units of Study**

**Core Units**

- HET511 Honours Research Project (50 credit points)
- HET512 Research Methods (0 credit points)
- HET503 Lasers (12.5 credit points)
To obtain a direct credit average or higher. It should also include at least two students must have completed a three-year (pass) degree (or four years for years of mathematics, and preferably some study of electromagnetism.

Application Procedure
Contact the Faculty of Engineering and Industrial Sciences on (+61 3) 9214 8372 to obtain a direct application form.

Entry Requirements
Entry to this course is available to academically prepared students. These students must have completed a three-year (pass) degree (or four years for BEng) from Swinburne University of Technology or another recognised university. The pass degree should show strong academic achievement, corresponding to a credit average or higher. It should also include at least two years of mathematics, and preferably some study of electromagnetism.

Faculty of Higher Education, Lilydale
The Lilydale campus of Swinburne University was officially opened in 1997 to service the educational needs of those living in the outer eastern region of Melbourne. The campus has grown rapidly since, with a diverse range of programs in the areas of Business and Social Science as well as postgraduate opportunities.

Studying at the Faculty of Higher Education Lilydale offers a unique educational experience with a flexible approach to learning via online lectures, learning guides and easy access to academics via telephone or email. Higher Education Lilydale students have the best of both worlds. They study in a relaxed and picturesque environment as part of an academic and social community. They also have access to all that Swinburne University offers, including the opportunity to travel overseas, join one of the countless university clubs and social activities, and to complement their studies with a real workplace experience.

Further Information
Telephone: +61 3 9215 7200
Fax: +61 3 9215 7070
Email: idinfo@swin.edu.au
Website: www.lilydale.swinburne.edu.au/campus

Bachelor of Business [LOS5]
The Bachelor of Business equips you with a diverse range of theoretical knowledge and practical skills to prepare you for the demands of tomorrow’s business world. The course is designed to enhance a number of generic skills highly valued by employers and important for the development of the individual such as self-awareness, presentation and communication skills, and skills for the maintenance of learning and knowledge.

The Bachelor of Business offers you the flexibility to combine studies in business, social science and technology, giving you the opportunity to design your own degree. Students also have the opportunity to undertake Industry-Based Learning* (optional, paid, work experience) and/or travel overseas on international student exchange or a study tour.

* Please note that Industry-Based Learning is not available for international students.

Aims & Objectives
The Bachelor of Business is planned to enable students to:
• Develop learning skills in an interdisciplinary environment
• Communicate effectively in written, oral and electronic mediums
• Experience a breadth of disciplinary studies and intellectual processes
• Specialise in the field of their chosen profession
• Study combinations of units leading to professional accreditation
• Use technology in a way that supports learning and vocational aspirations
• Develop a regional and international outlook in relation to learning
• Understand the cross-cultural issues of interdisciplinary study and teamwork
• Articulate easily from previous tertiary study to complete a degree program
• Develop the personal qualities and attitudes needed for professional success

Campus
Lilydale

Career Opportunities
Opportunities are available in a wide range of fields such as accounting, communications, financial advice, human resources, management, marketing, media, public relations, sales and tourism.

Course Duration
Three years full-time or approximately six years part-time. An additional six to 12 months of Industry-Based Learning (IBL) is also available.

Course Structure
Students undertake a total of twenty-four units, each of 12.5 credit points, consisting of core units, majors and minors and elective units. Students are required to complete at least four units at Stage 3 and no more than ten units at Stage 1.

Core Business Units
Students are required to complete five of the following seven Core Business Units:
LA1100 Information Systems Fundamentals
LBC100 Accounting 1*
LBE100 Microeconomics
LBM100 Marketing Concepts
LBL100 Introduction to Commercial Law
LCR100 Statistics and Research Methods
LTE100 Introduction to Management

* LBC101 Accounting Fundamentals is an alternative for students not wishing to undertake further studies in Accounting or Economics/Finance.

** Majors/Minors **
Satisfactory completion of the course will require the inclusion of either:
- One major and two minors, OR
- One major and one minor, OR
- Two majors

In addition students must complete prerequisite units for chosen majors and minors. Please refer to the individual specialisations listed below for details of majors and minors.

At least one major must be taken from the business streams of:
- Accounting
- Economics
- Economics/Finance
- Human Resource Management
- Management
- Marketing
- Public Relations
- Tourism

See page 117 for Business major/minor details.

In addition, students may select majors and minors from any other course offered by Higher Education Lilydale:
- Accounting
- Business Law#
- Economics
- Economics/Finance
- eCommerce
- eEnterprise #
- Human Resource Management
- Management
- Media Studies
- Marketing
- Psychology
- Public Relations
- Sociology
- Social Statistics
- Tourism

# Only offered as a minor

See page 117 for Lilydale major/minor details.

Some combinations, for example both Psychology and Accounting with professional recognition, will not be possible within the twenty-four unit structure.

A major consists of six units post Stage 1, with at least two units at Stage 3. For professional recognition in Psychology, students must take units as specified.

A minor consists of four units post Stage 1 with at least one unit at Stage 3.

** Electives **
Electives provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline. Students can select any units of study in any major or minor offered at Higher Education Lilydale as elective units. Please note that some prerequisites may apply.

In addition to units of study included in majors or minors, students can also select the following single electives:
- LIN100 Aboriginal Australia: Victorian people, places and experiences
- LSM101 Cultural Perspectives on Science and Technology
- LCL100 Learning and Communication Behaviour

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** Electives Plus Sequences **
Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

** Winter Term **
Students also have the opportunity to speed up, slow down, or spread out their studies by enrolling in one or two selected elective units of study in a six-week winter term.

** Careers in the Curriculum (CIC) **
In addition to the above, students must complete a compulsory unit of study LCE001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

** Final Year Experience - Major Projects **
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

** Entry Requirements **
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any).

Minimum requirements for Non-Year 12 applicants apply for Higher Education courses at Swinburne:

- Applicants with partially completed tertiary qualifications: preference given to applicants who have completed at least one year of equivalent full-time study with credit grade average at least 65% (VTAC calculated GPA of 5).
- Advanced Diploma and Associate Diploma: preference given to applicants who have completed, or will complete an Advanced Diploma course at the end of the year. A credit level (65% or above) in 75% of their subjects must be achieved to be considered for selection.
- Diplomas: If places are available, applicants who have completed a Diploma or at least 2 full-time semesters towards an Advanced Diploma at a credit level (65% or above) in 75% of their subjects may be considered for selection. In this case, a reduced number of exemptions into the degree may apply.

Certificate IV: If places are available, applicants who have completed a Certificate IV may be considered for selection only if they have achieved a minimum credit level (65% or above) in 75% of their subjects. No credits will be granted.

Applications in the Special Entry Access Categories (SEAS), requiring special entry through the Access and Entry provisions, will be considered in relation to their relevant employment experience and educational background. Applications for all programs must be made to the Admissions Officer on a Swinburne Application form.

** Regional Bonus **: Applicants to this course may have their aggregate adjusted upwards by the university if they reside in Melbourne's Outer Eastern Region.

For further information visit www.lilydale.swinburne.edu.au/regionalbonus
application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 35101 (CSFP), 35102 (Fee), 35103 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Mid-year applications are made directly to Swinburne.

bachelor of business (accounting) [L054]

Accounting is the basic language of business. Business activities are recorded and analysed in financial terms using accounting systems. Investors use financial statements to guide their actions, and managers utilise information from cost accounting systems to make decisions, price products, develop operating strategies and evaluate business performance.

It is assumed that people enrolling in the Bachelor of Business (Accounting) degree will want to pursue a career as a fully qualified professional accountant. The Bachelor of Business (Accounting) degree at Lilydale has been accredited by both professional accounting bodies. Accordingly, students who successfully complete the degree may be eligible to apply for membership of either CPA Australia or the Institute of Chartered Accountants in Australia.

Campus

Lilydale

Career Opportunities

Major studies in accounting, combined with other appropriate business units of study, can lead to job opportunities working as a professional accountant in fields as diverse as auditing, liquidation, taxation, investment, finance, management accounting and information technology. Such opportunities are available both in Australia and overseas, and can be found within commerce and industry, public accounting firms and the public sector.

Professional Recognition

Graduates are eligible to apply for membership of either CPA Australia or the Institute of Chartered Accountants in Australia.

Course Duration

Three years full-time or approximately six years part-time. An optional and additional six months or year of Industry-Based Learning (IBL) is also available. International students must study full time and are not eligible to undertake Industry-Based Learning.

Course Structure

This degree comprises twenty-four units of study, each of 12.5 credit points. Students are required to complete fourteen units to gain professional recognition. Students must also include another major or minor course of study from other specialisations available at Lilydale campus:

- Accounting
- Business Law*
- Economics
- Economics/Finance
- eCommerce
- eEnterprise #
- Human Resource Management
- Management
- Media Studies
- Marketing
- Psychology
- Public Relations
- Sociology
- Social Statistics#
- Tourism

# Only offered as a minor

See page 117 for Lilydale major/minor details.

Winter Term

Students also have the opportunity to speed up, slow down, or spread out their studies by enrolling in one or two selected elective units of study in a six-week winter term.

Careers in the Curriculum (CIC)

In addition to the above, students must complete a compulsory unit of study LCE001. Careers in the Curriculum to be awarded the degree. Careers in the Curriculum is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Electives

Electives provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline. Students can select any units of study in any major or minor offered at Higher Education Lilydale as elective units. Please note that some prerequisites may apply.

In addition to units of study included in majors or minors, students can also select the following single electives:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIM100</td>
<td>Aboriginal Australians: Victorian people, places and experiences</td>
</tr>
<tr>
<td>LSM101</td>
<td>Cultural Perspectives on Science and Technology</td>
</tr>
<tr>
<td>LCL100</td>
<td>Learning and Communication Behaviour</td>
</tr>
<tr>
<td>LZZ301</td>
<td>Work Integrated Learning Project</td>
</tr>
<tr>
<td>LBX300</td>
<td>Global Business Practice and Culture</td>
</tr>
</tbody>
</table>

Electives Plus Sequences

Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Entrepreneuring Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Final Year Experience - Major Projects

As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Units of Study

Accounting Units

Stage 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBC100</td>
<td>Accounting 1 (P)</td>
</tr>
</tbody>
</table>

Stage 2

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBC200</td>
<td>Computer Accounting Systems (P)</td>
</tr>
<tr>
<td>LBC201</td>
<td>Corporate Accounting (P)</td>
</tr>
<tr>
<td>LBC202</td>
<td>Management Accounting 1 (P)</td>
</tr>
<tr>
<td>LBC203</td>
<td>Computer Cost Accounting Systems (P)</td>
</tr>
<tr>
<td>LCE204</td>
<td>Financial Management 1 (P)</td>
</tr>
</tbody>
</table>

Stage 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBC300</td>
<td>Accounting Theory (P)</td>
</tr>
<tr>
<td>LBC301</td>
<td>Taxation (P)</td>
</tr>
<tr>
<td>LBC302</td>
<td>Auditing (P)</td>
</tr>
<tr>
<td>LBC304</td>
<td>Personal Investment Issues (E)</td>
</tr>
<tr>
<td>LBC306</td>
<td>Strategic Financial Management (E)</td>
</tr>
</tbody>
</table>
Other Units
LBE100 Microeconomics (P)
LBE200 Macroeconomics (P)
LBL100 Introduction to Commercial Law (P)
LBL200 Company Law (P)
LCR100 Information Methods (P)
LCR100 Information and Research Methods (P)
LTE100 Introduction to Management (P)
(P) = Compulsory requirement for professional recognition
(E) = Recommended elective

Note: In addition to the above, students must complete a compulsory unit of study LCE1001 Careers in the Curriculum to be awarded the degree.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2008 VCE Pre-requisites: Units 3 & 4 - a study score of at least 20 in English (any).
Refer to the Bachelor of Business for other entry requirement options. 2007 Round 1 Clearly-In ENTER: 61.25 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 35021 (CSP), 35022 (Fee), 35023 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au

Mid-year applications are made directly to Swinburne.

Bachelor of Business (eCommerce) [L053A]
eCommerce is a growing area of interest for businesses of all sizes. Businesses are transforming themselves to take advantage of the power of electronic communications. There are new possibilities for all business activities, using public networks (such as the Internet), private networks (such as the ATM network) and mobile commerce.

Some aspects of eCommerce that you will explore are the impact of electronic technologies on: buying and selling, business to business relationships, internal business processes, business structure, organisational knowledge and the process of innovation.

As an eCommerce student you will build those skills through learning:
- Developing new business models and strategies.
- Evolving new ways of thinking about business.
- Operating in the networked environment, whether local, regional or global.
- Strategic application of technology.
- Effective teamwork and processes.

A major in eCommerce can be taken as a complement to other business studies, as the effect of the networked economy can be seen in all areas of business.

Aims & Objectives
The course aims to provide graduates with:
- Strong general business knowledge of eCommerce.
- Competence in the underlying skill set required by eCommerce professionals working globally.
- Attitudes reflecting high level independent and team learning skills.
- Ability to think strategically.
- Information enabled with strong problem solving and advanced concept application skills.
- Well integrated understanding of eCommerce systems, processes, people and technology.
- General business, marketing and management skills, including their application in an eBusiness environment.
- Cross-cultural sensitivity, recognition of ethical issues and ethical business behaviour.
- Enthusiasm and understanding of entrepreneurship and its application in the business world.

Campus
Lilydale

Career Opportunities
Dramatic shifts in managing new business relationships, transactions and technologies are generating strong demand for knowledge and skills in eCommerce. Businesses, non-profit and government organisations are all making transitions and are seeking employees with the relevant knowledge, application capabilities and attitudes for successful performance in an eCommerce environment.

The eCommerce major, combined with other appropriate business units, equips students for job opportunities in diverse areas such as business system design and management, online strategy, content management, sales, administration or online marketing. Complemented by relevant work experience, graduates will grow into management roles in these areas.

Professional Recognition
Subsequent to course accreditation, application will be made through the Australian Computer Society framework and other professional organisations as appropriate, for example the Australian Institute of Management.

Course Duration
Three years full-time or six years part-time.

Core Business Units
The four core business units required are:
LCR100 Accounting 1 or LCR101 Accounting Fundamentals
LBM100 Microeconomics
LBL100 Introduction to Commercial Law
LTE100 Introduction to Management

eCommerce Major
The eCommerce major consists of two second year and three third year units post Stage 1.

Stage 1
LEB105 eCommerce Fundamentals

Stage 2
LEB210 Business Models of eCommerce
LEB211 Deriving Business Value
LEB212 The Networked Economy

Stage 3
LEB310 Designing eCommerce and eFS Systems
LEB311 Developing eCommerce and eFS Systems
LEB312 Business Transformation

eEnterprise Minor
The eEnterprise minor consists of two second year and two third year units post Stage 1.

Stage 1
LEB105 eCommerce Fundamentals

Stage 2
LEB213 Managing People in the Networked Economy
LEB214 eEnterprise Strategy and Project Management

Stage 3
LBL300 Cyber Law
LEB313 eEnterprise Performance Measurement
Students may also be able to complete minor studies in one of:

- Accounting
- Economics
- Economics/Finance
- Human Resource Management
- Management
- Marketing
- Media Studies
- Public Relations
- Social Statistics
- Sociology
- Tourism

These all provide an appropriate extension of knowledge and skills consistent with the aims and objectives of this degree. Refer to page xxx for minor study details.

**Electives**

Electives provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline. Students can select any units of study in any major or minor offered at Higher Education Lilydale as elective units. Please note that some prerequisites may apply.

In addition to units of study included in majors or minors, students can also select the following single electives:

- LIN100 Aboriginal Australia: Victorian people, places and experiences
- LSM101 Cultural Perspectives on Science and Technology
- LCL100 Learning and Communication Behaviour
- LZZ301 Work Integrated Learning Project
- LBX300 Global Business Practice and Culture

**Electives Plus Sequences**

Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Enterprising Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetable constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

**Winter Term**

Students also have the opportunity to speed up, slow down, or spread out their studies by enrolling in one or two selected elective units of study in a six-week winter term.

**Careers in the Curriculum (CIC)**

In addition to the above, students must complete a compulsory unit of study LCE001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

**Final Year Experience - Major Projects**

As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

**Entry Requirements**

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any).

Refer to the Bachelor of Business for other entry requirement options.

2007 Round 1 Clearly-in ENTER: 60.55 (CSP), 35102 (Fee)

**Application Procedure**

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 35101(CSP), 35102 (Fee), 35103 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Midyear applications are made directly to Swinburne.

**Bachelor of Business (Tourism and Management)** [L056A]

The Bachelor of Business (Tourism and Management) course is designed to prepare graduates for self-employment or professional careers in public and private sector organisations concerned with tourism. The core units provide the knowledge and basic skills required in the broad business environment, while the management stream extends and reinforces these foundations as they apply in the operation of small and medium sized organisations.

The tourism stream provides a more industry-specific focus for the understandings provided in the business units, and uses an interdisciplinary approach which views tourism as a form of human behaviour as well as a business interest. All units will encourage the development of important generic skills in presentation, problem-solving, communication and lifelong learning.

Throughout the course, students will also be encouraged to develop appropriate attitudes with respect to conservation of the natural and cultural environments.

**Aims & Objectives**

The course has the following objectives:

- To provide students with a strong, interdisciplinary knowledge base in such business-related areas as accounting, financial management, marketing, human resource management and enterprise management.
- To develop understanding of the nature, history and culture of tourism, and of the key role of communications in enhancing management of tourism organisations and destination regions.
- To develop awareness of and commitment to the principles of sustainability in enterprise management.
- To equip graduates with the skills and knowledge required for successful management of small to medium-sized enterprises, especially those involved with tourism.

**Campus**

Lilydale

**Career Opportunities**

Tourism is a rapidly growing area of the Australian economy. While a high percentage of the positions offered are relatively unskilled, part-time and casual, there is recognition in the industry of the need for professionally qualified managers in whose business expertise is combined with an understanding of tourism.

Graduates of this course may find employment in the wide range of tourism enterprises eg. attractions, transport and tour services, in other enterprises where tourists are involved eg. museums and national parks, and in administrative or coordinating organisations such as regional tourism authorities.

They will also be equipped to develop and run their own businesses in the tourism field.

**Professional Recognition**

Although no formal professional recognition is either necessary or applicable to this degree the tourism discipline is affiliated to the Council for Australian University Tourism and Hospitality and Tourism Education. Such affiliation is increasingly being recognised as a benchmark for graduate quality.
Course Duration
Three years full-time or approximately six years part-time. An optional and additional year of Industry-Based Learning (IBL) is also available.

Course Structure
The degree consists of twenty-four units of study, each of 12.5 credit points, including core units, majors, minors and electives. Students are required to complete at least four units at Stage 3 and no more than ten units at Stage 1.

A major consists of six units post Stage 1 in an appropriate discipline, with at least two units at Stage 3.

A minor consists of four units post Stage 1 in an appropriate discipline, with at least one unit at Stage 3.

Satisfactory completion of the course will require the inclusion of either:
- A major in Tourism and a major in Management; or
- A major in Tourism and a minor in Management; or
- A major in Management and a minor in Tourism

Given the above structure, students may be able to select one additional minor, outside Tourism or Management, within this degree.

In determining units for chosen majors and minors students must be mindful of any prerequisites that exist.

Core units
Students are required to complete the following core business units:

- LBC101 Accounting Fundamentals
- LB100 Introduction to Commercial Law
- LBE100 Microeconomics
- LCR100 Statistics and Research Methods
- LTE100 Introduction to Management

In addition, the following business unit is required for this course:

- LBM200 Marketing Behaviour (required for Tourism Major)

* Students undertaking the Accounting minor, must undertake LBC101 Accounting 1 instead of LBC101.

Elective units
Students have the opportunity to undertake a number of elective units which are directly relevant to this degree, these include:

- LBL200 Company Law
- LBL201 Marketing Law
- LBE300 Global Business Practice and Culture
- LTT301 Work Integrated Learning Project

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study LCE201 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Majors/Minors & Specialisations

Tourism major

Stage 1

- LTT100 Introduction to Tourism

Stage 2

- LTT201 Tourist Destination Management
- LTT202 Tourism Enterprise Development
- LTT203 Tourism Services
- LTT204 Regional Issues in Tourism

Stage 3

- LTT300 Tourism Channels and Travel Management
- LTT302 Planning and Management in Ecotourism

Tourism minor

Stage 1

- LTT100 Introduction to Tourism

Stage 2

- Plus three of:
  - LTT201 Tourist Destination Management
  - LTT202 Tourism Enterprise Development
  - LTT203 Tourism Services
  - LTT204 Regional Issues in Tourism

Stage 3

- Plus one of:
  - LTT300 Tourism Channels and Travel Management
  - LTT302 Planning and Management in Ecotourism

Management major

The following combination is recommended:

Stage 1

- LTE100 Introduction to Management

Stage 2

- LTE200 Organisations and Management
- LTE201 Human Resources Management
- LTE202 Organisational Behaviour

Stage 3

- Any three of:
  - LTE300 Organisational Change and Development
  - LTE301 Strategic Planning and Project Management
  - LSM302 Information Society
  - LZZ301 Work Integrated Learning Project

Management minor

The following combination is recommended:

Stage 1

- LTE100 Introduction to Management

Stage 2

- LTE200 Organisations and Management
- LTE201 Human Resources Management
- LTE202 Organisational Behaviour

Stage 3

- Any two of:
  - LTE300 Organisational Change and Development
  - LTE301 Strategic Planning and Project Management
  - LSM302 Information Society

Additional Business minors which are available with this course:

- Accounting
- Marketing

Electives Plus Sequences

Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Enterprising Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
Electives Plus sequel selection is available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequel details.

**Winter Term**
Students also have the opportunity to speed up, slow down, or spread out their studies by enrolling in one or two selected elective units of study in a six-week winter term.

**Entry Requirements**
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any). Refer to the Bachelor of Business for alternative entry requirement options.

2007 Round 1 Early-Entrants: ENTER: 61.00 (CSP), n/a (Fee)

**Application Procedure**
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 35031 (CSP), 35032 (Fee), 35033 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au
Midyear applications are made directly to Swinburne.

**Bachelor of Communications [L069]**
The Bachelor of Communications aims to equip students with the skills, knowledge and key theoretical insights required to work effectively within a broad range of contemporary communications environments. It seeks to blend design, communications and public relations disciplines in ways informed by current and projected industry needs. The course will develop the skills necessary to find employment as communications professionals and will give students familiarity with core design concepts and principles within contemporary communications environments.

Students will be taught how, as professional communicators, to communicate and collaborate effectively with clients in order to meet clients and employers' requirements, in areas such as the production of websites, brochures, reports and information kits. There is an expectation that graduates entering the communications field will themselves have the skills required to actively participate in a digital environment. Knowledge in areas such as podcasting, weblog construction and maintenance is often required, along with an understanding of how to integrate these approaches into effective communications strategies.

**Aims & Objectives**
Students completing the Bachelor of Communications will be able to:

- Describe the communication requirements of different professional contexts
- Demonstrate knowledge in the skills required in the context related to their chosen major field of study
- Identify the key theoretical insights underpinning professional communication practice
- Discuss approaches to dealing with ethical issues arising in professional communication
- Display flexibility and sensitivity in adapting their personal communication style to different communication contexts
- Articulate how to adjust professional communication strategies to changing communication environments
- Make appropriate selections of communications technologies to support their communication activities for both learning and vocational purposes

**Campus**
Lilydale and Prahran (attendance at both campuses is required)

**Course Duration**
Three years full-time or approximately six years part-time

**Course Structure**
Core units
- HDC002 Methods of Investigation
- HDC003 Design Studio
- HDMMD101 Introduction to Communication Design
- HDMMD111 Introduction to Media
- PRC102 Professional Communication Practice
- LSM102 Introduction to Media
- PR Major (Core + 6 units) or PR Minor (4 units)
- LPR200 Public Relations Theory and Practice
- LPR201 Public Relations Writing
- LPR202 Marketing Communications
- LPR203 Strategic Public Relations Planning
- LPR301 Public Relations Campaigns

Electives Plus
Students undertaking this program can choose to incorporate an Electives Plus sequence. Electives Plus sequel selection is available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequel details.

Media Major (Core + 6 units) or Media Minor (4 units)
- LSM200 eCulture
- LSM204 Cinema Studies
- LSM205 Journalism
- LSM204 Cyberscreen Studies
- LSM305 Australian Media Policy
- LSM306 Media Project

**Design Minor (4 units)**
Students choose one only from the following clusters:
Option 1: Management and Design Strategy
- HOC006 Managing Design
- HOC007 Communicating Practice
- HOC008 Design Systems and Services
- HOC009 Design and Business Strategy

Option 2: Multimedia Design
- HDMMD111 2D Animation
- HDMMD121 Interactive Design for Web Technology
- HDMMD212 Digital Video Camera Techniques
- HDMMD221 Typography for Screen and Motion

Option 3: Communication Design
- HDMCOM112 Typography
- HDMCOM121 Form and Structure for Communication Design
- HDMCOM211 Typography for Publication or
- HDMCOM221 Branding and Identity
- HDMCOM321 Publication Design

In addition to the following general program rules apply:
- Students must complete 25 credit points of project work in the final year of the program in order to meet the requirements of the Swinburne Model for Professional Learning.
- Students must complete the zero-credit point 'Careers in the Curriculum' unit of study (usually taken in the penultimate year of study).

Electives
Electives provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline. Students can select any units of study in any major or minor offered at Higher Education, Lilydale as elective units. Please note that some prerequisites may apply.

In addition to units of study included in majors or minors, students can also select the following single electives:
- LIN100 Aboriginal Australia: Victorian people, places and experiences
- LSM101 Cultural Perspectives on Science and Technology
- LCL100 Learning and Communication Behaviour
- LZ301 Work Integrated Learning Project
- LBK300 Global Business Practice and Culture

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and strengthen their employability by selecting from units of study outside their
degree disciplines. Current Elective Plus sequences are:

- Design: Process and Strategy
- Effective Communication
- Entering a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Entrepreneur
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs
subject to timetabling constraints, with the exception of double degree programs,
specialist double major degrees, and where entry has been approved with
advanced standing. See page 193 for Electives Plus sequence details.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as
an interstate or International Year 12 qualification.
2008 VCE prerequisites: Units 3 and 4 - a study score of at least 20 in English (any).
Students not holding an appropriate Year 12 or equivalent qualification may be
admitted on the basis of extensive work experience. A quota for this entry
procedure applies.

Application Procedure
Applications must be made through the Victorian Tertiary Admissions
Centre (VTAC).
VTAC code: 35011 (CSP), 35012 (Fee), 35013 (int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
Midyear applications are made directly to Swinburne.

Bachelor of Social Science [1.05]
The Bachelor of Social Science provides students with skills and abilities
pertinent to a variety of professional careers in the public and private sectors of
employment. Students are encouraged to develop a theoretical insight of their
chosen disciplines to enable them to understand not only current developments in
society and the workplace, but also to adapt and respond appropriately to
future developments as they occur. In addition, the course is designed to
enhance a number of generic skills highly valued by employers and important for
the development of the individual, such as self-awareness, presentation and
communication skills, and skills for the maintenance of learning and knowledge.

This course offers a combination of breadth and specialisation; breadth as a
foundation for lifelong learning and specialisation as a preparation for future
professional and vocational pursuits. In the implementation of these principles
attention will be given to the process of learning and thinking involved as well as the
content. A student's choice of unit combinations will be expanded by allowing
significant selections across other degree streams.

Aims & Objectives
The Bachelor of Social Science is planned to enable students to:
- Develop learning skills in an interdisciplinary environment.
- Communicate effectively in writing, orally and electronically.
- Experience breadth of disciplinary studies and intellectual processes.
- Specialise in the field of their chosen profession.
- Study combinations of units leading to professional accreditation.
- Use technology in a way that supports learning and vocational aspirations.
- Develop a regional and international outlook in relation to learning.
- Understand the cross-cultural issues of interdisciplinary study and teams.
- Articulate easily from previous tertiary study to complete a degree program.
- Develop the personal qualities and attitudes needed for professional success.
- Identify and understand the fundamental values that inform critical issues and
decision making.

Campus
Lilydale

Career Opportunities
The Sociology major, combined with appropriate units, can lead to career
opportunities in a diverse range of fields. For example, graduates often work in
areas of social research, administration, policy and planning, welfare, community
development, human resources, policy and program evaluation and marketing,
as well as many other sectors of society.
The Psychology major, combined with appropriate units, can lead to career
opportunities in a range of organisations to work as human resource managers,
marketing and advertising personnel, information processing professionals,
educational psychologists and research officers. Further studies in areas of
professional psychology such as clinical, counselling, organisational, forensic,
developmental, health, human factors and sports psychology can lead to a wide
range of career opportunities.

Media and Communications graduates find career opportunities in a range of
journalism, radio, public relations or communications research.

Professional Recognition
The Psychology program is accredited by the Australian Psychological Society
(APS).

Course Duration
Three years full-time or approximately six years part-time.

Course Structure
Students undertake a total of twenty-four units of study each of 12.5 credit
points, consisting of majors and minors and elective units. Students are required
to complete at least four units at Stage 3 and no more than ten units at Stage 1.
Satisfactory completion of the course will require the inclusion of either:
- One major and two minors.
- One major and one minor.
- Two majors.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study
LCE201 Careers in the Curriculum to be awarded the degree. Careers in the
Curriculum (CIC) is an innovative unit designed to assist Swinburne students to
ehance their employability and career prospects. It is usually undertaken in the
second year of your course and is compulsory for all undergraduate students
who commence their course from 2007 onwards. Students studying CIC will not
incur a HECS or fee debt as the cost will be met by the university as part of an
initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming
undergraduates from 2007 will undertake 25 credit points of professionally-
focused final year major projects within their programs of study. Entry with
advanced standing may require alternate study sequences to be undertaken.

Majors/Minors & Specialisations
Core Social Science Units
It is recommended that students complete five of the following eight Core Social
Science units:

- LCL100 Learning and Communication Behaviour
- LCR100 Statistics and Research Methods
- LIN100 Aboriginal Australia: Victorian people, places and experiences
- LSY100 Psychology 100
- LSM102 Introduction to Media
- LSS100 Introduction to Sociology
- LPR100 Professional Communication Practice
- LSM101 Cultural Perspectives on Science and Technology

At least one major must be taken from:
- Media Studies
- Psychology
- Public Relations
- Sociology
In addition students may select majors in:
- Accounting
- e-Commerce
- Economics/Finance
- Human Resource Management
- Management
- Marketing
- Public Relations
Minors are offered in:

- Accounting
- Business Law
- Economics
- Economics/Finance
- eEnterprise
- Human Resource Management
- Management
- Marketing
- Psychology
- Public Relations
- Social Statistics
- Sociology
- Tourism

A minor comprises four units post Stage 1, with at least two units at Stage 3. For professional recognition in Accounting or Psychology, students must take units as specified.

In addition to units of study included in majors or minors, students can also select the following single electives:

- LIN100 Aboriginal Australia: Victorian people, places and experiences
- LSM101 Cultural Perspectives on Science and Technology
- LCL100 Learning and Communication Behaviour
- LZZ301 Work Integrated Learning Project
- LBX300 Global Business Practice and Culture

Electives Plus Sequences

Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Enterprise/Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Winter Term

Students also have the opportunity to speed up, slow down, or spread out their studies by enrolling in one or two selected elective units of study in a six-week winter term.

Entry Requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any). 2007 Round 1 Cut-In ENTER: 60.40 (CSP-FT)

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 35201 (CSP-FT), 35202 (Fee-FT), 35151 (CSP-PT), 35152 (Fee-PT), 35203 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Misty year applications are made directly to Swinburne.

Bachelor of Social Science (Psychology) [L052]

The Bachelor of Social Science (Psychology) will provide students with skills and abilities pertinent to a variety of professional careers in the public and private sectors of employment. Students will be encouraged to develop a theoretical insight into their chosen discipline, to enable them to understand not only current developments in society and the workplace, but also to adapt and respond appropriately to future developments as they occur. In addition, the course is designed to enhance a number of generic skills highly valued by employers and also important for the development of the individual. Such skills include self-awareness, presentation and communication, and skills for the acquisition and maintenance of learning and knowledge.

Aims & Objectives

The Bachelor of Social Science (Psychology) aims to enable students to:

- Develop learning skills in an interdisciplinary environment.
- Communicate effectively in writing, orally and electronically
- Experience a breadth of disciplinary studies and intellectual processes
- Study combinations of units which enable students to undertake further studies leading to professional accreditation in Psychology
- Use technology in a way that supports learning and vocational aspirations
- Develop a regional and international outlook in relation to learning
- Understand the cross-cultural issues of interdisciplinary study and teams
- Develop the personal qualities and attitudes needed for professional success
- Identify and understand the fundamental values that inform critical issues and decision making

Campus

Lilydale

Professional Recognition

The Bachelor of Social Science at the Faculty of Higher Education, Lilydale includes a major sequence in Psychology which is currently accredited by the Australian Psychological Society (APS). Registration with the APS is currently in progress.

Course Duration

Three years full-time or equivalent part-time.

Course Structure

The Bachelor of Social Science (Psychology) consists of 300 credit points made up of twenty-four units (each 12.5 credit points). The twenty-four units consist of core units, majors and minors, and elective units. Students are required to complete at least four units at Stage 3 and no more than ten units at Stage 1.

Majors/Minors & Specialisations

To qualify for the Bachelor of Social Science (Psychology) degree, students must complete three (3) units from the Social Science core; a major component of study in Psychology, and a minor in Social Statistics. The total of 24 units is chosen as follows:

Social Science Core

Choose 5 units from:
- LCL100 Learning and Communication Behaviour
- LPR100 Professional Communications Practice
- LSM102 Introduction to Media
- LSS100 Cultural Perspectives on Science, Technology and Society
- LSY100 Introduction to Sociology

Major sequence in Psychology (Core +9 units)

LOR100 Statistics and Research Methods
LSY100 Psychology 100
Minor in Social Statistics (4 units)

Elective units offered as a minor include:
- Accounting
- Business Law*
- eCommerce
- Economics
- Economics/Finance
- eEnterprise*
- Human Resource Management
- Management
- Marketing
- Media Studies
- Public Relations
- Sociology
- Tourism

# Only offered as a minor.

In addition to the following general program rules apply:
- Students must complete 25 credit points of project work in the final year of the program in order to meet the requirements of the Swinburne Model for Professional Learning.
- Students must complete the zero-credit point 'Careers in the Curriculum' unit of study (usually taken in the penultimate year of study)

Electives

Electives provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline. Students can select any units of study in any major or minor offered at Higher Education Lilydale as elective units. Please note that some prerequisites may apply.

In addition to units of study included in majors or minors, students can also select the following single electives:
- LiN100 Aboriginal Australia: Victorian people, places and experiences
- LSM101 Cultural Perspectives on Science and Technology
- LCL100 Learning and Communication Behaviour
- LZZ301 Work Integrated Learning Project
- LBX300 Global Business Practice and Culture

Electives Plus

Students undertaking this program can choose to incorporate an Electives Plus sequence. Electives Plus sequences comprise 3 related units of study and provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree disciplines. Where Electives Plus sequences contain units of study that overlap with the Recommended Study Sequence, students will need to select additional electives to ensure completion of 24 units of study. Current Elective Plus sequences are:
- Design, Process and Strategy
- Effective Communication
- Enterprising Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Entry Requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 and 4 - a study score of at least 20 in English (any). Students not holding an appropriate Year 12 or equivalent qualification may be admitted on the basis of extensive work experience. A quota for this entry applies.

This program is available to international students who have satisfactorily completed an appropriate Year 12 qualification, or its equivalent. International students must also have achieved an overall score of 6.0 with no band below 5.5 for the IELTS academic module, or equivalent.

2007 Round 1 Clearly-in ENTER: new course for 2008

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).


For further information, visit the VTAC website at: www.vtac.edu.au

Part-time study is also available to Australian citizens and holders of Australian residency.

Bachelor of Business / Bachelor of Social Science [L067]

In today's competitive environment, there is an increasing demand by employers for graduates with flexibility and expertise beyond the limits of a narrow vocational orientation, and the ability to apply problem-solving skills over a range of areas. This double degree course prepares students for employment or self-employment in the rapidly changing cultural, technological and business environments.

Throughout the Social Science stream, students are encouraged to develop skills in investigation and enquiry which may be applied to a range of situations. Social Science students learn how to gather, synthesise and assess information, how to conceptualise issues, and to express themselves effectively both orally and in writing.

The Bachelor of Business course introduces the world of business through a range of compulsory core units and allows specialisation in a number of streams. The double degree course is designed to enhance a number of important generic skills which employers value, such as self-awareness, presentation and communication skills, and skills for the maintenance of life-long learning.

Aims & Objectives

The course aims to provide students with a broad experience in both business and social science disciplines.

Campus

Lilydale

Career Opportunities

The wide scope of available specialisations within the double degree allows for a diverse range of career opportunities. Such opportunities are available both in Australia and overseas, and can be found within commerce and industry, and the public sector. A sample of the various areas of employment include: enterprise marketing to small/medium sized business management, entry level positions in the programming and information technology fields, human resources, social work, administration and research, entry level positions in multimedia development, web page development and on-line publishing, market research, advertising, public relations, and financial advice.
Professional Recognition
Accounting graduates are eligible to apply for membership of either the CPA or the Institute of Chartered Accountants in Australia. The Psychology program is accredited by the Australian Psychological Society (APS). Students seeking professional recognition may not be able to complete a double degree without undertaking extra units.

Course Duration
Four years full-time or approximately eight years part-time. An optional and additional year of Industry-Based Learning (IBL) is also available to full-time students.

Students may accelerate progress by undertaking some units of study during the summer semester.

Course Structure
To complete the double degree, students need to successfully complete thirty-two units of study consisting of core units, other compulsory units, and one of the following combinations:

- Two majors and two minors.
- Three majors and one minor.

Course Business Units
Students are required to complete five of the following seven core business units:

- **LAI100** Introduction to Management
- **LBL100** Introduction to Commercial Law
- **LBC100** Accounting 1*
- **LAI100** Information Systems Fundamentals
- **LBC101** Accounting 2*
- **LBE100** Microeconomics
- **LBM100** Marketing Concepts
- **LBB100** Introduction to Commercial Law
- **LCR100** Statistics and Research Methods
- **LTE100** Introduction to Management

* LBC101 Accounting Fundamentals is an alternative for students not wishing to undertake further studies in Accounting or Economics/Finance.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study LCE001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Majors/Minors & Specialisations
Business major (at least one):

- Accounting
- eCommerce
- Economics
- Economics/Finance
- Human Resource Management
- Management
- Marketing
- Public Relations
- Tourism

Social Science major (at least one):

- Media Studies
- Public Relations
- Psychology
- Sociology

Electives as required.

Students must ensure that they complete at least ten and no more than twelve Stage 1 units, and at least six Stage 3 units.

- Students wishing to obtain professional recognition in Accounting must ensure requirements are met.
- Students wishing to obtain professional recognition in Psychology must ensure requirements are met.

Electives
Electives provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline. Students can select any units of study in any major or minor offered at Higher Education Lilydale as elective units. Please note that some prerequisites may apply.

In addition to units of study included in majors or minors, students can also select the following single electives:

- **LIN100** Aboriginal Australia: Victorian people, places and experiences
- **LST101** Cultural Perspectives on Science and Technology
- **LCL100** Learning and Communication Behaviour
- **LZZ301** Work Integrated Learning Project
- **LXX300** Global Business Practice and Culture

Electives Plus
Students undertaking this program can choose to incorporate an Electives Plus sequence. Electives Plus sequences comprise 3 related units of study and provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree disciplines. Where Electives Plus sequences contain units of study that overlap with the Recommended Study Sequence, students will need to select additional electives to ensure completion of 24 units of study. Current Elective Plus sequences are:

- **Design: Process and Strategy**
- **Effective Communication**
- **Entrepreneurship**
- **Establishing and Running a Business**
- **Information Orientation and Knowledge Management**
- **Language Practice and Culture**
- **Multimedia & Web Development**
- **Sustainability**
- **The Networked Economy**
- **Undergraduate Research Skills**

Winter Term
Students also have the opportunity to speed up, slow down, or spread out their studies by enrolling in one or two selected elective units of study in a six-week winter term.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any).
2007 Round 1 Clearly-in ENTER: n/a

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 35141 (CSP), 35142 (Fee), 35143 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
Mid-year applications are made directly to Swinburne.

Lilydale Specialisations

Accounting - Major/Minor
Accounting is the basic language of business. The accounting units of study offered cover the many different aspects that accounting embraces in today's business activities. The overall emphasis is on providing information and analytical tools which improve the decision making process throughout an organisation.

Stage 1 Accounting gives students an overview of accounting from a user’s perspective: how to read and analyse accounting reports. Accounting information is an important basis on which many decisions in all areas of business are made.

Stage 2 units of study introduce both the process of creating accounting reports and developing other accounting information for decision-making. Students learn
to use a variety of analytical tools and recording processes. Units of study cover a range of areas from accounting as a business computer information system, to developing information to assist the marketing, purchasing, production and administrative functions, through to financial management of the firm.

In Stage 3, units of study can be taken which provide students with additional analytical tools used in decision-making in a wide variety of business problems. In addition, further specialist units of study in tax, auditing, financial reporting and personal investment can be studied.

Some accounting units of study can be counted towards an accounting major or minor, or towards a finance major or minor, but not both at the same time. This illustrates the broad range of studies which come under the accounting umbrella.

Students with accounting majors or minors find rewarding work in industry, commerce, the public sector, the finance industry or business consulting. Refer to the Bachelor of Business structure.

Details of major
This combination is illustrative. Other combinations or subject choices are possible provided prerequisites are met.

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>LBC100</th>
<th>Accounting 1</th>
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</thead>
<tbody>
<tr>
<td>Stage 2</td>
<td>LBC200</td>
<td>Accounting Systems (P)</td>
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<tr>
<td></td>
<td>LBC201</td>
<td>Corporate Accounting (P)</td>
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<td></td>
<td>LBC202</td>
<td>Management Accounting I (P)</td>
</tr>
<tr>
<td></td>
<td>LBC203</td>
<td>Corporate Accounting Systems (P)</td>
</tr>
<tr>
<td></td>
<td>LBC204</td>
<td>Financial Management I (P)</td>
</tr>
<tr>
<td>Stage 3</td>
<td>LBC300</td>
<td>Accounting Theory (P)</td>
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<tr>
<td></td>
<td>LBC301</td>
<td>Taxation (P)</td>
</tr>
<tr>
<td></td>
<td>LBC302</td>
<td>Auditing (P)</td>
</tr>
<tr>
<td></td>
<td>LBC303</td>
<td>Personal Investment Issues</td>
</tr>
<tr>
<td></td>
<td>LBC306</td>
<td>Strategic Financial Management</td>
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</tbody>
</table>

Accounting for Professional Recognition:
Students wishing to apply for professional recognition with CPA Australia or the Institute of Chartered Accountants in Australia must study the following combination of units:

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>LBC100</th>
<th>Accounting 1 (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 2</td>
<td>LBC200</td>
<td>Accounting Systems (P)</td>
</tr>
<tr>
<td></td>
<td>LBC201</td>
<td>Corporate Accounting (P)</td>
</tr>
<tr>
<td></td>
<td>LBC202</td>
<td>Management Accounting I (P)</td>
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<tr>
<td></td>
<td>LBC203</td>
<td>Corporate Accounting Systems (P)</td>
</tr>
<tr>
<td></td>
<td>LBC204</td>
<td>Financial Management I (P)</td>
</tr>
<tr>
<td>Stage 3</td>
<td>LBC300</td>
<td>Accounting Theory (P)</td>
</tr>
<tr>
<td></td>
<td>LBC301</td>
<td>Taxation (P)</td>
</tr>
<tr>
<td></td>
<td>LBC302</td>
<td>Auditing (P)</td>
</tr>
<tr>
<td></td>
<td>LBC303</td>
<td>Personal Investment Issues (E)</td>
</tr>
<tr>
<td></td>
<td>LBC306</td>
<td>Strategic Financial Management (E)</td>
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</table>

Other units of study
<table>
<thead>
<tr>
<th>LBE100</th>
<th>Microeconomics (P)</th>
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<tbody>
<tr>
<td>LBE200</td>
<td>Macroeconomics (P)</td>
</tr>
<tr>
<td>LBL100</td>
<td>Introduction to Commercial Law (P)</td>
</tr>
<tr>
<td>LBL200</td>
<td>Company Law (P)</td>
</tr>
<tr>
<td>LGR100</td>
<td>Information Methods (P)</td>
</tr>
<tr>
<td>LGE100</td>
<td>Statistics and Research Methods (P)</td>
</tr>
<tr>
<td>LJE100</td>
<td>Introduction to Management (P)</td>
</tr>
</tbody>
</table>

(E) = Compulsory elective

Details of minor
This combination is illustrative. Other combinations or subject choices are possible provided prerequisites are met.

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>LBC100</th>
<th>Accounting 1</th>
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</thead>
<tbody>
<tr>
<td>Stage 2</td>
<td>LBC202</td>
<td>Management Accounting I</td>
</tr>
<tr>
<td></td>
<td>LBC203</td>
<td>Computer Cost Accounting Systems</td>
</tr>
<tr>
<td></td>
<td>LBC204</td>
<td>Financial Management I</td>
</tr>
<tr>
<td>Stage 3</td>
<td>LBC306</td>
<td>Strategic Financial Management</td>
</tr>
</tbody>
</table>

Business Law - Minor
Refer to the Bachelor of Business structure.

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>LBL100</th>
<th>Introduction to Commercial Law</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LBL200</td>
<td>Company Law</td>
</tr>
<tr>
<td></td>
<td>LBL201</td>
<td>Marketing Law</td>
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<tr>
<td></td>
<td>LBL300</td>
<td>Cyber Law</td>
</tr>
<tr>
<td></td>
<td>LBC301</td>
<td>Taxation</td>
</tr>
<tr>
<td></td>
<td>LBL301</td>
<td>Law of Employment</td>
</tr>
</tbody>
</table>

eCommerce - Major/Minor
The eCommerce major consists of three second year and three third year units of study, post Stage 1:

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>LEB105</th>
<th>eCommerce Fundamentals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 2</td>
<td>LEB210</td>
<td>Business Models of eCommerce</td>
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<tr>
<td></td>
<td>LEB211</td>
<td>Developing Business Value</td>
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<tr>
<td></td>
<td>LEB212</td>
<td>The Networked Economy</td>
</tr>
<tr>
<td>Stage 3</td>
<td>LEB310</td>
<td>Designing eCommerce and eFS Systems</td>
</tr>
<tr>
<td></td>
<td>LEB311</td>
<td>Developing eCommerce and eFS Systems</td>
</tr>
<tr>
<td></td>
<td>LEB312</td>
<td>Business Transformation</td>
</tr>
</tbody>
</table>

Economics - Major/Minor
Understanding economic principles is an important requirement for a career in business. An economic approach to important practical social and business problems is the focus of the economics discipline. Economics is the study of what, how and for whom to produce: in essence, how society can achieve the maximum benefit from available resources. It emphasises the importance of sound decision making, at the level of the individual, the firm, and the society as a whole. Economics examines problem areas such as unemployment, inflation, foreign debt and environmental degradation. It also provides guidance to decision makers on appropriate strategies for successful operation in both local and international markets. Within the economics major or minor, students also develop skills in interpreting and evaluating economic commentaries and reports and in applying economic principles to real issues facing business and government.

Students completing an economics major or minor find employment in a wide range of challenging fields in both the public and private sectors. These include administration, management consulting, economic policy evaluation, financial analysis, banking and market analysis. Refer to the Bachelor of Business structure.

Details of major
This combination is recommended. Other combinations or unit of study choices may be negotiated.
Economics/Finance - Major/Minor

The combination of Economics and Finance explores the role and nature of financial and capital markets - which includes regulatory authorities, corporations, and government. Finance theory is a relatively recent development and draws on the disciplines of both economics and accounting. An Economics/Finance major or minor will equip graduates with a knowledge of financial instruments which are available, investment options available for both personal and enterprise investment, how different forms of financial markets function, the relationship between risk and reward and the relationship between the business enterprise and government. Finance graduates who undertake further study may also qualify as Certified Financial Planners.

Refer to the Bachelor of Business structure.

Details of Major

This combination is recommended. Other combinations or unit of study choices may be negotiated.

Stage 1

LBE100 Microeconomics
LBE200 Macroeconomics

Stage 2 and 3

LBE204 Financial Markets and Institutions
LBE300 Economic Policy in Society
LBE301 International Trade and Finance
LBE302 Economic Development

Details of Minor

This combination is recommended. Other combinations or unit of study choices may be negotiated.

Stage 1

LBC100 Accounting 1
LBE100 Microeconomics

Stage 2

LBE200 Macroeconomics
LBE204 Financial Management 1

Stage 3

LBE200 Macroeconomics
LBE204 Financial Management 1

Stage 3

LBE304 Personal Investment Issues
LBE301 International Trade and Finance

eEnterprise - Minor

The eEnterprise minor consists of the following units:

Stage 1

LEB105 eCommerce Fundamentals

Stage 2

LEB213 Managing People in the Networked Economy
LEB214 eEnterprise Strategy and Project Management

Stage 3

LBE300 Cyber Law
LBE313 eEnterprise Performance Measurement

Human Resource Management - Major/Minor

Human Resource Management involves managing and coordinating the productive use of people to achieve the strategic business objectives of the organisation. Most HRM departments are responsible for planning, coordinating and advising on legal aspects of employment; determining, attracting and selecting employees and developing, rewarding and managing human resources. It serves as a catalyst for implementing and managing change and development and takes a 'line management' perspective to contribute to corporate profit margins.

Graduates with a Human Resource Management major are well equipped to work in the HR departments of organisations. This HRM major, which combines theory and practical experiences, makes students immediately attractive to an employer seeking a good administrator who is also a strategic thinker.

Refer to the Bachelor of Business structure.

Details of Major

This combination is recommended. Other combinations or unit of study choices may be negotiated.

Stage 1

LTE100 Introduction to Management

Stage 2

LTE200 Organisations and Management
LTE201 Human Resource Management
LTE202 Organisational Behaviour

Stage 3

LSS300 Organisations and Society

Details of Minor

This combination is recommended. Other combinations or unit of study choices may be negotiated.
Stage 3
LSS300 Organisations and Society

Management - Major/Minor
Management addresses the principles and processes of management strategies, structures and practices. In the context of a competitive globalised economy, students study how to develop expertise in professional management. The course recognises the diverse relationships accompanying increasingly rapid change in organisations, development processes and the nature of work. It also examines the challenge that organisations face to incorporate e-business and e-commerce into their operations. Students are challenged to become proactive and self-managing, and are encouraged to develop creative decision making skills. The discipline incorporates a work integrated learning project where students may investigate, on an individual level or in groups, a specific area of management.

Graduates with management major are well-equipped to start a professional management career. Their studies, which combine theory with practical experiences, make them immediately attractive to an employer.

Refer to the Bachelor of Business structure.

Details of Major
This combination is recommended.

Stage 1
LTE100 Introduction to Management

Stage 2
LTE200 Organisations and Management
LTE201 Human Resource Management
LTE202 Organisational Behaviour

Stage 3
Any three of:
LTE300 Organisational Change and Development
LTE301 Strategic Planning and Project Management
LTE302 Leadership and Management
LZL201 Work Integrated Learning Project

Details of Minor
This combination is recommended.

Stage 1
LTE100 Introduction to Management

Stage 2
LTE200 Organisations and Management
LTE202 Organisational Behaviour

Stage 3
Any two of:
LTE300 Organisational Change and Development
LTE301 Strategic Planning and Project Management
LTE302 Leadership and Management

Marketing - Major/Minor
Successful companies employ customer driven strategies. Marketing deals with the building and implementation of customer focus. The meaning of marketing is often misunderstood: one need look no further than the many advertisements without any real substance as to customer benefits and/or the delivery of these benefits. Frequently, no distinction is made between advertising, selling and marketing.

Marketing changes the focus and the attitudes prevailing in the organisation, provided staff understand the meaning of marketing. What does marketing mean? The answer is relatively simple: put yourself inside the skin of your customers and forget yourself for a while. Instead of thinking on behalf of your customers you have to learn to listen to your clients, accept what they say at face value and deliver what they want to satisfy their particular needs, thereby achieving long-term profitability or other goals through repeat business.

At Swinburne, we explain the components of a business plan and marketing's central role in strategy. Students are introduced to topics such as consumer behaviour, demand determinants, customer focus, market research, market planning, marketing channels, product and services management, advertising and promotion, international marketing and business to business marketing.

Students are encouraged to think through problems and to find their own answers. They are introduced to frameworks, models and thinking processes to ensure that they make the most of their abilities. A variety of practical assignments and presentations ensure that the theory is put into practice, for the benefit of students and employers. Vision, understanding, creativity, and the power to influence the future are the outcomes of the marketing curriculum.

Opportunities are available in a wide range of fields such as sales and marketing, tourism, accountancy, human resources, information technology and general management.

Refer to the Bachelor of Business structure.

Details of major
This combination is mandatory. Other combinations or unit of study choices may be negotiated.

Stage 1
LBM100 Marketing Concepts
LCR100 Statistics and Research Methods

Stage 2
LBM200 Marketing Behaviour
LBM201 Marketing Planning
LBM202 Marketing Communications
LSQ201 Survey Research Methods

Stage 3
LBM300 Product Management
LBM301 Services Marketing and Management

Details of minor
This combination is recommended. Other combinations or unit of study choices may be negotiated.

Stage 1
LBM100 Marketing Concepts
LCR100 Statistics and Research Methods

Stage 2
LBM200 Marketing Behaviour
LBM201 Marketing Planning
LBM202 Marketing Communications

Stage 3
One of:
LBM300 Product Management, OR
LBM301 Services Marketing and Management

Media Studies - Major/Minor
Media Studies at Swinburne offers a broad range of units which are essentially analytical and critical in their approach. During the later stage of the major, students can acquire hands on skills in publishing and production procedures.

Graduates of the Bachelor of Social Science with a major in Media Studies have been employed in many related fields: commercial and public relations, television, print journalism, radio production, publishing, research, advertising and communications research and marketing. Many graduates have found that, although not directly employed in a media industry, the knowledge and communications skills acquired in the course have many useful applications in their work and life.

Students undertaking the Bachelor of Social Science can major in Media Studies by completing six units post Stage 1. Note: for students studying Marketing and Public Relations, if LBM202 Marketing Communications is chosen as part of the Public Relations major or minor, then LBL201 Marketing Law must be included in the Marketing major or minor.

Media Studies Major
Stage 1
LSM102 Introduction to Media

Stage 2
LSM200 eCulture
Psychology - Major/Minor

The undergraduate psychology program provides students with an introduction to psychology in all three stages. Stage 1 in psychology introduces students to a range of topics in psychology and experimental design and analysis. Stage 2 and 3 follows up on some of these areas in more detail. In Stage 1 attention is also given to vocational skills and knowledge relevant to applied fields.

The Psychology major, combined with appropriate units of study can lead to career opportunities in a range of organisations to work as human resource managers, marketing and advertising personnel, information processing professionals, educational psychologists and research officers. Further studies in areas of professional psychology such as clinical, counselling, organisational, forensic, developmental, health, human factors and sports psychology can lead to a wide range of career opportunities.

It should be noted that the undergraduate psychology program is sequential in nature; completion of the prescribed units of study at one stage of the program is a prerequisite for study at the next level. All units of study offered in this program are semester units. Thus a student must complete both Stage 1 psychology units before enrolling in any Stage 2 psychology units, and must complete all Stage 2 psychology units before enrolling in any Stage 3 units. Details of these prerequisite arrangements are shown in entries for all psychology units of study. Students should note that each psychology unit of study is worth one semester unit of study.

Psychology for Professional Recognition

Stage 1

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>LSY100</td>
<td>Psychology 100</td>
</tr>
<tr>
<td>LSY101</td>
<td>Psychology 101</td>
</tr>
<tr>
<td>LCR100</td>
<td>Statistics and Research Methods</td>
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</table>

Stage 2

<table>
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<tr>
<th>Unit Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>LSY200</td>
<td>Cognition and Human Performance</td>
</tr>
<tr>
<td>LSY201</td>
<td>Developmental Psychology</td>
</tr>
<tr>
<td>LSO200</td>
<td>Design and Measurement 2</td>
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</tbody>
</table>

Stage 3

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>LSO300</td>
<td>Design and Measurement 3</td>
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<tr>
<td>LSY300</td>
<td>The Psychology of Personality</td>
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<td>LSY301</td>
<td>Psychological Measurement</td>
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<td>LSY304</td>
<td>Abnormal Psychology</td>
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<tr>
<td>LSY307</td>
<td>Social Psychology</td>
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Psychology Major

Stage 1

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<th>Unit Code</th>
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<tbody>
<tr>
<td>LSY100</td>
<td>Psychology 100</td>
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<tr>
<td>LSY101</td>
<td>Psychology 101</td>
</tr>
<tr>
<td>LCR100</td>
<td>Statistics and Research Methods</td>
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Stage 2

<table>
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<tr>
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Stage 3

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<th>Unit Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>LSY300</td>
<td>Design and Measurement 3</td>
</tr>
<tr>
<td>LSY304</td>
<td>Abnormal Psychology</td>
</tr>
</tbody>
</table>

Public Relations - Major/Minor

A PR major or minor can be undertaken in the Bachelor of Business or Bachelor of Social Science.

Public Relations (PR) involves researching what people think about issues and organisations, and helping to influence those views in an ethical manner. The objective is to place PR clients and employers in a favorable light, and use modern media to do it. However, public relations is not just about media publicity. There are many sub-fields of PR practice. They include community relations (helping organisations be responsive to the needs and opinions of the communities where they operate), government relations (making a case to government policymakers), investor relations (building relationships with shareholders and investment analysts), marketing communications and crisis communication. Sports public relations and celebrity public relations are two more specialised areas.

While graduates in PR may seek employment in public relations, they also find careers in event management, promotion, advertising, marketing and policy development in both public and private sectors. Public relations graduates have the opportunity to develop in-depth expertise that is often recognised by above-average salaries.

Public Relations major

- LPR100 Professional Communication Practice
- LPR200 Public Relations Theory and Practice
- LPR201 Public Relations Writing
- LBM202 Marketing Communications
- LFR300 Strategic Public Relations Planning
- LFR301 Public Relations Campaigns
- LFR302 Events Management (available 2009)

Public Relations minor

- LPR100 Professional Communication Practice
- Plus any four units including at least one Stage 3 unit:
  - LPR200 Public Relations Theory and Practice
  - LPR201 Public Relations Writing
  - LBM202 Marketing Communications
  - LFR300 Strategic Public Relations Planning
  - LFR301 Public Relations Campaigns
  - LFR302 Events Management
Social Statistics - Minor
This selection of units of study constitutes a minor sequence in Social Statistics, enabling students without a mathematical background to develop a broad range of practical skills in data collection and data analysis.

All businesses and organisations have a need to make sense of quantitative information. Statistical expertise is a sought after quality in employees across a variety of fields, including marketing, psychology, tourism and sociology.

To qualify for the minor students must complete the units of study as outlined below. However, if you are undertaking studies in Psychology for professional accreditation you will need to undertake all of the units of study in Social Statistics to qualify for the minor.

Stage 1
LOR100 Statistics and Research Methods

Stage 2 and 3
LSQ200 Design and Measurement 2
LSQ201 Survey Research Methods
LSQ202 Qualitative Research
LSQ300 Design and Measurement 3
LSQ301 Research Project

Sociology - Major/Minor
Sociology is the study of people in groups, ranging from the family to whole societies, such as Australia. It is about how individual and group behaviour shapes groups and society, and in turn, how behaviour is shaped by society and its institutions. A group may be as diverse as a large firm, a school, a rock band, the public service, or a voluntary agency such as a sporting club or community housing association. An appreciation of the different ways social group behaviour can be explained, and the various methods which can be used to get a better understanding of the social world is important to Sociology.

Understanding group behaviour, being familiar with different explanations for this behaviour, and being able to gather data to explore aspects of the social world are important skills, both for employment purposes and for being a knowledgeable and participating citizen of Australian society.

The teaching of sociology is focussed on both conceptual and applied skills including problem identification, statistics, research methods, the formation of life-long learning skills, policy design and implementation. What differentiates sociology at Swinburne from what is taught by sociology departments at other tertiary institutions is our emphasis on comparing Australia with other parts of the world, and in applying sociology to solve practical problems.

There are four specific types of skills we try to develop. First, we develop an awareness of core sociological concepts such as class, gender and ethnicity. Second, we show the different ways these concepts have been applied to specific fields of study such as the family, the city, deviance, gender and migration. Third, we explore how governments respond to social problems through policy initiatives, and we explain how these initiatives can be evaluated. Finally, we develop an acute awareness of how to gather data about the social world, and how this data can be used for a wide range of purposes.

Few people who complete a major in sociology end up being employed as sociologists. This is equally so for graduates of many other disciplines in the social sciences. Sociology graduates typically find careers in the areas of social research, administration, planning, community development, human resources, policy development, and marketing. These positions all require the conceptual and skill-based training that comes from undertaking a degree in sociology.

Sociology Major
Stage 1
LSS100 Introduction to Sociology

Stage 2
LSS200 Difference, Deviance and Conformity
LSS201 Sociological Perspectives
LSS202 Ethnicity, Culture and Diversity Management: Australia in the Global Context

Stage 3
LSS300 Organisations and Society
LSS302 Research Approaches

LS303 Sociology and Social Policy

Sociology Minor
Stage 1
LS3100 Introduction to Sociology

Stage 2
Two or three of:
LS3200 Difference, Deviance and Conformity
LS3201 Sociological Perspectives
LS3202 Ethnicity, Culture and Diversity Management: Australia in the Global Context

Stage 3
One or two of:
LS3300 Organisations and Society
LS3302 Research Approaches
LS3303 Sociology and Social Policy

Tourism - Major/Minor
The tourism stream provides a more industry-specific focus for the understandings provided in the business units of study, and uses an interdisciplinary approach which views tourism as a form of human behaviour as well as a business interest. All units of study will encourage the development of important generic skills in presentation, problem solving, communication and life long learning.

Tourism is a rapidly growing area of the Australian economy. While a high percentage of the positions offered are relatively unskilled, part-time and casual, there is recognition in the industry of the need for professionally qualified managers, in whom business expertise is combined with an understanding of tourism. Graduates of this course may find employment in the wide range of tourism enterprises (eg. attractions, transport and tour services), in other enterprises where tourists are involved (eg. museums and national parks), in administration, or coordinating organisations such as regional tourism authorities. They will also be equipped to develop and run their own businesses in the tourism field.

Tourism Major
Stage 1
LTT100 Introduction to Tourism

Stage 2
LTT201 Tourism Destination Management
LTT202 Tourism Enterprise Development
LTT203 Tourism Services
LTT204 Regional Issues in Tourism

Stage 3
LTT300 Tourism Channels and Travel Management
LTT302 Planning and Management in Ecotourism

Tourism Minor
Stage 1
LTT100 Introduction to Tourism

Stage 2
Plus three of:
LTT201 Tourism Destination Management
LTT202 Tourism Enterprise Development
LTT203 Tourism Services
LTT204 Regional Issues in Tourism

Stage 3
Plus one of:
LTT300 Tourism Channels and Travel Management
LTT302 Planning and Management in Ecotourism
Faculty of Information and Communication Technologies

Information and communication technologies are pervasive in the contemporary world. The capabilities that have emerged as these technologies have converged have enabled wonderful developments in all aspects of life, from space travel to international banking, from human communication by email to interactive television.

At Swinburne, the Faculty of Information and Communication Technologies (ICT) is home to the disciplines of computer science, software engineering, information systems, telecommunications and networks, astronomy and computational science. We offer some of Australia’s most innovative undergraduate programs in IT and telecommunications, as well as challenging postgraduate coursework programs in IT, networks and astronomy, and support several research programs that are recognised as world-class.

Our approach to education is highlighted by the prestigious Bachelor of Information Technology which is sponsored by over 20 of Australia’s top companies with guaranteed scholarships of over $10,000 per annum to every student. The curriculum, which combines the latest in information technology and a strong exposure to the business context in which it is applied, is developed through collaboration with sponsoring companies, with all students spending two 20-week periods in industry working with a sponsoring organisation.

Further Information
Phone: +61 3 9214 5505
Fax: +61 3 9214 5320
Email: info@ict.swin.edu.au
Website: www.swinburne.edu.au/ict

Bachelor of Business Information Systems [BIS]

Information Systems is widely diffused across modern organisations, and industry is demanding IS graduates who are well versed in business concepts, in understanding the role and contribution of information systems in driving and enabling the achievement of business goals and objectives; and in managing the vital information systems resource in organisations. This degree has been designed to meet this need, and will produce graduates who are competent and knowledgeable in the discipline, possess excellent interpersonal and communication skills, and who are able to critically analyse business problems and develop creative and innovative enterprise solutions.

Students will develop competence in basic technical skills, but more emphasis will be placed on business analysis and problem solving, requirements analysis, project management, systems acquisition, process modelling, design and innovation, development and implementation of IS services, enterprise systems, understanding and managing IS related organisational risk, and the management of information systems in organisations.

The program is structured with a core which provides an extensive education in IS education, and which equips students with the requisite knowledge and skills for entry level jobs in a range of analytical and technical areas.

Aims & Objectives
- To meet the requirements of industry for an appropriate blend of breadth and depth of IS knowledge and an understanding of underlying concepts and theories as applied in practical and real world contexts.
- To develop problem solving skills ensuring that graduates have the ability to analyse problems, design and/or source alternative innovative solutions based on soundly articulated business requirements, and make appropriate choices and recommendations.
- To equip graduates with required professional knowledge, skills, attributes and behaviours.
- To appreciate the role of information systems in contemporary organisational contexts.

Campus
Hawthorn, Sarawak

Career Opportunities
Graduates are likely to pursue careers in business and systems analysis, business process analysis, business requirements analysis, project management, enterprise systems consultancy, IS/IT consultancy, business relationship management, business development management, and when you have gained experience, as an IT Director or CIO.

Professional Recognition
This course is acknowledged as being at the professional level with the Australian Computer Society (ACS). The program has been externally vetted by ACS, ensuring it meets the highest standard of the profession and the industry.

Course Duration
Three years full-time. An optional and additional year of Industry-Based Learning may also be available.

Students holding an international student visa are not eligible for the optional Industry-Based Learning.

Course Structure

Students take a total of twenty-four units of study (or equivalent). The program of study must include:
- Thirteen Information Systems core units of study.
- Four nominated Business core units of study.
- One Industry Project unit of study.
- One Information Systems specialist unit of study.
- Two elective units of study from approved ICT or Business electives.
- Three elective units of study from approved ICT electives or any other discipline.

Note: It is possible to take up to five elective units from the Business studies area or up to three elective units from other study areas.

Careers in the Curriculum (CIC)

In addition to the above, students must complete a compulsory unit of study HIT0004 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Electives Plus Sequences

Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
- Design: Process and Strategy
- Effective Communication
- Entrepreneuring Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Final Year Experience - Major Projects

As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Units of Study

Note: It is possible to study one of two specialisations from approved ICT electives. The specialisations are Systems Management and Systems Development.

Systems Management Specialisation

Select four of the following:

HIT3078 Knowledge Management
HIT3412  Business Information Systems Analysis  
HIT3413  Business Intelligence  
HIT3419  Decision Analysis Systems  
HIT3423  Enterprise Systems Management  
HIT3414  Object Oriented Modelling  

Systems Development Specialisation  
HIT7245  Business Systems Programming in .NET  

Plus one of:  
HIT2420  Database Management Systems  
HIT3421  Database Implementation  

Plus two of:  
HIT2427  Object-Oriented Programming in .NET  
HIT3110  Component Based Development .NET  
HIT3426  Enterprise Systems Implementation  
HIT3421  Database Implementation  
HIT3422  Database Performance Issues  

Recommended areas of business study are:  
- Accounting  
- Human Resource Management / Organisation Behaviour  
- Marketing  
- Economics  
- Management  

It is possible to take up to five elective units from the Business studies area or up to three electives from other study areas.  

Electives  
Choose five electives according to the following rules:  
Two electives chosen from ICT Electives or Approved Business Electives; and  
Three electives chosen from ICT Electives or discipline areas other than ICT.  

ICT Electives  
- HIT3316  Usability  
- HIT3420  Database Management Systems  
- HIT2425  Business Systems Programming in .NET  
- HIT2427  Object-Oriented Programming in .NET  
- HIT3037  Programming in Java  
- HIT3078  Knowledge Management  
- HIT3220  Innovative Project  
- HIT3412  Business Information Systems Analysis  
- HIT3413  Business Intelligence  
- HIT3419  Decision Analysis Systems  
- HIT3421  Database Implementation  
- HIT3422  Database Performance Issues  

Other ICT electives may be chosen subject to timetabling, prerequisites and approval of program coordinator.  

Approved Business Electives  
- HBSG200  New Venture Development and Management  
- HBC220  Financial Information Systems  
- HBC221  Corporate Accounting  
- HBC222  Management Decision Making  
- HBC224  Financial Management  
- HMB111  Quantitative Analysis B  
- HBE110  Microeconomics  
- HBE220  Macroeconomics  
- HBG422  Organisation Design & Technology  
- HBG225  Human Resource Management in Contemporary Organisations  
- HBG320  Leadership and Organization Dynamics  
- HBL111  Law in Global Business  
- HBL220  Contract Law  
- HBM220  Market Behaviour  

NOTE: Availability of all electives is subject to timetable constraints.  

Recommended Study Sequence  

Stage 1  

Semester 1  
HBC110  Accounting for Success  
HIT1401  Introduction to Business Information Systems  
HIT1402  Database Analysis and Design  
HIT1403  ICT Environments  

Semester 2  
HBM110  The Marketing Concept  
HIT1404  Introduction to Programming in .NET  
HIT2405  Requirements Analysis and Modelling  

Stage 2  

Semester 1  
HIT3405  Enterprise Systems  
HIT3407  Information Systems Project Management  
HIT3408  Information Systems Risk and Security  
HBM220  Organisational Behaviour and Change  

Semester 2  
HIT0004  Careers in the Curriculum  
HIT2411  Business Data Communications & Networks  
HIT3409  Process Modelling  
HIT3410  Systems Acquisition and Implementation Management  

Elective  

Stage 3  
HITW005  Industry-Based Learning#  

# Note that this optional Industry Based Learning program is not available to international students.  

Stage 3 or 4  

Semester 1  
HIT3424  Information Systems Management  
HIT2420  Database Management Systems, OR  
HIT3412  Business Information Systems Analysis  

Elective  

Semester 2  
HIT3044  Professional issues in Information Technology  

Choose one of:  
- HIT3416  Industry Project (Analytical), OR  
- HIT3417  Industry Project (Technical), OR  
- HIT3427  Configuring Business Information Systems Solutions  

Elective  

Entry Requirements  
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.  

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any). Passes may be accumulated over more than one year.  

Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and have at least five years related work experience, may be considered for admission if they can demonstrate motivation and ability to succeed.  

2007 Round 1 Clearly-In ENTER: 70.65 (CSP), 80.45 (Fee)  

Application Procedure  
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).  
VTAC code: 34641(CSP), 34642 (Fee), 34643 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au

Applicants who believe they will receive an ENTER of at least 95.00, please refer to the Scholarships website detailed above.

**Bachelor of Computing [052]**

The Bachelor of Computing program is a three year course of study that combines studies in software development, information systems and computer networks. The program has a flexible structure allowing students to choose from a number of specialisations: software development, information systems, networks, multimedia and games development. The program will suit those students who are seeking a general information and communication technology (ICT) program with flexible outcomes, or those who have not decided which area of ICT to specialise in. Up to six electives may be taken from other disciplines including Biotechnology, Business, Multimedia and Social Sciences.

The flexibility of this program provides enhanced credit arrangements for students articulating from TAFE diplomas. Special arrangements for students with a TAFE diploma or advanced diploma may be found on the Swinburne Credit Transfer Database www.swinburne.edu.au/corporate/marketing/pathways/

Students who achieve satisfactory results during the course may apply to undertake an additional year of study, enabling them to graduate with an honours degree.

**Aims & Objectives**

Graduates of this course will possess:
- The skills necessary for working in a software development team on a small scale project.
- An understanding of the process of software development.
- Skills in requirements analysis, systems analysis and design.
- Skills in developing software in C, C++, Java or VB .NET.
- The communication and management skills required to manage projects successfully.
- An understanding of the social, legal and ethical issues confronting the information and communication technology professional.
- Knowledge of and experience in database, data communications and information systems.

**Campus**

Hawthorn, Sarawak

**Career Opportunities**

There are a large number of job roles available for those with software development qualifications and experience including enterprise systems application developer, quality assurance analyst, project manager, multimedia developer, systems architect, business requirements analyst, technical writer, application integration specialist, user interface analyst, contract manager, data warehouse architect, data mining specialist and help desk manager.

**Professional Recognition**

This course is acknowledged as being at the Professional Level (the highest level) with the Australian Computer Society (ACS). The program has been externally vetted by ACS, ensuring it meets the highest standard of the profession and industry.

**Course Duration**

Three years full-time. An optional and additional year of Industry-Based Learning (IBL) is also available.

Students holding an international student visa are not eligible for the optional Industry-Based Learning year.

Students entering the program with prior TAFE qualifications will receive credit allowing completion of the course in either 18 months or 2 years.

**Course Structure**

According to the following rules, students complete at least 300 credit points made up of:
- Programming Core Studies (25 credit points),
- Computing Core Studies (100 credit points),
- Project Core Studies (25 credit points)
- 50 credit points chosen from one of the ICT Specialisation Groups,
- 25 credit points chosen from ICT Elective Studies, and
- 75 credit points chosen from either ICT Elective Studies or Non-ICT Elective Studies

The Program Panel has the authority to approve additional elective studies for particular students. Such approvals will be advised to the Faculty Academic Committee.

**Careers in the Curriculum (CIC)**

In addition to the above, students must complete a compulsory unit of study HIT0004 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

**Final Year Experience - Major Projects**

As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

**Programming Core Studies**

Students must choose one unit from Level 1 and one unit from Level 2.

**Level 1 - choose one:**
- HIT1301 Algorithmic Problem Solving
- HIT1403 Introduction to Programming in .NET
- HIT2080 Introduction to Programming

**Level 2 - choose one:**
- HIT2302 Object-Oriented Programming
- HIT2427 Object-Oriented Programming in .NET
- HIT2425 Business Systems Programming in .NET
- HIT3181 Technical Software Development

**Please note:**
- HIT2302 requires HIT1301 as a pre-requisite.
- HIT3181 requires HIT2080 as a pre-requisite.

**Computing Core Studies**

- HIT1307 Internet Technologies
- HIT1401 Introduction to Business Information Systems
- HIT1402 Database Analysis and Design
- HIT2308 Software Development Practices, OR
- HIT2405 Requirements Analysis and Modelling
- HIT2316 Usability
- HIT2120 Data Communications and Security, OR
- HIT2411 Business Data Communications & Networks, OR
- HIT313 Telecomunication Technologies, OR
- HIT104 LAN Principles
- HIT3309 Software Project Practices and Management, OR
- HIT3407 Information Systems Project Management
- HIT3044 Professional Issues in Information Technology

If students undertaking HIT3407 to fulfill the Project Core Studies group will be required to take an additional ICT elective as part of the Computing Core Studies group.

**Project Core Studies**

Students undertaking the Information Systems specialisation will undertake:
- HIT3407 Information Systems Project Management
- HIT3416 Industry Project (Analytical), OR
- HIT3417 Industry Project (Technical)

Students undertaking the other specialisations will undertake:
- HIT3698 Agile Development Project
- HIT3061 Software Team Project

**Generic Skills Studies**

HIT0004 Careers in the Curriculum
Electives Plus Sequences

Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline. Students undertaking this course can choose to study Electives Plus sequences of up to three units from each of the following themes:

- Design: Process and Strategy
- Effective Communication
- Entrepreneurship and Innovation
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Majors/Minors & Specialisations

Four (4) units of study must be chosen from one of these specialisation groups:

- Software Development
- Information Systems - B.Computing
- Networks
- Multimedia and Games Development

Recommended Study Sequence

Example A (Software Development, Networks or Multimedia & Games Specialisations)

**Stage 1**

**Semester 1**

- HIT1401 Introduction to Business Information Systems (core)
- HIT1402 Database Analysis and Design (core)
- Elective

Choose either:

- HIT1301 Algorithmic Problem Solving (core), OR
- HIT2090 Introduction to Programming (core)

**Semester 2**

- HIT1307 Internet Technologies (core)
- HIT2316 Usability (core)
- Elective

Choose either:

- HIT2302 Object-Oriented Programming (core), OR
- HIT3161 Technical Software Development (core)

**Stage 2**

**Semester 1**

- HIT0054 Careers in the Curriculum (core)
- HIT2308 Software Development Practices (core)
- Elective

**Semester 2**

- HIT3309 Software Project Practices and Management (core)
- Elective

**Stage 3**

- HW050 Industry-Based Learning (optional) - Not available to international students

Stage 3 or 4

**Semester 1**

- HIT3098 Agile Development Project (elective)
- Elective
- Elective
- Elective

**Semester 2**

- HIT3061 Software Team Project (core)
- HIT3044 Professional Issues in Information Technology (core)
- Elective
- Elective

**Recommended Study Sequence**

Example B (Information Systems specialisation)

**Stage 1**

**Semester 1**

- HIT1404 Introduction to Programming in .NET (core)
- HIT1402 Database Analysis and Design (core)
- HIT1401 Introduction to Business Information Systems (core)
- Elective

**Semester 2**

- HIT2425 Business Systems Programming in .NET (core)
- HIT1307 Internet Technologies (core)
- HIT2316 Usability (core)
- Elective (e.g. HBM110)

**Stage 2**

**Semester 1**

- HIT0004 Careers in the Curriculum
- HIT2405 Requirements Analysis and Modelling (core)
- Elective
- Elective
- Elective

**Semester 2**

- HIT2411 Business Data Communications & Networks
- Elective
- Elective
- Elective

**Stage 3**

- HW050 Industry-Based Learning (Optional) - Not available to international students

**Stage 3 or 4**

**Semester 1**

- HIT3407 Information Systems Project Management (core)
- Elective
- Elective
- Elective

**Semester 2**

- HIT3044 Professional Issues in Information Technology (core)
- HIT3417 Industry Project (Technical) (core)
- Elective
- Elective

**ICT Elective Studies**

Choose 150 credit points of electives (12 units) according to the following rules:

- 50 credit points (4 units) chosen from one of the ICT Specialisation Groups,
- 25 credit points (2 units) chosen from ICT Elective Studies, and
- 75 credit points (6 units) chosen from either ICT Elective Studies or Non-ICT Elective Studies

Students with advanced standing (exemptions) will have limits on non-ICT Elective Studies, as follows:

- Students with 75 credit points or 87.5 credit points of advanced standing may only take up to 62.5 credit points (5 units) of Non-ICT Elective Studies.
**ICT Elective Units**

HET104  LAN Principles
HET306  Unix for Telecommunications
HET317  Network Security and Resilience
HET410  Network Administration
HET412  Networking and Online Games
HET424  IP Technologies
HIT1312  Computer and Logic Essentials
HIT2313  Computer Systems
HIT2420  Database Management Systems
HIT2425  Business Systems Programming in .NET
HIT302  Introduction to Artificial Intelligence
HIT3037  Programming in Java
HIT3046  Artificial Intelligence for Games
HIT3047  Real-Time Programming
HIT3057  Software Testing and Reliability
HIT3066  Software Tools
HIT3078  Knowledge Management
HIT3083  Digital Graphics
HIT3087  Advanced Java
HIT3099  Enterprise.NET
HIT3119  Enterprise Java
HIT3121  Internet Security
HIT3138  Intelligent Systems
HIT3149  Analysis, Modeling and Design
HIT3156  Software Process Improvement
HIT3166  Software Testing Processes and Automation
HIT3172  Object-Oriented Programming in C++
HIT3181  Technical Software Development
HIT3197  Advanced .NET Programming
HIT3243  Games Programming
HIT3303  Data Structures and Patterns
HIT3304  Database Programming
HIT3310  Software Architectures and Design
HIT3311  Software Deployment and Evolution
HIT3315  Languages in Software Development
HIT3320  Innovative Project
HIT3323  Web Programming
HIT3324  Web Application Development
HIT3325  Web Application Architectures
HIT3406  Enterprise Systems
HIT3408  Information Systems Risk and Security
HIT3409  Process Modeling
HIT3410  Systems Acquisition and Implementation Management
HIT3412  Business Information Systems Analysis
HIT3413  Business Intelligence
HIT3419  Decision Analysis Systems
HIT3421  Database Implementation
HIT3422  Database Performance issues
HIT3423  Enterprise Systems Management
HIT3426  Enterprise Systems Implementation
HIT3427  Configuring Business Information Systems Solutions
HIT3712  Enterprise Networking

**Non-ICT Elective Studies**

HBSG200  New Venture Development and Management

Other non-ICT electives may be drawn from other disciplines subject to prerequisites, timetabling and approval of program coordinator.

**Entry Requirements**

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or International Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any) and Units 1 and 2 - Mathematics (any)

Students admitted to the degree with a TAFE diploma or advanced diploma in IT may be granted advanced standing for previous studies. Credit transfer arrangements for this program will be placed on the Swinburne Credit Transfer Database.

Students admitted to the degree may be granted exemptions for previous studies on a case-by-case basis. All applications for subject exemptions should be submitted in writing at the time of enrolment to the Program Administrator. Each application is considered by the Program Coordinator, who makes recommendations to the Faculty Academic Committee for approval.

2007 Round 1 Clearly-in-ENTER: n/a (CSP), n/a (Fee)

**Application Procedure**

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34171 (CSP), 34172 (fee), 34173 (int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

**Bachelor of Computing (Network Design and Security)**

This program has been designed to meet growing industry demand for security specialists who are competent in, and knowledgeable about, computer security and network technologies. Students will study the fundamentals of computing including programming, database, the Internet, systems analysis and design and software engineering, as well as advanced topics in network and security. They will be confident evaluating and managing business information systems, be experienced in managing security projects, have an understanding of the complexities and methodologies associated with software development and have a comprehensive knowledge of internet security.

The program also has a strong industry focus with units that prepare students for professional certification in Cisco Certified Network Association (CCNA) and Microsoft Certified Systems Administrator (MCISA).

**Aims & Objectives**

Graduates of this course will possess:

- The skills necessary for working in a software development team on a small scale project.
- An understanding of the process of software development.
- Skills in requirements analysis, systems analysis and design.
- Skills in developing software in C, C++, Java or VB NET.
- The communication and management skills required to manage projects successfully.
- An understanding of the social, legal and ethical issues confronting the information and communication technology professional.
- Knowledge of and experience in database, data communications and information systems.

**Campus**

Hawthorn

**Career Opportunities**

Graduates with network design and security skills can move into a variety of roles including network administration, network security, software development, web development, computer systems analysis, security appraisal and audit and business risk analysis. Typically, network design and security graduates would work for police and intelligence services, criminal justice departments, police, intelligence agencies, information technology departments, and government agencies.
government departments, banking, finance and insurance industries and internet service providers.

**Professional Recognition**

This course is acknowledged as being at the Professional Level (the highest level) with the Australian Computer Society (ACS). The program has been externally vetted by ACS, ensuring it meets the highest standard of the profession and industry.

**Course Duration**

Three years full-time. An optional and additional year of Industry-Based Learning (IBL) is also available.

Students holding an international student visa are not eligible for Industry-Based Learning year.

Students entering the program with prior TAFE qualifications may be eligible to receive credit allowing completion of the course in 2 years.

**Course Structure**

According to the following rules, students complete at least 300 credit points made up of:

- Programming Core studies (37.5 credit points),
- Computing Core studies (125 credit points),
- Generic Skills Studies (completion of the one unit in this group is required),
- Network Design and Security studies (87.5 credit points),
- 50 credit points chosen from ICT Elective Studies, and
- 37.5 credit points chosen from either ICT Elective studies or non-ICT Elective Studies (including Elective Plus sequences).

The Program Panel has the authority to approve additional elective studies for particular students. Such approvals will be advised to the Faculty Academic Committee.

**Careers in the Curriculum (CIC)**

In addition to the above, students must complete a compulsory unit of study HIT0004 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commenced their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

**Final Year Experience - Major Projects**

As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

**Electives Plus Sequences**

Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Entrepreneuring Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

**Units of Study**

**Programming Core Studies (37.5 credit points)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT2080</td>
<td>Introduction to Programming</td>
</tr>
</tbody>
</table>

**Computing Core Studies (100 credit points)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT3181</td>
<td>Technical Software Development</td>
</tr>
<tr>
<td>HIT3172</td>
<td>Object-Oriented Programming in C++</td>
</tr>
<tr>
<td>HIT1307</td>
<td>Internet Technologies</td>
</tr>
<tr>
<td>HIT1401</td>
<td>Introduction to Business Information Systems</td>
</tr>
<tr>
<td>HIT1402</td>
<td>Database Analysis and Design</td>
</tr>
<tr>
<td>HIT3308</td>
<td>Software Development Practices,</td>
</tr>
<tr>
<td>HIT2120</td>
<td>Data Communications and Security</td>
</tr>
<tr>
<td>HIT2315</td>
<td>Usability</td>
</tr>
<tr>
<td>HIT3309</td>
<td>Software Project Practices and Management</td>
</tr>
<tr>
<td>HIT3098</td>
<td>Agile Development Project</td>
</tr>
<tr>
<td>HIT3044</td>
<td>Professional Issues in Information Technology</td>
</tr>
</tbody>
</table>

**Generic Skills Studies (Compulsory)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT0004</td>
<td>Careers in the Curriculum</td>
</tr>
<tr>
<td>HET104</td>
<td>LAN Principles</td>
</tr>
<tr>
<td>HET410</td>
<td>Network Administration</td>
</tr>
<tr>
<td>HIT3408</td>
<td>Information Systems Risk and Security</td>
</tr>
<tr>
<td>HET424</td>
<td>IP Technologies</td>
</tr>
<tr>
<td>HIT3321</td>
<td>IT Security</td>
</tr>
<tr>
<td>HIT317</td>
<td>Network Security and Resilience</td>
</tr>
<tr>
<td>HIT306</td>
<td>Unix for Telecommunications</td>
</tr>
</tbody>
</table>

**ICT Elective Studies**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT412</td>
<td>Networking and Online Games</td>
</tr>
<tr>
<td>HIT1312</td>
<td>Computer and Logic Essentials</td>
</tr>
<tr>
<td>HIT2213</td>
<td>Computer Systems</td>
</tr>
<tr>
<td>HIT2420</td>
<td>Database Management Systems</td>
</tr>
<tr>
<td>HIT3002</td>
<td>Introduction to Artificial Intelligence</td>
</tr>
<tr>
<td>HIT3037</td>
<td>Programming in Java</td>
</tr>
<tr>
<td>HIT3046</td>
<td>Artificial Intelligence for Games</td>
</tr>
<tr>
<td>HIT3047</td>
<td>Real-Time Programming</td>
</tr>
<tr>
<td>HIT3055</td>
<td>Software Maintenance Project</td>
</tr>
<tr>
<td>HIT3057</td>
<td>Software Testing and Reliability</td>
</tr>
<tr>
<td>HIT3066</td>
<td>Software Tools</td>
</tr>
<tr>
<td>HIT3078</td>
<td>Knowledge Management</td>
</tr>
<tr>
<td>HIT3083</td>
<td>Digital Graphics</td>
</tr>
<tr>
<td>HIT3087</td>
<td>Advanced Java</td>
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<tr>
<td>HIT3099</td>
<td>Enterprise.NET</td>
</tr>
<tr>
<td>HIT3119</td>
<td>Enterprise Java</td>
</tr>
<tr>
<td>HIT3156</td>
<td>Software Process Improvement</td>
</tr>
<tr>
<td>HIT3166</td>
<td>Software Testing Processes and Automation</td>
</tr>
<tr>
<td>HIT3197</td>
<td>Advanced .NET Programming</td>
</tr>
<tr>
<td>HIT3243</td>
<td>Games Programming</td>
</tr>
<tr>
<td>HIT3303</td>
<td>Data Structures and Patterns</td>
</tr>
<tr>
<td>HIT3304</td>
<td>Database Programming</td>
</tr>
<tr>
<td>HIT3310</td>
<td>Software Architectures and Design</td>
</tr>
<tr>
<td>HIT3311</td>
<td>Software Deployment and Evolution</td>
</tr>
<tr>
<td>HIT3315</td>
<td>Languages in Software Development</td>
</tr>
<tr>
<td>HIT3320</td>
<td>Innovative Project</td>
</tr>
<tr>
<td>HIT3323</td>
<td>Web Programming</td>
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<tr>
<td>HIT3324</td>
<td>Web Application Development</td>
</tr>
<tr>
<td>HIT3325</td>
<td>Web Application Architectures</td>
</tr>
<tr>
<td>HIT3406</td>
<td>Enterprise Systems</td>
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<tr>
<td>HIT3409</td>
<td>Process Modelling</td>
</tr>
<tr>
<td>HIT3410</td>
<td>Systems Acquisition and Implementation Management</td>
</tr>
<tr>
<td>HIT3412</td>
<td>Business Information Systems Analysis</td>
</tr>
<tr>
<td>HIT3413</td>
<td>Business Intelligence</td>
</tr>
<tr>
<td>HIT3419</td>
<td>Decision Analysis Systems</td>
</tr>
<tr>
<td>HIT3421</td>
<td>Database Implementation</td>
</tr>
</tbody>
</table>
Students admitted to the degree with a TAFE diploma or advanced diploma in IT may be granted advanced standing for previous studies. Credit transfer arrangements for this program will be placed on the Swinburne Credit Transfer Database.

Students admitted to the degree may be granted exemptions for previous studies on a case-by-case basis. All applications for subject exemptions should be submitted in writing at the time of enrolment to the Program Administrator. Each application is considered by the Program Coordinator, who makes recommendations to the Faculty Academic Committee for approval.

2007 Round 1 Clearly-In ENTER: 73.15 (CRP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34211 (CRP), 34212 (Fee)
For further information, visit the VTAC website at: www.vtac.edu.au

Bachelor of Engineering (Telecommunication and Network Engineering) [099]

This course provides an in-depth understanding of the technology of the internet and the international telecommunications industry. It covers the internet, network security, local and global digital networking and wireless mobile communication systems for tomorrow’s broadband interactive information highways. The course also offers electives that prepare the student to obtain both Cisco Systems and Microsoft Industry certifications.

The degree provides graduates with skills in RF telecommunications with specialisation in wireless secure communications, advanced level networking with a strong emphasis in security, digital and analogue electronics, software programming and mathematics. Detailed theoretical learning is coupled with extensive practical experience in various aspects of networking and signal analysis used in the telecommunications/networking field. A large range of electives are also available to suit individual interests.

Aims & Objectives
This course aims to:

- To develop in students a broad mastery of the basic science and engineering principles underlying telecommunications and Internet technologies and an ability to apply that knowledge;
- To develop in students a thorough understanding of appropriate engineering methods and techniques, and competence in their application, so that students are able to comprehend and analyse problems and obtain satisfactory design solutions which, where appropriate, show originality and resourcefulness;
- To develop students’ communication skills so that they can present their ideas clearly by verbal, written and graphic means both within the engineering community and the community at large;
- To give students an appropriate introduction to the role of the professional engineer in the community and to explore the social effects of engineering decisions;
- To develop the moral, social, aesthetic, environmental and ethical concepts essential to a satisfying personal philosophy and a sound professional attitude;
- To develop abilities to function effectively as an individual and in project teams, whether as manager, leader or team member; and
- To prepare students for the changing workplace and the changing societal context of engineering by developing their life-long learning skills and flexibility of mind.

Campus
Hawthorn, Sarawak

Career Opportunities
The growth in internet and multimedia services is fuelling employment for telecommunications professionals. Graduates will find rewarding high-tech careers, both in Australia and internationally, in the converging telecommunications, multimedia, computing, and internet ‘information technology’ industries.

A broad range of employment opportunities exist in the following areas:
- designing, installing and commissioning telecommunications equipment;
- managing research projects on next generation telecommunications systems;
- managing and optimising telecommunication network performance; training technical and engineering professionals in new technologies.
Professional Recognition
This course is fully accredited by Engineers Australia. On completion of the degree, students are eligible to apply for graduate membership with Engineers Australia.

Course Duration
Four years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available.

Students holding an international student visa are required to study full-time. The optional year of Industry-Based Learning (IBL) is not available to international students.

Course Structure
This course will operate under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four units of study will generally be taken each semester. The typical student’s average weekly workload during semester is therefore expected to be fifty hours. Total student contact hours, including lectures, classes, tutorials, flexible learning and laboratory and field sessions will vary in different semesters.

Students choose units of study from six Study Groups:
- Engineering (Telecommunications) Core Studies
- Software Engineering Studies
- Internetworking Studies
- Specialist Technical Studies
- Management and Business Studies
- Generic Skills Studies

According to the following rules, students complete at least 400 credit points made up of:
- 22 units from Engineering Core Studies (275 credit points),
- 3 units chosen from Software Engineering Studies (37.5 credit points),
- 2 units chosen from Internetworking Studies (25 credit points),
- 3 units chosen from Specialist Technical or Minor Stream Studies or an Electives Plus Sequence (37.5 credit points),
- 2 units chosen from Management and Business Studies (25 credit points),
- 2 units from Generic Skills Studies (0 credit points).

To be eligible for a minor, students must complete at least 37.5 credit points from one of the minor streams sequences.

Note: international student visa holders are required to study full time.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HTI0004 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Electives Plus Sequences
Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
- Design: Process and Strategy
- Effective Communication
- Entrepreneuring Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs, subject to time-limiting constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Units of Study

**Engineering (Telecommunications) Core Studies (all 12.5 CP)**
- HET105 Professional Skills - Telecommunications
- HET124 Energy and Motion
- HET182 Electronic Systems
- HET183 Electronics and Telecommunications Systems and Projects
- HET202 Digital Electronics Design
- HET214 Circuits and Electronics 1
- HET232 Embedded Microcontrollers
- HET306 Unix for Telecommunications
- HET317 Network Security and Resilience
- HET314 Communications Principles
- HET315 Communications Information Theory
- HET316 Electromagnetic Waves
- HET329 Digital Signal and Image Processing
- HET336 Network Modelling and Analysis
- HET436 Broadband Multimedia Networks
- HET452 Wireless Communications
- HET550 Design and Development Project 1
- HET556 Design & Development Project 2
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HMS213 Engineering Mathematics 3B
- HMS214 Engineering Mathematics 4B

**Software Engineering Studies (all 12.5 CP)**
- HIT2080 Introduction to Programming
- HIT3181 Technical Software Development
- HIT3172 Object-Oriented Programming in C++

**Internetworking Studies (all 12.5 CP)**
- HET1005 Engineering Project
- HET104 LAN Principles
- HET410 Network Administration
- HET417 Photonics and Fibre Optics
- HET424 IP Technologies
- HIT3712 Enterprise Networking
- HIT3113 Internetwork Routing
- HIT3114 Internetwork Switching

**Specialist Technical Studies (all 12.5 CP)**
Students may choose a sequence of three units of study that develop a minor stream as follows:

**Advanced Internetworking**
- HIT3113 Internetwork Routing
- HIT3114 Internetwork Switching
- HIT3153 Remote Access Networks

**Networking Administration and Applications**
- HET410 Network Administration
- HIT3112 Enterprise Networking
- HIT412 Networking and Online Games

**Telecommunication Electronics**
- HIT308 Circuits and Electronics 2
- HIT378 Integrated Circuit Design

Either:
HET513 Design of DSP Architectures, OR
HET515 Advanced Embedded Systems
OR 37.5 credit points from the following units:
HET308 Circuits and Electronics 2
HET378 Integrated Circuit Design
HET410 Network Administration
HET417 Photonics and Fibre Optics
HET412 Networking and Online Games
HET153 Design of DSP Architectures
HET515 Advanced Embedded Systems
HIT1402 Database Analysis and Design
HIT3002 Introduction to Artificial Intelligence
HIT3138 Intelligent Systems
HIT3712 Internetwork Routing
HIT3714 Internetwork Switching
HIT3753 Remote Access Networks
OR 37.5 credit points from an Electives Plus sequence

Management & Business Studies (all 12.5 CP)
HBSG200 New Venture Development and Management
HES3380 Engineering Management 1
HES5380 Engineering Management 2

Generic Skills Studies
HIT0004 Careers in the Curriculum
HED400 Professional Experience in Engineering
Students may also choose to undertake an optional year of Industry-Based Learning (100 credit points). Note that this optional Industry-Based Learning program is not available to international students.
* Students who have not completed an approved Cisco Networking Academy Program (CNAP) must do HET104 and HET424
Note: In addition to the above sequence, the successful completion of Professional Experience in Engineering (HED400) is required for the award of the degree. This unit can be taken at any stage of the program.

Recommended Study Sequence

Stage 1
Semester 1
HET105 Professional Skills - Telecommunications
HMS111 Engineering Mathematics 1
HIT2080 Introduction to Programming
HET182 Electronics
Semester 2
HET124 Energy and Motion
HMS112 Engineering Mathematics 2
HIT3181 Technical Software Development
HET183 Electronics and Telecommunications Systems and Projects

Stage 2
Semester 1
HET202 Digital Electronics Design
HIT3172 Object-Oriented Programming in C++
HMS213 Engineering Mathematics 3B
Choose one of:
HET104 LAN Principles#
HET410 Network Administration
HIT1055 Engineering Project
HIT3713 Internetwork Routing
Semester 2
HIT0004 Careers in the Curriculum
HET214 Circuits and Electronics 1
HET232 Embedded Microcontrollers

HMS214 Engineering Mathematics 4B
Choose one of:
HET424 IP Technologies##
HET417 Photonics and Fibre Optics
HIT3712 Internetwork Routing
HIT3714 Internetwork Switching

Stage 3
HITW550 Industry-Based Learning (optional)
Note that this optional Industry-Based Learning program is not available to international students.
OR
Semester 1
HET317 Network Security and Resilience
HIT314 Communications Principles
HET316 Electromagnetic Waves
HET338 Network Modelling and Analysis
Semester 2
HET3714 Internetwork Routing
HET315 Communications Information Theory
HET329 Digital Signal and Image Processing
Specialist Technical Studies (choose one)

Stage 4
Semester 1
HET436 Broadband Multimedia Networks
HET550 Design and Development Project 1
Management and Business Studies (choose one)
Specialist Technical Studies (choose one)
Semester 2
HET452 Wireless Communications
HET556 Design & Development Project 2
Specialist Technical Studies (choose one)
Management and Business Studies (choose one)
# Students who have not completed an approved Cisco Networking Academy Program (CNAP) must do HET104 and HET424
Note: In addition to the above sequence, the successful completion of Professional Experience in Engineering (HED400) is required for the award of the degree. This unit can be taken at any stage of the program.

Recommended Study Sequence
(for the Minor Streams)

Advanced Internetworking
Stage 3
Semester 2
HET306 Unix for Telecommunications
HIT315 Communications Information Theory
HIT329 Digital Signal and Image Processing
HIT3713 Internetwork Routing
Stage 4
Semester 1
HET436 Broadband Multimedia Networks
HET550 Design and Development Project 1
HIT3714 Internetwork Switching
Management and Business Studies (choose one)
Semester 2
HET452 Wireless Communications
HET556 Design & Development Project 2
HIT3753 Remote Access Networks
Management and Business Studies (choose one)
Network Administration and Applications

Stage 3
Semester 2
- HET306 Unix for Telecommunications
- HET315 Communications Information Theory
- HET329 Digital Signal and Image Processing
- HET410 Network Administration

Stage 4
Semester 1
- HET438 Broadband Multimedia Networks
- HET550 Design and Development Project 1
- HIT3712 Enterprise Networking Management and Business Studies (choose one)

Semester 2
- HET492 Wireless Communications
- HET556 Design & Development Project 2
- HET412 Networking and Online Games

Telecommunication Electronics

Stage 3
Semester 2
- HET306 Unix for Telecommunications
- HET315 Communications Information Theory
- HET329 Digital Signal and Image Processing
- Management and Business Studies (choose one)

Stage 4
Semester 1
- HET436 Broadband Multimedia Networks
- HET550 Design and Development Project 1
- HET378 Integrated Circuit Design
- HET308 Circuits and Electronics 2

Semester 2
- HET452 Wireless Communications
- HET556 Design & Development Project 2
- HET513 Design of DSP Architectures*

Management and Business Studies (choose one)

* Students may choose to do HET515 Advanced Embedded Systems in Sem 1 subject to timetable constraints

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent. 2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any) and a study score of at least 25 in one of Mathematical Methods (either) or Specialist Mathematics.

Selection mode: ENTER and two-stage process with a middle-band of approximately 26%.

Middle-band selection: Applicants who have a study score of at least 25 in Physics or Specialist Mathematics, or Information technology (any) and/or successful completion of VET Cisco Networking Academy Program will be deemed to have an ENTER up to 3.0 percentage points higher for each study to a maximum of 6.5 percentage points.

2007 Round 1 Clearly-In ENTER: 77.95 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 34201 (CSP), 34202 (Fee), 34203 (International)

For further information, visit the VTAC website at: www.vtac.edu.au

Bachelor of Information Technology (BIT)

Swinburne’s Bachelor of Information Technology (BIT) is one of Australia’s most prestigious IT degrees offering students state-of-the-art skills in business information technology.

The program is sponsored by twenty of Australia’s top organisations and all students receive an industry-funded scholarship of approximately $33,500 paid over the three years of the course (tax free) during their studies. Students with an ENTER of 95 or above will receive a fee-waiver in addition to the scholarship.

Students spend two twenty-week periods working in a sponsor organisation, gaining a broad exposure to the use of IT in business. The grant of a scholarship does not create, on completion of the course, any employment obligation on the part of the student or contributing organisations.

The course is concerned with the acquisition, design, implementation and management of information systems in all types of organisations. The skills required of an information technology specialist include business analysis, requirements analysis, systems analysis, systems design, programming, database design and development, systems acquisition and implementation, and interpersonal communication skills, team skills and management. In addition to these IT related skills and knowledge, the modern IT professional must be well versed in business fundamentals, in understanding the role and contribution of information systems in driving and enabling the achievement of business goals and objectives, and in managing the vital information systems resource in organisations. This degree has been designed to meet this need, and will produce graduates who are competent and knowledgeable in the discipline, possess excellent interpersonal and communication skills, and who are able to critically analyse business problems and develop creative and innovative enterprise solutions.

Throughout the program, students are exposed to a range of hardware and software to illustrate how technology can be used to solve typical business problems. By providing an infrastructure through which students can gain both technical knowledge and interpersonal skills, they can develop the abilities and skills important for effective participation and leadership in industry. To ensure students develop the teamwork skills required as an information technology professional, there is a strong emphasis on group work in both the curricular and extracurricular parts of the program. The Industry-Based Learning segments of the program also provide valuable experience within the commercial world, providing added exposure to the use of technology within industry.

Through a mix of university and Industry-Based Learning environments, this innovative course is designed to provide the future leaders in Australia’s information technology industry. Students gain ‘state-of-the-art’ skills in analysis, design, programming and implementation of systems, and the management skills necessary to apply information technology in the modern business world.

Aims & Objectives

- To provide an infrastructure through which students can gain both technical, analytical, and managerial knowledge and interpersonal skills and develop the abilities and skills important for effective participation and leadership in industry.
- To ensure students develop the teamwork, interpersonal and communication skills required as an information technology professional.

Campus

Hawthorn

Career Opportunities

Graduates of the Bachelor of Information Technology will be well equipped to meet the requirements of both industrial and commercial organisations for information technology specialists. Technical skills such as systems analysis and design and project management are sought after by industry, with good opportunities available for progressing into management and leadership positions. Since the commencement of the course all BIT graduates have obtained relevant positions in IT-related fields and positions including: business analyst, team leader, software developer, systems analyst, project manager, security analyst, production manager, client service network consultant, and network coordinator.

Professional Recognition

The course is acknowledged as being at the Professional Level (the highest level) with the Australian Computer Society (ACS).
Course Duration
Three years full-time, including two twenty-week periods of Industry-Based Learning and two summer semesters. This course is not offered on a part-time basis.

Course Structure
The course includes four standard semesters, two summer semesters and two 20-week periods of Industry-Based Learning. This provides a course which is essentially a four-year course completed in three calendar years.

According to the following rules, students complete at least 400 credit points made up of:
- Information Technology Core Studies (175 credit points)
- Programming Core Studies (12.5 credit points)
- Business Core Studies (37.5 credit points)
- Project Core Studies (12.5 credit points)
- Industry-Based Learning (100 credit points)
- Information Systems Specialist Electives (12.5 credit points)
- 50 credit points of electives, of which at least one must be chosen from ICT electives, with up to 37.5 credit points available in other discipline areas.

Electives Plus Sequences
Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
- Design, Process and Strategy
- Effective Communication
- Entering and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Recommended Study Sequence

<table>
<thead>
<tr>
<th>Stage 1 Semester 1</th>
<th>HIT1401</th>
<th>Introduction to Business Information Systems</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>HBC110</td>
<td>Accounting for Success</td>
</tr>
<tr>
<td></td>
<td>HIT1402</td>
<td>Database Analysis and Design</td>
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<tr>
<td></td>
<td>HBSH100</td>
<td>Behaviour and Communication in Organisations</td>
</tr>
<tr>
<td></td>
<td>Choose one of:</td>
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<tr>
<td></td>
<td>HIT1301</td>
<td>Algorithmic Problem Solving, OR</td>
</tr>
<tr>
<td></td>
<td>HIT1404</td>
<td>Introduction to Programming in .NET</td>
</tr>
<tr>
<td>Stage 2 Semester 2</td>
<td>Choose one of:</td>
<td></td>
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<tr>
<td></td>
<td>HIT2302</td>
<td>Object-Oriented Programming, OR</td>
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<tr>
<td></td>
<td>HIT2425</td>
<td>Business Systems Programming in .NET, OR</td>
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<tr>
<td></td>
<td>HIT2427</td>
<td>Object-Oriented Programming in .NET</td>
</tr>
<tr>
<td></td>
<td>HIT2405</td>
<td>Requirements Analysis and Modelling</td>
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<tr>
<td></td>
<td>HIT1403</td>
<td>ICT Environments</td>
</tr>
<tr>
<td></td>
<td>HIT3406</td>
<td>Enterprise Systems</td>
</tr>
<tr>
<td></td>
<td>HIT2420</td>
<td>Database Management Systems</td>
</tr>
</tbody>
</table>

| Semester 2          | HIT3407 | Information Systems Project Management       |
|                     | HBSH200 | Organisation Behaviour                       |
|                     | HIT3421 | Database Implementation                      |

| Stage 2 Semester 1  | HITS451 | Industry-Based Learning (20 weeks)          |
|                     | HITS411 | Business Data Communications & Networks      |
|                     | HITS410 | Systems Acquisition and Implementation Management |
|                     | HITS409 | Process Modelling                           |
|                     | Elective |                                          |
|                     | Elective |                                          |

| Semester 2          | HITS444 | Professional Issues in Information Technology |

| Stage 2 Semester 1  | Choose one of: |
|                     | HITS412 | Business Information Systems Analysis, OR   |
|                     | HITS413 | Business Intelligence, OR                   |
|                     | HITS408 | Information Systems Risk and Security       |
|                     | HITS427 | Configuring Business Information Systems Solutions |
|                     | Elective |                                          |
|                     | Elective |                                          |

| Semester 2          | HITS452 | Industry-Based Learning (20 weeks)          |

| Electives           | Choose 4 electives, of which at least one must be chosen from ICT Elective Studies and up to 3 electives from other non-ICT discipline areas. |

| ICT Elective Studies| HITS426 | Business Systems Programming in .NET         |
|                    | HITS303 | Programming in Java                           |
|                    | HITS066 | Software Tools                                |
|                    | HITS307 | Knowledge Management                          |
|                    | HITS166 | Software Testing Processes and Automation     |
|                    | HITS172 | Object-Oriented Programming in C++            |
|                    | HITS236 | Usability                                     |
|                    | HITS321 | IT Security                                   |
|                    | HITS322 | Web Programming                               |
|                    | HITS324 | Web Application Development                   |
|                    | HITS326 | Web Application Architectures                 |
|                    | HITS408 | Information Systems Risk and Security         |
|                    | HITS412 | Business Information Systems Analysis         |
|                    | HITS413 | Business Intelligence                         |
|                    | HITS419 | Decision Analysis Systems                     |
|                    | HITS421 | Database Implementation                       |
|                    | HITS422 | Database Performance Issues                   |
|                    | HITS423 | Enterprise Systems Management                 |
|                    | HITS424 | Information Systems Management                |
|                    | HITS426 | Enterprise Systems Implementation             |
|                    | HITS407 | Research Project                              |

Other ICT electives may be taken subject to timetabling, prerequisites and permission of the program coordinator.

Recommended Non-ICT Elective Studies
HITS100 | Introduction to Philosophy
Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification. The course is primarily intended for high achieving school leavers. Only Australian citizens or permanent residents are eligible to apply.

2008 VCE prerequisites: Units 3 & 4 - a study score of at least 20 in English (any) and a study score of at least 25 in Mathematics (any).

Prior to selection into the course, all short-listed candidates are required to attend a briefing session on the course and an interview. The briefing explains in detail about the course and is designed to ensure students understand the course with realistic expectations. Interviews are non-technical and assess the candidate’s suitability for the course. Selection is based upon academic merit and interview. 2007 Round 1 Clear Entry: 81.50

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC Code: 34311 (CRP)

For further information, visit the VTAC website at: www.vtac.edu.au
In addition to your VTAC application, applicants must submit the Application for Interview and Admission Form directly to the Swinburne Faculty of Information and Communication Technologies by Friday 2 November 2007.

Bachelor of Multimedia (Multimedia Software Development) [060]

The Multimedia Software Development course would serve the needs of those wishing to pursue a multimedia oriented career, particularly related to the production, development and design of multimedia applications in their respective chosen discipline. It includes major studies in software development using an object-oriented approach and multimedia design using authoring tools. It also aims to develop an indepth understanding of the broad range of creative and design aspects of multimedia and information technologies.

The course provides students with a solid knowledge and practical base in Internet programming, design for multimedia, authoring multimedia and the Internet and the World Wide Web (WWW). The course can be regarded as an Information Technology program due to the focus on software development and programming, database design and development, and data communications and networking. In addition, it can be regarded as an electronic media development program, due to the coverage of graphics and animation and video technology. It also has a design focus with coverage of usability and design issues.

Note: students who wish to study a course which includes advanced computer programming and the development of complex, web-based systems should apply to study the Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
• To provide the knowledge and skills necessary to become a multimedia programmer.
• To provide a foundation in the technical aspects of multimedia software development through knowledge in the fundamental areas of database, data communications, multimedia systems and software development.
• To provide knowledge and skills enabling the development and engineering of usable systems integrating different media types.
• To provide the skills and knowledge to enable the development of different types of media, including 3-D animations and the main media elements.

Campus
Smeaton/Hawthorn

Career Opportunities
Graduates of this course will be well equipped to meet the predicted growth in industry demand for professionals in multimedia and web design. They will have extensive skills in software development using an object-oriented approach, Java programming, and multimedia design. They also will have developed experience in a broad range of creative and design aspects of multimedia and Internet technologies.

Professional Recognition
This degree is accredited at professional level towards membership of the Australian Computer Society. The program has been externally vetted by ACS, ensuring it meets the highest standard of the profession and industry.

Course Duration
Three years full-time.

Course Structure
This course operates under a student workload model based on 120 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four units of study, each worth 12.5 credit points, will generally be taken each semester. The typical student's average weekly workload during semester is therefore expected to be fifty hours. Total student contact hours, including lectures, classes, tutorials, flexible learning and laboratory and field sessions will vary in different semesters.

Students choose units of study from four Study Groups:
• Core Multimedia Studies
• Further Multimedia Studies
• Co-major Studies (either Stream A or Stream B)
• Elective Studies

According to the following rules, students complete at least 300 credit points made up of:
• 100 credit points from Core Multimedia Studies,
• 37.5 credit points from Further Multimedia Studies,
• 125 credit points from Co-major Studies (either Stream A or Stream B)
• 37.5 credit points of Elective Studies which may include IT Electives, units from the Multimedia Studies group, or Elective Plus sequences.

Electives Plus Sequences
Elective Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
• Design: Process and Strategy
• Effective Communication
• Enterprise Marketing
• Establishing and Running a Business
• Information Orientation and Knowledge Management
• Language Practice and Culture
• Multimedia & Web Development
• Sustainability
• The Networked Economy
• Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 153 for Electives Plus sequences details.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.
Units of Study

Core Multimedia Studies (100 credit points)

HET113 The Internet and World Wide Web 1
HET215 Multimedia Applications
HDMD101 Design for Multimedia 1
HET213 User Experience Design
HET407 Multimedia Technology
HET401 Multimedia Project 1
HET402 Multimedia Project 2
HET123 The Internet and World Wide Web 2

Further Multimedia Studies (75.5 credit points)

HDMD102 Design for Multimedia 2
HET208 3D Animation and Special Effects
HET222 Digital Video and Audio
HET332 Interactive Multimedia
HET335 Principles of Game Design
HET412 Networking and Online Games
HIT3243 Games Programming

Co-major Studies (125 credit points)

Choose either Stream A or Stream B

Note: Stream B is not available for students commencing 2006 onwards at the Hawthorn campus.

Co-major Stream A:

HIT2080 Introduction to Programming
HIT1402 Database Analysis and Design
HIT3181 Technical Software Development
HIT2308 Software Development Practices
HIT3172 Object-Oriented Programming in C++
HIT3009 Software Project Practices and Management
HIT3044 Professional Issues in Information Technology
HIT3310 Software Architectures and Design

Choose one of:

HET104 LAN Principles
HIT2130 Data Communications and Security

And one of:

HIT2420 Database Management Systems
HIT3037 Programming in Java

Co-major Stream B:

HIT1051 Software Development 1
HIT1015 Computer Systems
HIT2016 Database 1
HIT1052 Software Development 2
HIT1031 Introduction to Software Engineering
HIT3149 Analysis, Modelling and Design
HIT2056 Software Project Management
HIT2120 Data Communications and Security
HIT3017 Database 2
HIT3044 Professional Issues in Information Technology

Elective Studies

Electives may be chosen from available ICT electives, Further Multimedia Studies or Electives Plus sequences, subject to timetable constraints and prerequisite studies being met.

Note:

• Not all units of study are offered all semesters.
• Some may be only offered subject to sufficient enrolments.
• The program panel has the authority to approve additional non-core studies for individual students.
• Such approvals will be advised to the FICT Academic Committee.

Recommended Study Sequence (with Co-major Stream A)

Semester 1

HDMD101 Design for Multimedia 1
HET113 The Internet and World Wide Web 1
HIT2080 Introduction to Programming
HIT402 Database Analysis and Design

Semester 2

HDMD102 Design for Multimedia 2
HET213 User Experience Design
HIT3181 Technical Software Development
HET123 The Internet and World Wide Web 2

Semester 3

HET215 Multimedia Applications
HIT2308 Software Development Practices
HIT3172 Object-Oriented Programming in C++
HET104 LAN Principles, or
HIT2120 Data Communications and Security

Semester 4

HIT3309 Software Project Practices and Management

Choose one of:

HIT2420 Database Management Systems
HIT3037 Programming in Java

Choose two of:

HIT208 3D Animation and Special Effects
HIT222 Digital Video and Audio
HIT332 Interactive Multimedia
HIT325 Principles of Game Design
HIT412 Networking and Online Games
HIT3243 Games Programming

Semesters 5 & 6

HW050 Optional IBL Year

Note: The optional Industry-Based Learning (IBL) program is not available to international students.

Semester 7

HET401 Multimedia Project 1
HET407 Multimedia Technology
HIT3310 Software Architectures and Design

Elective

Semester 8

HET402 Multimedia Project 2
HIT3044 Professional Issues in Information Technology
Elective

IT Electives

Availability of electives is subject to timetable and resource constraints.

HET306 Unix for Telecommunications
HET410 Network Administration
HET424 IP Technologies
HIT2420 Database Management Systems
HIT3002 Introduction to Artificial Intelligence
HIT3046 Artificial Intelligence for Games
HIT3083 Digital Graphics
HIT3078 Knowledge Management
HIT3087 Advanced Java
HIT3093 XML Technologies
HIT3172 Object-Oriented Programming in C++
HIT3304 Database Programming

Multimedia electives

HET208 3D Animation and Special Effects
Bachelor of Science (Computer Science and Software Engineering) [Z063Y]

Computer Science and Software Engineering focuses on the object-oriented approach to software development, accepted by industry as a key technology for the future. The course provides an extensive education in contemporary approaches to the analysis, design and implementation of large-scale systems, along with a sound understanding of the traditional aspects of computer science such as hardware and operating systems. Like all IT courses at Swinburne, this program pays particular attention to the human factors involved in the development, deployment and use of computer-based systems.

There is a focus on applications involving multimedia, and on web-based systems, with an emphasis on the design of effective human-computer interfaces. A range of options in the final year of the course allows students to study advanced units of study in areas such as software engineering, computer networks, database, knowledge-based systems and human-computer interaction. The acquired skills and knowledge are consolidated in a major team project for an external client in the final year. The course uses Java as the first programming language, recognising the role of this language in the development of large-scale systems, Students then develop skills in the C++ programming language.

Graduates of this course will have extensive skills in software development, particularly relating to medium and large scale projects, will have developed experience in working on team projects, and will have well developed oral and written communication skills. The course involves the use of the most up-to-date technology and methods, and includes a major emphasis on software development for multimedia applications on the web. The course is oriented towards applications in areas such as defence, aerospace and medicine, where complex software plays a major role, often of a safety-critical nature, as well as in businesses that require extensive computer support, such as banking and manufacturing.

Aims & Objectives
Graduates of this course will possess:

- The skills necessary for working in a software development team on a large-scale project.
- A deep understanding of the process of software development.
- Skills in the object-oriented approach to systems analysis, design and implementation.
- A high level of skill in developing software in Java and C++.
- The communication and management skills required to manage software development projects successfully.
- An understanding of the social, legal and ethical issues confronting the software engineering profession.
- Knowledge and experience in human-computer interaction, web-based systems, database systems and data communications.

Campus
Sarawak/Hawthorn

Career Opportunities
Graduates typically find employment in organisations engaged in medium to large-scale software development. Initially, graduates are usually employed in technical areas such as programming and systems analysis and design. Internet systems development. They are well-prepared for progression into project leadership and management positions as their experience develops.

Professional Recognition
The degree is accredited at professional level towards membership of the Australian Computer Society (ACS). The program has been externally vetted by the ACS, ensuring it meets the highest standard of the profession and industry.

Course Duration
Three years full-time.

Course Structure
Students choose units of study from four Study Groups:

- Computer Science and Software Engineering Core Studies
- Generic Skills Studies
- Specialist IT Studies
- Non-IT Studies

According to the following rules, students complete at least 300 credit points made up of:

- Computer Science and Software Engineering Core Studies (237.5 credit points)
- At least 25 credit points (2 units) chosen from Specialist IT studies, and
- Up to 37.5 credit points (3 units) chosen from either Specialist IT studies or Non-IT Studies

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HIT1004 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Electives Plus Sequences
Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequencers are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Units of Study
Computer Science & Software Engineering Core Studies

HIT1307 Internet Technologies
HIT1312 Computer and Logic Essentials, OR
HMS111 Engineering Mathematics 1
HIT1401 Introduction to Business Information Systems
HIT1402 Database Analysis and Design
HIT2085 Introduction to Programming
HIT2120 Data Communications and Security, OR
HIT104 LAN Principles
HIT2398 Software Development Practices
HIT2213 Computer Systems
HIT2216 Usability
HIT3102 Intelligent Agents
HIT3037 Programming in Java
HIT3044 Professional Issues in Information Technology
HIT3158 Software Engineering Project A

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HIT258  Software Engineering Project B
HIT3181  Technical Software Development
HIT3172  Object-Oriented Programming in C++
HIT3309  Software Project Practices and Management
HIT3310  Software Architectures and Design
HIT3311  Software Deployment and Evolution

Specialist ICT Studies
HET104  LAN Principles
HET306  Unix for Telecommunications
HET317  Network Security and Resilience
HET410  Network Administration
HET412  Networking and Online Games
HET424  IP Technologies
HIT2092  Advanced Web Technologies
HIT2420  Database Management Systems
HIT2425  Business Systems Programming in .NET
HIT3002  Introduction to Artificial Intelligence
HIT3046  Artificial Intelligence for Games
HIT3047  Real-Time Programming
HIT3057  Software Testing and Reliability
HIT3078  Knowledge Management
HIT3083  Digital Graphics
HIT3087  Advanced Java
HIT3099  Enterprise .NET
HIT3119  Enterprise Java
HIT3138  Intelligent Systems
HIT3172  Object-Oriented Programming in C++
HIT3197  Advanced .NET Programming
HIT3243  Games Programming
HIT3256  Innovative Project
HIT3406  Enterprise Systems
HIT3408  Information Systems Risk and Security
HIT3409  Process Modelling
HIT3410  Systems Acquisition and Implementation Management
HIT3412  Business Information Systems Analysis
HIT3413  Business Intelligence
HIT3419  Decision Analysis Systems
HIT3421  Database Implementation
HIT3422  Database Performance Issues
HIT3423  Enterprise Systems Management
HIT3426  Enterprise Systems Implementation
HIT3712  Enterprise Networking
HIT3713  Internetwork Routing
HIT3714  Internetwork Switching
HIT3753  Remote Access Networks
HIT4071  Research Project

Non-IT Studies
HBSG200  New Venture Development and Management

Other non-ICT electives may be drawn from other disciplines subject to prerequisites, timetabling and approval of program coordinator.

Recommended Study Sequence

Semester 1
HIT3132  Computer and Logic Essentials
HIT4010  Introduction to Business Information Systems
HIT402  Database Analysis and Design
HIT2080  Introduction to Programming

Semester 2
HIT307  Internet Technologies
HIT2313  Computer Systems

Semester 3
HIT3181  Technical Software Development

Semester 4
HIT3309  Software Project Practices and Management

Semester 5
HIT3158  Software Engineering Project A
HIT3310  Software Architectures and Design

Semester 6
HIT3258  Software Engineering Project B

Bachelor of Science (Information Technology) [Z161Y]
The Bachelor of Science (Information Technology) is designed for international students and builds on the knowledge and skills gained in their prior studies overseas. It focuses on software development using C++ and Java, software engineering and multimedia software development for the Internet. Graduates of this course will have extensive skills in software development, experience in working on team projects, and will have well developed oral and written communication skills.

Aims & Objectives
The major aim of the course is to provide graduates with the knowledge, skills and attitudes to make them valuable members of any team developing software in the contemporary environment.

Campus
Hawthorn

Career Opportunities
Graduates can seek employment in computer programming, internet systems development, multimedia software development, systems analysis and design, database administration, and computer network support.

Professional Recognition
The degree is accredited at professional level towards membership of the Australian Computer Society (ACS). The program has been externally vetted by the ACS, ensuring it meets the highest standard of the profession and industry.

Course Duration
One year full-time (2-3 semesters).

Course Structure
The program consists of eight to ten units of study, each of 12.5 credit points, taken over two or three semesters. Four units of study will be taken in each normal semester, and two may be taken in the shorter summer semester. Students commencing the program should have completed a post-secondary qualification in IT that provides 175 to 200 credit points of advanced standing from a standard 300 credit point IT degree. Students will undertake a program of study consisting of 100 to 125 credit points of advanced IT electives chosen from the list of available units below. Normally students will be awarded exemptions from all of the core units listed below, however if they are not eligible for an exemption from any core unit then they must take that core unit instead of an advanced IT elective.
Units of Study

Core Units of Study
Level 1 programming unit:
HIT1301 Algorithmic Problem Solving, OR
HIT1404 Introduction to Programming in .NET, OR
HIT2080 Introduction to Programming
Level 2 programming unit:
HIT2302 Object-Oriented Programming, OR
HIT2427 Object-Oriented Programming in .NET, OR
HIT3181 Technical Software Development, OR
HIT3037 Programming in Java
HIT1402 Database Analysis and Design
HIT2316 Usability
HIT3044 Professional Issues in Information Technology
HIT2308 Software Development Practicum
HIT2120 Data Communications and Security
HIT3641/HIT3041 Advanced Web Development, OR
HIT3223 Web Programming
HIT3031 Software Process and Project Management, OR
HIT3309 Software Project Practices and Management
HIT3061 Software Team Project

Advanced IT Electives
HIT2420 Database Management Systems
HIT2425 Business Systems Programming in .NET
HIT2427 Object-Oriented Programming in .NET
HIT3046 Artificial Intelligence for Games
HIT3047 Real-Time Programming
HIT3057 Software Testing and Reliability
HIT3066 Software Tools
HIT3078 Knowledge Management
HIT3083 Digital Graphics
HIT3087 Advanced Java
HIT3908 Agile Development Project
HIT3099 Enterprise.NET
HIT3119 Enterprise Java
HIT3121 Internet Security
HIT3149 Analysis, Modelling and Design
HIT3156 Software Process Improvement
HIT3157 Large Scale System Design
HIT3164 Internet Networking Infrastructure
HIT3166 Software Testing Processes and Automation
HIT3172 Object-Oriented Programming in C++
HIT3195 Programming with Oil
HIT3197 Advanced .NET Programming
HIT3243 Games Programming
HIT3303 Data Structures and Patterns
HIT3304 Database Programming
HIT3310 Software Architectures and Design
HIT3311 Software Deployment and Evolution
HIT3315 Languages in Software Development
HIT3320 Innovative Project
HIT3321 IT Security
HIT3324 Web Application Development
HIT3325 Web Application Architectures
HIT3406 Enterprise Systems
HIT3408 Information Systems Risk and Security
HIT3409 Process Modelling
HIT3410 Systems Acquisition and Implementation Management
HIT3412 Business Information Systems Analysis
HIT3413 Business Intelligence
HIT3419 Decision Analysis Systems
HIT3421 Database Implementation
HIT3422 Database Performance Issues
HIT3423 Enterprise Systems Management
HIT3426 Enterprise Systems Implementation
HIT3427 Configuring Business Information Systems Solutions

Bachelor of Science (Professional Software Development) [093]
The three year Professional Software Development program has been developed in conjunction with representatives of the local and global software industry. The program covers advanced software development with an emphasis on problem solving, practical software engineering including the critical skills of quality assurance, project management and the use of industry-standard development techniques and tools. Graduates will develop deep technical skills with an understanding of software architecture and its role in an organisation. The program maintains regular industry interaction through seminars, site visits, industry-based projects, equipping graduates with a valuable combination of industry and academic knowledge for future application in the global software industry. An additional year of advanced project-based study allows students to graduate with a Bachelor of Science (Professional Software Development) (Honours).

Aims & Objectives
The program aims to develop in students:
• The skills necessary for working in a software development team on a large scale project.
• An understanding of the process of software development.
• Skills in the object-oriented approach to systems analysis, design and implementation.
• High level skills in developing software in modern programming languages such as Java and C++.
• The communication and management skills required to successfully manage software development projects.
• An understanding of social, legal and ethical issues confronting the software engineering profession.
• Knowledge and experience in human-computer interaction, web and database systems and data communications.

Campus
Hawthorn

Career Opportunities
Graduates will find employment in organisations engaged in medium to large-scale software development projects in areas such as defence, aerospace and medicine, where complex software plays a major role, as well as in manufacturing industry. Graduates are often initially employed in technical areas such as programming and systems analysis, and progress into areas such as software development, web development, games/multimedia development, software design, software testing, user interface engineering, product management, solutions architecture.

Professional Recognition
This course is acknowledged as being at the Professional Level (the highest level) with the Australian Computer Society (ACS).

Course Duration
Three years full-time. An optional and additional year of Industry-Based Learning (IBL) is also available. Students holding an international student visa are not eligible for the Industry-Based Learning year.

Course Structure
Four units of study will generally be taken each semester. Total student contact hours, including lectures, classes, tutorials and laboratory sessions, will normally be between 12 - 16 hours per week during the academic semesters. Students choose units of study from four Study Groups:
• Software Development Core Studies
• Contextual Studies
• Specialist ICT Studies
• Non-ICT Studies

Students may choose to extend the program to four years to complete the Bachelor of Science (Professional Software Development)(Honours). The additional honours year involves an intensive major studio project and some advanced electives.

**Careers in the Curriculum (CIC)**
In addition to the above, students must complete a compulsory unit of study HIT004 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

**Electives Plus Sequences**
Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their discipline degree.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Enterprising Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

**Final Year Experience - Major Projects**
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

**Majors/Minors & Specialisations**
Students must complete three units from one of these groups, or alternatively one of the three-unit minors from another discipline must be taken.

Current specialisation options include:

- Enterprise Systems Development
- Software Engineering
- Business Analysis
- Database Systems
- Multimedia and Games Development
- Networks
- Effective Communication

**Units of Study**

**Core Studies**
- HIT1301 Algorithmic Problem Solving
- HIT1307 Internet Technologies
- HIT1312 Computer and Logic Essentials
- HIT1322 Enterprise Technologies and Architectures
- HIT1402 Database Analysis and Design
- HIT2120 Data Communications and Security
- HIT2300 Object-Oriented Programming
- HIT2306 Software Development Practices
- HIT2313 Computer Systems
- HIT2316 Usability
- HIT3044 Professional Issues in Information Technology
- HIT3303 Data Structures and Patterns
- HIT3304 Database Programming
- HIT2405 Software Development Project A
- HIT3109 Software Architectures and Design
- HIT3309 Software Project Practices and Management
- HIT3310 Software Architectures and Design
- HIT3311 Software Deployment and Evolution
- HIT3315 Languages in Software Development

**ICT Elective Studies**
- HET104 LAN Principles
- HET306 Unix for Telecommunications
- HIT317 Network Security and Resilience
- HIT410 Network Administration
- HIT412 Networking and Online Games
- HIT424 IP Technologies
- HIT2420 Database Management Systems
- HIT2425 Business Systems Programming in .NET
- HIT3002 Introduction to Artificial Intelligence
- HIT3046 Artificial Intelligence for Games
- HIT3047 Real-Time Programming
- HIT3057 Software Testing and Reliability
- HIT3078 Knowledge Management
- HIT383 Digital Graphics
- HIT387 Advanced Java
- HIT399 Enterprise.NET
- HIT3119 Enterprise Java
- HIT3130 Intelligent Systems
- HIT3157 Large Scale System Design
- HIT3172 Object-Oriented Programming in C++
- HIT3197 Advanced .NET Programming
- HIT3243 Games Programming
- HIT3321 IT Security
- HIT3406 Enterprise Systems
- HIT3408 Information Systems Risk and Security
- HIT3409 Process Modelling
- HIT3410 Systems Acquisition and Implementation Management
- HIT3412 Business Information Systems Analysis
- HIT3413 Business Intelligence
- HIT3419 Decision Analysis Systems
- HIT3421 Database Implementation
- HIT3422 Database Performance Issues
- HIT3433 Enterprise Systems Management
- HIT4017 Research Project

**Non-ICT Elective Studies**
- HBSG200 New Venture Development and Management

Other non-IT electives may be drawn from other disciplines subject to prerequisites and timetabling.

Students can choose to study an Electives Plus sequence of up to three units (see above).

**Recommended Study Sequence**

**Stage 1**

**Semester 1**
- HIT1301 Algorithmic Problem Solving
- HIT1402 Database Analysis and Design
- HIT1312 Computer and Logic Essentials
- HIT1322 Enterprise Technologies and Architectures

**Semester 2**
- HIT2302 Object-Oriented Programming
- HIT1307 Internet Technologies
HIT2313 Computer Systems
HIT2316 Usability

### Stage 2
#### Semester 1
HIT3303 Data Structures and Patterns
HIT2308 Software Development Practices
HIT2110 Data Communications and Security
Elective
HIT0004 Careers in the Curriculum
#### Semester 2
HIT3304 Database Programming
HIT3309 Software Project Practices and Management
HIT3315 Languages in Software Development
Elective

### Stage 3
#### Semester 1
HIT3105 Software Development Project A
HIT3310 Software Architectures and Design
Elective
Elective
#### Semester 2
HIT3205 Software Development Project B
HIT3311 Software Deployment and Evolution
HIT3044 Professional Issues in Information Technology
Elective

### Stage 4 - Honours (Optional)
#### Semester 1
HIT4391 Studio Project A, OR
HIT4393 Research Project A
Elective
#### Semester 2
HIT4302 Studio Project B, OR
HIT4304 Research Project B
Elective

### Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - A study score of at least 20 in English (any) and Units 1 & 2 - Mathematics (any). From Round 1, visit the VTAC website at: www.vtac.edu.au

### Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC Code: 34001 (CSP), 34002 (Fee)

### Double Degrees
**Bachelor of Business Information Systems / Bachelor of Business [BdS]**

This double degree option is a unique four-year program that combines the Business Information Systems degree with a business degree. Students master information systems concepts and skills, and also complete a business degree majoring in a discipline such as accounting or marketing. With appropriate choice of business units of study, the program can meet the membership requirements of the Australian Society of Certified Practising Accountants (ASCPA).

Students must satisfy the course requirements of both the Bachelor of Business Information Systems and the Bachelor of Business to be eligible for the double degree.

### Aims & Objectives
The course is designed to provide students with a complete study of business practices leading to a choice of generalist or specialist career in the utilisation of information systems technology to solve business problems.

### Campus
Hawthorn

### Career Opportunities
Graduates are likely to pursue careers in business and systems analysis, business process analysis, business requirements analysis, project management, systems analysis, IS/IT consultancy, business relationship management, business development management, and when you have gained experience, as an IT Director and CIO. Alternatively students may pursue a variety of business careers, especially those involving decision making with respect to information systems.

### Professional Recognition
This course is acknowledged as being at the professional level with the Australian Computer Society (ACS). The program has been externally vetted by ACS, ensuring it meets the highest standard of the profession and the industry.

### Course Duration
Four years full-time plus one year optional Industry-Based Learning.

Students holding an international student visa are not eligible for the optional Industry-Based Learning, nor permitted to study the course part-time.

### Course Structure
- Thirteen Information Systems Core Studies (162.5 credit points)
- Six Business Core Studies (75 credit points)
- One Project Core (12.5 credit points)
- One Information Systems Specialist Elective (12.5 credit points)
- One Business specified elective (12.5 credit points)
- Six units chosen to from a Business Major (75 credit points)
- Four electives chosen from ICT electives, Business electives or from other discipline areas (50 credit points)

### Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HIT0004 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

All students must meet the requirements to complete a major that apply to all Bachelor of Business students. Students must complete a six-unit major in Business. The available business disciplines are:

- Accounting
- Business Law
- Finance
- Human Resource Management / Organisation Behaviour
- Manufacturing Management
- Management / Faculty of Business and Enterprise
- Marketing

See page 32 for business major/minor details.

### Electives
Choose 10 electives (125 credit points) subject to the following rules:

- Six electives (75 credit points) must be chosen so that the student completes the requirements of a major in Business
- The remaining four electives (50 credit points) may be chosen from approved ICT electives, Business electives, or from other discipline areas.

Students must meet the prerequisite requirements of the elective they select. Availability of all electives is subject to timetabling and resource constraints.

Arts electives could include:

- Australian Studies
- Cultural Studies
- Italian Studies
- Japanese
• Literature
• Media Studies

Social Science electives could include:
• Politics
• Psychology
• Philosophy and Cultural Inquiry

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Recommended Study Sequence

Stage 1
Semester 1
HBC110 Accounting for Success

HIT1401 Introduction to Business Information Systems

HIT1402 Database Analysis and Design

HIT1403 ICT Environments

Semester 2
HSB110 Organisation and Management

HBM110 The Marketing Concept

HIT1404 Introduction to Programming in .NET

HIT2405 Requirements Analysis and Modelling

Stage 2
Semester 1
HIT2408 Information Systems Risk and Security

Stage 3
Semester 1
Choose one of:

HIT2420 Database Management Systems, OR

HIT3412 Business Information Systems Analysis

Elective

Elective

Semester 2
HIT2411 Business Data Communications & Networks

HIT2427 Configuring Business Information Systems Solutions

HIT2431 Configuring Business Information Systems Solutions

Elective

Elective

Stage 4
HIT3101 Industry-Based Learning

Note: This optional Industry-Based Learning (IBL) program is not available to international students.

Stage 4 or 5
Semester 1
HIT3424 Professional Issues in Information Technology

Elective

Elective

Semester 2
HIT3044 Professional Issues in Information Technology

Choose one of:

HIT3416 Industry Project (Analytical), OR

HIT3417 Industry Project (Technical), OR

HIT3427 Configuring Business Information Systems Solutions

Elective

Elective

Approved ICT Electives

HIT2092 Advanced Web Technologies

HIT2315 Usability

HIT2420 Database Management Systems

HIT2425 Business Systems Programming in .NET

HIT2427 Object-Oriented Programming in .NET

HIT3037 Programming in Java

HIT3078 Knowledge Management

HIT3110 Component Based Development .NET

HIT3142 Object Oriented Modelling

HIT3200 Innovative Project

HIT3412 Business Information Systems Analysis

HIT3413 Business Intelligence

HIT3419 Decision Analysis Systems

HIT3421 Database Implementation

HIT3422 Database Performance Issues

HIT3423 Enterprise Systems Management

HIT3424 Information Systems Management

HIT3426 Enterprise Systems Implementation

HIT3416 Industry Project (Analytical)

HIT3417 Industry Project (Technical)

HIT4071 Research Project

Other ICT electives may be chosen subject to timetabling, prerequisites and approval of program coordinator.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any). Passes may be accumulated over more than one year.

Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and have at least five years related work experience, may be considered for admission if they can demonstrate motivation and ability to succeed.

2007 Round 1 Clearly-In ENTER: 70.20 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34561 (CSP), 34562 (Fee), (Int, Fee).

For further information, visit the VTAC website at: www.vtac.edu.au

Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swinburne.edu.au/scholarships

Bachelor of Engineering (Telecommunication and Network Engineering) / Bachelor of Science (Computer Science and Software Engineering) [1069]

This double degree course prepares students for professional careers in the converging telecommunications, internet and information industries. It has a major focus on the application of computers and computer networking in the internet/telecommunications field, and the software engineering techniques involved.

This course is also offered through the Vice-Chancellor's Scholarship Program. Successful applicants are awarded HECS waiver scholarships and will be funded for the duration of their course. Note that this program is not available to international students. For further information visit the website at: www.swinburne.edu.au/hed/scholarships/vc_policy.htm

Swinburne University of Technology | Undergraduate Course Handbook 2008
Aims & Objectives

This course aims to:

- Develop in students a broad mastery of the basic science and engineering principles underlying telecommunications and internet technologies, including the computing technologies (hardware and software), and an ability to apply that knowledge.
- Develop in students a thorough understanding of appropriate engineering methods and techniques, and competence in their application, so that students are able to comprehend and analyse problems and obtain satisfactory design solutions which, where appropriate, show originality and resourcefulness.
- Develop students’ communication skills so that they can present their ideas clearly by verbal and graphic means both within the engineering community and the community at large.
- Give students an appropriate introduction to the role of the professional engineer in the community and to explore the social effects of engineering decisions.
- Develop moral, social, aesthetic, environmental and ethical concepts essential to a satisfying personal philosophy and a sound professional attitude.
- Develop abilities to function effectively as an individual and in project teams, whether as manager, leader or team member.
- Prepare students for the changing workplace and the changing societal context of engineering by developing their life-long learning skills and flexibility of mind.
- To produce graduate engineering scientists with multi-disciplinary skills in engineering and science that integrate the fields of telecommunications and Internet technologies with that of information and software technologies.
- To deliver a current and relevant course of study covering the principal areas of telecommunications engineering, related to the Internet, software engineering, computer science and electronics.
- To integrate the formal five-year course of study with an optional one year period of industry based learning*.
- To deliver a professionally recognised course of study which will enable graduates to join the Institution of Engineers Australia as graduate members and provide credit at Level 1 (the highest) towards professional membership of the Australian Computer Society.

* Please note that Industry-Based Learning is not available to international students.

In the field of Information Technology, the course aims to develop in students:

- A sound knowledge of computer science and software engineering.
- The skills necessary for working in a software development team on a large scale project.
- Skills in the object-oriented approach to systems analysis, design and implementation.
- Communication and management skills required to successfully manage software development projects.
- An understanding of social, legal and ethical issues confronting the software and engineering professional.
- Knowledge and experience in human factors, knowledge-based systems, database systems and data communications.

Campus
Hawthorn

Career Opportunities
Graduates will find rewarding high-tech careers both in Australia and internationally, in the converging telecommunications, multimedia, computing, and internet ‘information technology’ industries. They may become an internet applications engineer, a telecommunications link designer, an embedded computing systems designer, an embedded software systems designer, a network switching and protocol designer, an analyst/designer/manager of internal corporate multimedia networks, or a network administrator/web-master. Graduates will also be qualified to find employment in organisations engaged in medium to large-scale software development.

Professional Recognition
This program is fully accredited by Engineers Australia and graduates are eligible for graduate membership of Engineers Australia. In addition this program is acknowledged as being at the Professional Level with the Australian Computer Society (ACS) and has been externally vetted by ACS, ensuring it meets the highest standard of the profession and the industry.

Course Duration
Five years full-time. An optional and additional year of Industry Based Learning (IBL) may also be available. Students holding an international student visa are required to study full-time. The optional year of Industry-Based Learning (IBL) is not available to international students.

Course Structure
This course will operate under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four units will generally be taken each semester. The typical student’s average weekly workload during semester is therefore expected to be fifty hours. Total student contact hours, including lectures, classes, tutorials, flexible learning and laboratory and field sessions will vary in different semesters.

Students will normally be enrolled in the Recommended Study Sequence and must successfully complete a minimum of 500 credit points. In all cases, students must choose units of study from Unit Groups according to the following Rules, subject to timetable constraints and prerequisite studies being met. The Course Panel has the authority to approve additional elective studies for particular students. Such approvals will be advised to the Faculty Academic Committee.

Students choose units from five Study Groups:
- Telecommunications and Software Engineering Core Studies
- Internetworking Studies
- Specialist Technical Studies
- Management and Business Studies
- Generic Skills Studies

According to the following rules, students complete at least 500 credit points made up of:
- 425 credit points from Telecommunications and Software Engineering Core Studies
- 25 credit points from Internetworking Studies
- 25 credit points from Specialist Technical Studies
- 25 credit points from Management and Business Studies
- Generic Skills Studies (completion of the units of study in this group required)

Units of Study
Telecommunications and Software Engineering Core Studies

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HET108</td>
<td>Professional Skills - Telecommunications</td>
</tr>
<tr>
<td>HET192</td>
<td>Electronic Systems</td>
</tr>
<tr>
<td>HET202</td>
<td>Digital Electronics Design</td>
</tr>
<tr>
<td>HET214</td>
<td>Circuits and Electronics 1</td>
</tr>
<tr>
<td>HET232</td>
<td>Embedded Microcontrollers</td>
</tr>
<tr>
<td>HET306</td>
<td>Unix for Telecommunications</td>
</tr>
<tr>
<td>HET317</td>
<td>Network Security and Resilience</td>
</tr>
<tr>
<td>HET313</td>
<td>Telecommunication Technologies</td>
</tr>
<tr>
<td>HET314</td>
<td>Communications Principles</td>
</tr>
<tr>
<td>HET315</td>
<td>Communications Information Theory</td>
</tr>
<tr>
<td>HET316</td>
<td>Electromagnetic Waves</td>
</tr>
<tr>
<td>HET329</td>
<td>Digital Signal and Image Processing</td>
</tr>
<tr>
<td>HET336</td>
<td>Network Modeling and Analysis</td>
</tr>
<tr>
<td>HET436</td>
<td>Broadband Multimedia Networks</td>
</tr>
<tr>
<td>HET492</td>
<td>Wireless Communications</td>
</tr>
<tr>
<td>HET552</td>
<td>Design and Development Project</td>
</tr>
<tr>
<td>HIT1307</td>
<td>Internet Technologies</td>
</tr>
<tr>
<td>HIT1402</td>
<td>Database Analysis and Design</td>
</tr>
<tr>
<td>HIT2080</td>
<td>Introduction to Programming</td>
</tr>
<tr>
<td>HIT2308</td>
<td>Software Development Practices</td>
</tr>
<tr>
<td>HIT2316</td>
<td>Usability</td>
</tr>
<tr>
<td>HIT3037</td>
<td>Programming in Java</td>
</tr>
</tbody>
</table>
HIT3044 Professional Issues in Information Technology
HIT3158 Software Engineering Project A
HIT3258 Software Engineering Project B
HIT3172 Object-Oriented Programming in C++
HIT3181 Technical Software Development
HIT3309 Software Project Practices and Management
HIT3310 Software Architectures and Design
HIT3311 Software Deployment and Evolution
HMS111 Engineering Mathematics 1
HMS112 Engineering Mathematics 2
HMS213 Engineering Mathematics 3B
HMS214 Engineering Mathematics 4B

**Internetworking Studies (all 12.5 CP)**
HIT1005 Engineering Project
HIT104 LAN Principles
HET410 Network Administration
HET417 Photonics and Fibre Optics
HET424 IP Technologies
HIT3712 Enterprise Networking
HIT3713 Internetwork Routing
HIT3714 Internetwork Switching

**Specialist Technical Studies (all 12.5 CP)**
HET308 Circuits and Electronics 2
HET378 Engineering Management 1
HET379 Engineering Management 2
HET381 Advanced Embedded Systems
HIT392 Intelligent Agents
HIT393 Intelligent Systems
HIT394 Enterprise Networking
HIT395 Internetwork Routing
HIT396 Internetwork Switching

**Management & Business Studies (all 12.5 CP)**
HBSG200 New Venture Development and Management
HES3380 Engineering Management 1
HES3381 Engineering Management 2

**Generic Skills Studies (all 0 CP)**
HIT0004 Careers in the Curriculum
HED400 Professional Experience in Engineering

**Recommended Study Sequence**

**Stage 1**
HET105 Professional Skills - Telecommunications
HET313 Telecommunication Technologies
HIT2080 Introduction to Programming
HMS111 Engineering Mathematics 1

**Semester 2**
HIT182 Electronic Systems
HIT3161 Technical Software Development
HMS112 Engineering Mathematics 2

Choose one of:

- HIT1005 Engineering Project
- HIT104 LAN Principles
- HIT3713 Internetwork Routing
- HIT410 Network Administration

**Stage 2**

**Semester 1**
HET202 Digital Electronics Design
HIT3172 Object-Oriented Programming in C++
HMS213 Engineering Mathematics 3B

Choose one of:

- HIT417 Photonics and Fibre Optics
- HIT424 IP Technologies
- HIT3712 Enterprise Networking
- HIT3714 Internetwork Switching

**Semester 2**
HIT0004 Careers in the Curriculum
HET214 Circuits and Electronics 1
HET232 Embedded Microcontrollers
HIT3037 Programming in Java
HMS214 Engineering Mathematics 4B

**Stage 3**

**Semester 1**
HET317 Network Security and Resilience
HET314 Communications Principles
HET396 Network Modelling and Analysis
HIT2308 Software Development Practices

**Optional IBL Year**

- HW050 Industry-Based Learning

**Semester 2**
HET329 Digital Signal and Image Processing
HIT4102 Database Analysis and Design
HIT1307 Internet Technologies

Specialist Technical Studies (choose one)

**Stage 4**

**Semester 1**
HET316 Electromagnetic Waves
HET552 Design and Development Project
HIT3309 Software Project Practices and Management
Specialist Technical (TIT) studies (choose one)

**Semester 2**
HET306 Unix for Telecommunications
HET315 Communications Information Theory
HIT2316 Usability
HIT3310 Software Architectures and Design

**Stage 5**

**Semester 1**
HET436 Broadband Multimedia Networks
HIT3158 Software Engineering Project A
HIT3311 Software Deployment and Evolution

Management and Business Studies (choose one)

**Semester 2**
HET452 Wireless Communications
HIT3044 Professional Issues in Information Technology
HIT3258 Software Engineering Project B

Management and Business Studies (choose one)

* Students who have not completed an approved Cisco Networking Academy Program (CNAP) must do HIT104 and HIT424.

** The optional year of Industry-Based Learning in Australia is currently not available to international students.
Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any) and at least 25 in one of Mathematical Methods (either) or Specialist Mathematics.

Selection mode: CY12: ENTER and two-stage process with a middle-band of approximately 20%.

Middle-band selection: Applicants who have a study score of at least 25 in Information Technology: Information Systems, Physics and/or Specialist Mathematics and/or successful completion of VTIC Networking Academy Program, will be deemed to have an ENTER up to 3.0 percentage points higher for each study to a maximum of 8.5 percentage points.

2007 Round 1 Clearly-In ENTER: 80.00 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 34191 (CSP), 34192 (Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Honours Year

Bachelor of Information Systems (Honours) [A068]

An Honours year is intended to provide students, with demonstrated academic ability, the opportunity to pursue their undergraduate studies to an advanced level; to deepen their intellectual understanding in their major field and to develop their research skills.

The Honours course is a recognised point of entry into postgraduate research studies. Students concentrate on their chosen major area, gaining a better understanding and practising appropriate research techniques. The requirement to complete a substantial original piece of research for their thesis ensures that honours graduates develop their abilities to conceptualise problems, devise research strategies and carry out individual research work under the supervision of a member of staff with expertise in the area.

Campus

Hawthorn

Career Opportunities

The course's strong orientation to research instructs students in the principles and techniques of original research and prepares them for areas of professional employment in which conceptual, organisational and research skills are in demand.

Course Duration

One year full-time.

Course Structure

Honours students enrol in an equivalent of eight units of study: four coursework units and an Honours thesis equivalent to four units of study. The course consists of components with a breakdown of workload as follows:

HIT4000 Honours Research Project (50 credit points)

Coursework (50 credit points) comprising:

- HIT4010 Research Methods (12.5 credit points)
- Three honours elective units of study (12.5 credit points per unit)

At least two Honours units of study must be advanced postgraduate level (or equivalent) or one of the Honours Reading Units HIT4020 and HIT4021. At most, one of the three honours units of study can be an advanced undergraduate level unit. These units are chosen in collaboration with the supervisor and approved by the honours program manager.

Units of Study

Semester 1

| HIT4000 | Honours Research Project |
| HIT4010 | Research Methods |
| elective 1 |
| elective 2 |

Semester 2

| HIT4000 | Honours Research Project |

Elective 3

Entry Requirements

To be eligible for admission to the Honours course, a student must have demonstrated a high level of academic achievement overall and an excellent academic record in their chosen major study.

A student who holds a Bachelor's (pass) degree from Swinburne University of Technology or another recognised university (or equivalent) or is eligible to graduate with a Bachelor's (pass) degree may be admitted to the Honours course.

Application Procedure

The application form is available for downloading at www.it.swin.edu.au/centres/HonoursApplicationForm.pdf

Bachelor of Information Technology (Honours) [B051]

This honours course is intended to provide students, with demonstrated academic ability, the opportunity to pursue their undergraduate studies to an advanced level, to deepen their intellectual understanding in their major field and to develop their research skills.

The honours course is a recognised point of entry into postgraduate research studies. Students concentrate on their chosen major area, gaining a better understanding and practising appropriate research techniques. The requirement to complete a substantial original piece of research for their thesis ensures that honours graduates develop their abilities to conceptualise problems, devise research strategies and carry out individual research work under the supervision of a member of staff with expertise in the area.

Campus

Hawthorn

Career Opportunities

For students wishing to seek employment following their honours degree, the course affords the opportunity to extend their knowledge of information technology and to specialise in an area within it. The course's strong orientation to research instructs students in the principles and techniques of original research and prepares them for areas of professional employment in which conceptual, organisational and research skills are in demand.

Course Duration

One year full-time.

Course Structure

Honours students enrol in an equivalent of eight units of study: four coursework units of study and an Honours thesis equivalent to four units of study. The course consists of components with a breakdown of workload as follows:

HIT4000 Honours Research Project (50 credit points),

Coursework (50 credit points) comprising:

- HIT4010 Research Methods (12.5 credit points).
- Three honours elective units of study (12.5 credit points per unit).

At least two honours units of study must be advanced postgraduate level (or equivalent) or one of the Honours Reading Units HIT4020 and HIT4021. At most, one of the three honours units of study can be an advanced undergraduate level unit. These units of study are chosen in collaboration with the supervisor and approved by the honours program manager.

Units of Study

Semester 1

| HIT4000 | Honours Research Project |
| HIT4010 | Research Methods |
| elective 1 |
| elective 2 |

Semester 2

| HIT4000 | Honours Research Project |

Elective 3

Entry Requirements

To be eligible for admission to the honours course, a student must have demonstrated a high level of academic achievement overall and an excellent academic record in their chosen major study.

A student who is eligible to graduate with, or already holds a Bachelor of Information Technology (pass) degree from Swinburne University of Technology
may also be admitted to the Honours course.

Application Procedure
The application form is available for downloading at www.it.swin.edu.au/centres/HonoursApplicationForm.pdf

Bachelor of Science (Computer Science)(Honours) [Z06SY]
The honours year is intended to provide students, with demonstrated academic ability, the opportunity to pursue their undergraduate studies to an advanced level; to deepen their intellectual understanding in their major field and to develop their research skills.

The honours course is a recognised point of entry into postgraduate research studies. Students concentrate on their chosen major area, gaining a better understanding and practising appropriate research techniques. The requirement to complete a substantial original piece of research for their thesis ensures that honours graduates develop their abilities to conceptualise problems, devise research strategies and carry out individual research work under the supervision of a member of staff with expertise in the area.

Course Duration
One year full-time

Course Structure
Honours students enrol in an equivalent of eight units of study; four coursework units of study and an Honours thesis equivalent to four units of study. The course consists of components with breakdown of workload as follows:

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT4000</td>
<td>HIT4000</td>
</tr>
<tr>
<td>Honours Research Project</td>
<td>Honours Research Project</td>
</tr>
<tr>
<td>50 credit points.</td>
<td>50 credit points.</td>
</tr>
</tbody>
</table>

Coursework 50 credit points, comprising:
- HIT4010 Research Methods (12.5 credit points)
- Three honours elective units of study (12.5 credit points per unit)

At least two honours units of study must be advanced postgraduate level (or equivalent) or one of the Honours Reading Units HIT4020 and HIT4021. At most, one of the three honours units of study can be an advanced undergraduate level unit. These units of study are chosen in collaboration with the supervisor and approved by the honours program manager.

Units of Study

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT4000</td>
<td>HIT4000</td>
</tr>
<tr>
<td>Honours Research Project</td>
<td>Honours Research Project</td>
</tr>
<tr>
<td>Elective 1</td>
<td>Elective 2</td>
</tr>
<tr>
<td>Elective 3</td>
<td>Elective 3</td>
</tr>
</tbody>
</table>

Entry Requirements
To be eligible for admission to the honours course, a student must have demonstrated a high level of academic achievement overall and an excellent academic record in their chosen major study.

A student who holds a bachelor's (pass) degree from Swinburne University of Technology or another recognised university (or equivalent) or is eligible to graduate with a bachelor’s (pass) degree may also be admitted to the honours course.

Application Procedure
The application form is available for downloading at www.it.swin.edu.au/centres/HonoursApplicationForm.pdf

Faculty of Life and Social Sciences
We are living during a time of rapid technological innovation, described by some as the 'Information Age', or the 'Third Industrial Revolution'. The extraordinary technological changes have led to new economic, political and social institutions and have given rise to new forms of everyday life, relationships, artistic expression, new choices and ethical dilemmas.

The Faculty of Life and Social Sciences is an innovative combination of disciplines, from the life and neurological sciences to the social sciences and humanities. It provides a unique platform for cross-disciplinary teaching and research at the cutting edge of technological innovation, including its behavioural and social dimensions.

It is the largest of Swinburne's six faculties, with more than 180 academic, administrative, research and technical support staff and more than 150 postgraduate research students.

There is high demand for undergraduate programs within the faculty, particularly in the areas of media and communications, psychology, sociology, multimedia and psychophysiology. According to the 2005 Good Universities Guide to Universities and Private Colleges graduates of our sciences and psychology courses have employment rates among the highest levels of all Victorian graduates in these disciplines.

Both undergraduate and postgraduate programs attract an increasing number of international students, particularly in the area of multimedia. There is growing international interest in the biotechnology and biomedical sciences disciplines, which is expected to result in increasing enrolments of students from overseas in the next few years.

With its breadth of courses and demonstrated excellence in research, the faculty is well placed to continue to deliver high quality education and research outcomes to the local and international community, and government and industry partners in research and consultancy.

Further Information
Telephone: +61 3 9214 8859
Fax: +61 3 9214 5921
Email: issinfo@swin.edu.au
Website: www.swinburne.edu.au/bs

Bachelor of Arts [N055]
This course provides a broad introduction to the study of human culture, specifically languages, media studies and philosophy. Students undertake a major study in Australian Studies, Cultural Studies, Electronic Society, Italian Studies, Japanese Studies, Literature, Media Studies, or Philosophy and Cultural Inquiry. They may also undertake studies in Business, Politics, Psychology or Sociology. It nurtures the capacity for lifelong independent learning by developing skills of investigation and analysis, critical thinking, and effective communication which equip students for a wide range of professional employment in administration, education, publishing and media, and for further study.

Aims & Objectives
The Bachelor of Arts degree is designed to produce graduates who are able to contribute effectively and professionally to a dynamic global economy because they possess:
- Knowledge, conceptual understanding and expertise in specific areas of study in the humanities and social sciences.
- An understanding of the relationship between theory, research and practice.
- A capacity for critical analysis, creativity and problem solving.
- Professional skills, including the ability to use modern technology.
- Independent and life-long learning skills.
- Comprehensive written and oral communication skills.
- A strong sense of personal integrity and an appreciation of the role of ethics in private and public life.
- Excellent problem solving, teamwork and decision making skills.

The combined focus on generic skills and sound academic and professional knowledge within the Bachelor of Arts degree equips students well for a life-long process of personal development. Students with these attributes are highly sought after by employers who increasingly seek people with well developed generic skills, in addition to professional competencies. (See Employability Skills for the Future, Department of Education, Science and Training, 2002.)
Career Opportunities
Swinburne Arts graduates are well equipped to find work in areas where employers put a high premium on well developed conceptual understanding and other critical and creative reasoning skills needed to come to terms with and respond effectively to the complex and changing demands of the contemporary workplace. These areas include: policy analysis and development, research, community development, administration, public relations, publishing, media and professional psychology. Arts graduates find employment as journalists, psychologists, librarians, teachers, interpreters, sociologists, publishers, internet providers and marketers.

Professional Recognition
The three-year undergraduate sequence in Psychology at Swinburne is accredited by the Australian Psychological Society.

Course Duration
Three years full-time or six years part-time. An optional and additional year of Industry-Based Learning (IBL) may also be available.

Course Structure
The Bachelor of Arts is a three year full-time or six year part-time course requiring the successful completion of 24 units of study (300 credit points), of which 19 units of study must be Arts or Social Science units of study. Included in these 19 units of study must be at least one Arts major (see list below). All units of study in the degree normally have a value of 12.5 credit points. A full-time load consists of eight units of study per year (four per semester) and four units of study per year (two per semester) for a part-time load. Students are required to complete a selection of majors, minors and electives.

Careers in the Curriculum
In addition to the above, students must complete a compulsory unit of study HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Major
A major is an approved grouping of eight units of study in an area of study. It consists of two Stage 1 units of study (eg: HAH100) and six post-Stage 1 units of study. At least three units of study must be taken at Stage 3 (e.g. HAH310). The remaining post-Stage 1 units of study may be taken at Stage 2 or 3. Students wishing to undertake a Japanese or Psychology minor are required to complete six units of study, plus HMA103 Statistics and Research Methods A (for reference area of study section).

Minor
A minor is an approved grouping of five units of study, normally consisting of one unit of study at Stage 1 and four post-Stage 1 units of study, at least one of which is normally at Stage 3. Students wishing to undertake a Japanese or Psychology minor are required to complete six units of study, plus HMA103 Statistics and Research Methods A for Psychology (for reference area of study section).

Elective
An elective is a unit of study that is not taken as part of a major or minor. Students may include one of the three-unit Electives Plus Sequences as part of their elective choice (see Electives Plus Sequences below). Students must choose one of the following options:

Option 1
- Major 1
- Major 2
- 6 Electives

Option 2
- Major 1
- 3 Electives

Option 3
- Major
- Minor 1
- Minor 2
- 6 Electives

Note: At least one major MUST be Arts specific. In addition students must complete a minimum of 19 Arts and Social Sciences units of study, regardless of which of the above options they choose.

Course requirements and restrictions
The following course requirements and restrictions apply:

- A maximum of ten Stage 1 units of study can be completed in the degree.
- Students must complete a minimum of six Stage 3 units of study.
- Compulsory unit HAC0001 must be completed.
- A unit of study can only be counted once as a part of a major, minor or elective.
- Students are not permitted to enrol in units of study where they have completed other units of study that are deemed to be equivalent, e.g. dual coded unit of study such as HAH210/HAH310.
- Equivalent units of study cannot be used for credit at a level other than that which the student has enrolled, e.g. if a student has enrolled in a unit of study coded as a Stage 2 unit of study (HAH210), it cannot be counted as a Stage 3 unit of study.
- Students are permitted to include one non-Social Science or non-Arts minor as part of their course structure. If so, no further non-Social Science or non-Arts units of study will be counted towards the degree.
- Students must complete a minimum of 19 Arts or Social Science units of study.
- The maximum number of units of study that may be completed for the degree course is 26.

Prerequisites/Corequisites
Students must ensure they have met prerequisite/corequisite requirements listed for each unit of study before enrolling.

Majors/Minors & Specialisations
To qualify for the award of the Bachelor of Arts degree, students must complete at least one major chosen from the Arts area of study. Students may choose a second major or minors from Arts or Social Sciences and a minor from the Business areas of study. Majors/minors:
- Australian Studies
- Cultural Studies
- Electronic Society
- Italian Studies
- Japanese
- Literature
- Media Studies
- Philosophy and Cultural Inquiry
- Social Science majors/minors
- Politics
- Psychology
- Sociology

See page 175 for Social Science majors/minors details.

Business minors
- Accounting
- Asian Business
- Business Law
- Economics
- eBusiness
- European Business
- Finance
- Human Resource Management / Organisation Behaviour
- Information Systems
- International Business
- Manufacturing Management
- Marketing
Electives Plus Sequences

Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Entrepreneuring Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Entry Requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE prerequisites: Units 3 and 4 - a study score of at least 20 in English (any).

Extra requirements: Some applicants must sit the SAT Multiple Choice test if they are one of the applicants outlined under STAT at www.swinburne.edu.au or on the Swinburne information pages in the VTAC guide.

All non year 12 students (NONY12) should refer to the VTAC website at: www.vtac.edu.au for further information.

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34321(CSP), 34322 (Fee), 34323 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Part-time study is also available to Australian citizens and holders of Australian residency.

Arts Specialisations

Australian Studies - Major/Minor

Australian Studies examines Australian society and its cultures from several different disciplinary perspectives. It is an interdisciplinary major with core units of study from Politics. Its main objective is to provide a solid body of knowledge about the political, economic and social history of twentieth century Australia. From that base, it provides the opportunity to undertake specific studies within particular disciplines such as Literature, Media Studies, Philosophy and Cultural Inquiry, Politics and Sociology. It offers a broad perspective on contemporary public issues and a context for the analysis of questions in other disciplines. Australian Studies encourages students to identify connections between political and social institutions, cultural practices and economic structures, to analyse how they are changing and the effects of those changes. It is about the dynamics of contemporary Australian society. The Australian Studies program combines training in established disciplines with the more flexible, problem-solving approach that boundary-crossing allows. It also has the benefit of permitting students to follow their intellectual interests as they develop over the three years.

Australian Studies offers the generic intellectual skills that the Swinburne Bachelor of Arts and Bachelor of Social Science emphasise. These are not strictly vocational, but they are what many employers are looking for in graduates. They form an ideal complement to specific career training.

An Australian Studies major must include two Stage 1 units of study, and six post-Stage 1 units of study. At least three units of study must be taken at Stage 3. The remaining post-Stage 1 units of study may be taken at Stage 2 or 3.

Units of study available in the Australian Studies major are as follows:

**Stage 1**

- HAL105 The Media in Australia
- HAP100 Australian Politics
- HAS101 Sociology 1B (Social Institutions and Social Change) (Social Institutions and Social Change)

**Stage 2**

- HAL205 Australian Writing and Cultural Change
- HAM210 Popular Culture
- HASP202 Social Theory

The following units of study may be taken at Stage 2 or Stage 3 but not both:

- HAH222/HAM322 Practical Ethics
- HAP221/HAP321 Modern Australia
- HASP206/HASP309 Public Policy in Australia
- HASP201/HASP301 Work in Australia

**Stage 3**

- HALM312 Cinema Studies
- HASP314 Sociology of Health
- HASP309 Social Research Design: Principles and Methods *
- HASP307 Qualitative Research Methods

* Compulsory units of study in the major or minor.

Cultural Studies - Major/Minor

Cultural studies is a discipline focussing on the nature of culture and its current transformations. At Swinburne, Cultural Studies is an interdisciplinary major, consisting of core units of study from Philosophy & Cultural Inquiry and the choice of a diversity of units of study from a range of other disciplines. This has the advantage of providing students with a rigorous foundation in the theoretical debates taking place within cultural studies, together with a wide choice of other units of study pertaining to practical cultural issues.

Units of study comprising the degree come from Philosophy & Cultural Inquiry, Media Studies, Literature, Politics, Psychology, and Asian Languages and Cultures. Students are provided with the means to comprehend and critically analyse the diverse components and media of culture: science, literature, film, television, popular culture, print, electronic media etc., the relationship between these, and the relationship between different cultures of different regions, nations and ethnic groups.

Students may construct their degrees to focus on their particular interests, such as: literature and film as cultural phenomena, cultural politics, the problematic relationship between cultures in a globalised world, the problems associated with the disintegration of traditional cultures and the search for new foundations for beliefs, science and philosophy as cultural phenomena.

The study of culture is becoming increasingly important in a number of professions, and in the business world, as the pace of cultural transformation accelerates and members of a diversity of cultures are increasingly brought into contact with one another. It is particularly useful for the business world as transnational corporations increasingly dominate the world and for people entering the professions of journalism, teaching, film and television production, social work and politics.

A Cultural Studies major must include two Stage 1 units of study, and six post-Stage 1 units of study. At least three units of study must be taken at Stage 3. The remaining post-Stage 1 units of study may be taken at Stage 2 or 3.

Units of study available in the Cultural Studies major are as follows:

**Stage 1**

- HAH100 Introduction to Philosophy
- HAH101 History of Ideas

**Stage 2**

- HALM104 Media Literature Film: Texts and Contexts

**Stage 3**

- HAL209 Australian Writing and Cultural Change
## Electronic Society - Major/Minor

We are living in a networked society; electronic telecommunication networks are impacting upon all facets of daily life. New forms of connectivity, made possible by information and communication networks, are contributing to the development of a different kind of society. New forms of social interaction are evolving, as people throughout the globe have daily access to more and more people outside their local communities. This has precipitated the formation of new social congregations, so-called 'virtual communities' that have no unified, geographical location, yet cohere in the 'cyberspace' of the electronic network. Changing norms of community necessitate careful rethinking of concepts such as place, space and identity, culture, work, domestic life and the public sphere. The Electronic Society major is designed to introduce students to the broad range of issues involved in the rise of the networked society and the implications of global culture.

The Electronic Society major is interdisciplinary in its focus and is designed to offer students the opportunity to explore these issues from a broad range of perspectives. Subjects in the major are drawn from the disciplines of Media and Communications, Politics, Philosophy and Cultural Inquiry, Psychology and Sociology.

Understanding of the issues involved in the emergence of an electronic society is relevant to virtually all industries and professions, as the impact of the networked society has touched all facets of social and cultural life. In particular, graduates who have studied Electronic Society will be sought after by industries such as human services, broadcasting and telecommunications. There are also opportunities in community development, marketing, the public housing sector, as well as arts organisations and funding bodies.

A major in Electronic Society consists of two Stage 1 units of study and six post Stage 1 units of study. Three units of study must be taken at Stage 3. The remaining post Stage 1 units of study may be taken at Stage 2 or 3.

Units of study available in the Electronic Society major or minor are as follows:

### Stage 1
- **HAM105** Reading, Writing and Criticism
- **HAS100** Sociology 1A (Introductory Sociology)

### Stage 2
- **HALM207** Network Cultures
- **HAM211** New Media: The Telecommunications Revolution
- **HAS201** eSociety: Sociology of the Electronic Age
- **HAY208** Human Information Processing (cannot be undertaken if HAS201 has been completed)

### Stage 3
- **HAL309** Renaissance Literary Culture
- **HALM312** Cinema Studies
- **HALM315** Network Literacies
- **HAY310** Social and Personal Relationships (cannot be undertaken if HAY307 has been completed)

#Compulsory units of study in the major or minor.

## Italian Studies

We are living in a networked society; electronic telecommunication networks are impacting upon all facets of daily life. New forms of connectivity, made possible by information and communication networks, are contributing to the development of a different kind of society. New forms of social interaction are evolving, as people throughout the globe have daily access to more and more people outside their local communities. This has precipitated the formation of new social congregations, so-called 'virtual communities' that have no unified, geographical location, yet cohere in the 'cyberspace' of the electronic network. Changing norms of community necessitate careful rethinking of concepts such as place, space and identity, culture, work, domestic life and the public sphere. The Electronic Society major is designed to introduce students to the broad range of issues involved in the rise of the networked society and the implications of global culture.

The Electronic Society major is interdisciplinary in its focus and is designed to offer students the opportunity to explore these issues from a broad range of perspectives. Subjects in the major are drawn from the disciplines of Media and Communications, Politics, Philosophy and Cultural Inquiry, Psychology and Sociology.

Understanding of the issues involved in the emergence of an electronic society is relevant to virtually all industries and professions, as the impact of the networked society has touched all facets of social and cultural life. In particular, graduates who have studied Electronic Society will be sought after by industries such as human services, broadcasting and telecommunications. There are also opportunities in community development, marketing, the public housing sector, as well as arts organisations and funding bodies.

A major in Electronic Society consists of two Stage 1 units of study and six post Stage 1 units of study. Three units of study must be taken at Stage 3. The remaining post Stage 1 units of study may be taken at Stage 2 or 3.

Units of study available in the Electronic Society major or minor are as follows:

### Stage 1
- **HAM105** Reading, Writing and Criticism
- **HAS100** Sociology 1A (Introductory Sociology)

### Stage 2
- **HALM207** Network Cultures
- **HAM211** New Media: The Telecommunications Revolution
- **HAS201** eSociety: Sociology of the Electronic Age
- **HAY208** Human Information Processing (cannot be undertaken if HAS201 has been completed)

### Stage 3
- **HAL309** Renaissance Literary Culture
- **HALM312** Cinema Studies
- **HALM315** Network Literacies
- **HAY310** Social and Personal Relationships (cannot be undertaken if HAY307 has been completed)

#Compulsory units of study in the major or minor.

## Italian Studies - Major/Minor

### Italian Studies at Swinburne

Italian Studies at Swinburne provides an insight into Italy, a modern, thriving and wealthy European country, industrially, economically and technologically advanced, among the top seven leading powers in the world. The Italian Studies major is designed to acquaint students with Italian, an important cultural, community and commercial language. The broad aim is to enable students to communicate with Italians, on both linguistic and socio-cultural levels. The major study in Italian therefore strongly emphasises language acquisition, and progressively treats those aspects of Italian language, literature, history, geography, economics, sociology, politics and culture appropriate to an understanding of the modern nation and its inhabitants.

A degree major in Italian may be obtained by undertaking studies in one of two streams offered: a Beginner stream and an Advanced (post-VCE) stream. The Advanced (post-VCE) stream requires a pass and above at VCE level or equivalent.

Proficiency in Italian is an extremely useful skill to possess in addition to expertise in other fields such as arts, business, engineering, applied science and design. Graduates in Italian find employment in a wide range of professions including international business and trade, reinsurance, public relations, travel and tourism, social work, journalism and teaching.

The Italian major is sequential in nature. Students must successfully complete all language units of study in one stage before progressing to the next stage. Students are required to complete eight units of study to satisfy the requirements for an Italian Studies major.

Note: Students who intend, on graduating, to teach Italian either at primary or secondary level or who do not wish to preclude this possibility should note that the exit point required in the Italian Studies major must be at the third-year Advanced level. To achieve this, it is suggested that students transfer to the Advanced stream by enrolling in HAA384 Individual Project after completing HAA283 Italian 2Z. A credit is the minimum requirement to be able to transfer to the Advanced course. Students must obtain approval from the Italian Studies Convenor prior to changing from one stream to another.

The Italian Studies major consists of the following:

### Beginners Stream

#### Stage 1
- **HAA181** Italy and Its Language 1A
- **HAA182** Italy and Its Language 2A

#### Stage 2
- **HAA281** Italian 2X
- **HAA282** Introductory Business Italian 2Y
- **HAA283** Italian 2Z

#### Stage 3
- **HAA381** Italian 3X
- **HAA387** Advanced Business Italian
- **HAA388** Contemporary Italy

### Advanced Stream

#### Stage 1
- **HAA194** Advanced Italian 1A
- **HAA185** Advanced Italian 1B

#### Stage 2
- **HAA284** Advanced Italian 2A
- **HAA285** Introductory Business Italian 2B
- **HAA286** Advanced Italian 2C

#### Stage 3
- **HAA384** Individual Project
- **HAA387** Advanced Business Italian
- **HAA388** Contemporary Italy
Japanese - Major/Minor

Relationships have been established between Australia and Japan on all levels of the national life. This means that a study of Japanese language, both spoken and written, is in students' interests. Furthermore, it is important that a knowledge and understanding of Japan be increased in Australia. The Japanese programs train students to communicate effectively in Japanese and provide the opportunity to study Japanese culture, society and economy through the language. The emphasis is on contemporary Japanese.

The language units of study offered in Japanese have been specifically designed for non-native speakers of the Japanese language. These units of study will not meet the needs of native speakers of Japanese who will not be eligible to enrol in the language.

Teaching, events organising, interpreting, tourism (within Australia and Japan).

The Japanese major is sequential in nature. Students must successfully complete all units of study in a stage before progressing to the next stage.

A major in Japanese can be completed in a Beginners or Advanced (post-VCE Japanese) stream. Students who intend, on graduating, to teach Japanese either at primary or secondary level or who do not wish to preclude this possibility should note that the exit point required for attainment of the Japanese major is the third-year Advanced level. To achieve this, students are advised to transfer to the Advanced stream by enrolling in third year Advanced units of study after completing second year. A credit is the minimum requirement to be able to transfer to the Advanced course.

Note: Students whose Stage 2 results are credit or above in either the Beginners or the Advanced stream may choose to study a part of their third year course at an approved tertiary institution in Japan. A scholarship scheme has been established to enable students to undertake this alternative.

Beginners Stream

<table>
<thead>
<tr>
<th>Stage 1</th>
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<tbody>
<tr>
<td>HAJ107</td>
<td>Introductory Japanese 1A#</td>
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<tr>
<td>HAJ108</td>
<td>Written Japanese 1B#</td>
</tr>
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<td>HAJ109</td>
<td>Spoken Japanese 1B#</td>
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<th>Stage 2</th>
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<tbody>
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<td>HAJ215</td>
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<td>HAJ218</td>
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<tr>
<td>HAJ319</td>
<td>Spoken Japanese 3A#</td>
</tr>
<tr>
<td>HAJ325</td>
<td>Advanced Written Japanese 3B</td>
</tr>
<tr>
<td>HAJ326</td>
<td>Advanced Spoken Japanese 3B</td>
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Advanced Stream

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<td>HAJ131</td>
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<td>Advanced Written Japanese 1B#</td>
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<tr>
<td>HAJ133</td>
<td>Advanced Spoken Japanese 1B#</td>
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<td>HAJ231</td>
<td>Advanced Written Japanese 2A#</td>
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<tr>
<td>HAJ232</td>
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</tr>
<tr>
<td>HAJ233</td>
<td>Advanced Written Japanese 2B#</td>
</tr>
<tr>
<td>HAJ234</td>
<td>Advanced Spoken Japanese 2B#</td>
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</thead>
<tbody>
<tr>
<td>HAJ331</td>
<td>Advanced Written Business Japanese#</td>
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<tr>
<td>HAJ332</td>
<td>Advanced Spoken Business Japanese#</td>
</tr>
<tr>
<td>HAJ333</td>
<td>Advanced Business Readings and Communication</td>
</tr>
</tbody>
</table>

Literature - Major/Minor

A Literature major provides students with the opportunity to gain an introductory grounding in the theory and practice of new writing technologies, such as hypertext. A Literature major must include two Stage 1 units of study, and six post Stage 1 units of study. At least three units of study must be taken at Stage 3.

Units of study available in the Literature major are as follows:

<table>
<thead>
<tr>
<th>Stage 1</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>HALM104</td>
<td>Media Literature Film: Texts and Contexts</td>
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<tr>
<td>HAL103</td>
<td>Writing Fiction</td>
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<table>
<thead>
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<td>HAL209</td>
<td>Australian Writing and Cultural Change</td>
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<tr>
<td>HALM200</td>
<td>Reading, Writing and Criticism</td>
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<tr>
<td>HALM202</td>
<td>Journalism: Processes and Practices</td>
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<tr>
<td>HALM207</td>
<td>Network Cultures</td>
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<tr>
<td>HAL309</td>
<td>Renaissance Literary Culture</td>
</tr>
<tr>
<td>HALM312</td>
<td>Cinema Studies</td>
</tr>
<tr>
<td>HALM315</td>
<td>Network Literacies</td>
</tr>
<tr>
<td>HALM317</td>
<td>Literature/Media Project</td>
</tr>
</tbody>
</table>

Media Studies - Major/Minor

The study of the media and its place in the technological revolution is an increasingly significant issue. Questions about the nature of communication and its social and ethical consequences are crucial, whether we are dealing with the Internet or with TV news. Swinburne offers a uniquely broad-based education in the media and associated industries. The Media Studies major is taught primarily by people who have had extensive workplace experience (in publishing, the print...
Students need to understand how the media works and be able to recognise the place they occupy within the broader social context. They also need to be skilled at thinking for themselves, and to be informed and flexible in their approaches to the kinds of problem solving crucial in the development of a professional career. Media Studies can incorporate a wide range of academic and production units of study.

At Swinburne, they fall into three overlapping groups:

- **Textual analysis**, which is concerned with the various ways in which we make sense of film and media materials (TV, print, new media).
- The study of the political economy of media and telecommunications, dealing with issues such as ownership and control of the media and the cultural impact of new technologies.
- Hands-on units of study in which the emphasis is on publishing, radio production and workplace experience (these are available only after successful completion of the appropriate prerequisites).

Media Studies students gain employment directly in media industries as well as in media related work. Media Studies is a vital prerequisite for careers in print journalism, radio, television, film distribution and public relations. Positions are increasingly emerging in the exciting telecommunications industry, with telecommunications carriers, suppliers, resellers and service providers. Some specialised opportunities also exist in broadcasting and communications research. The experience of past students has been that, even if they are not always directly employed in a media industry, the knowledge acquired about the media during the course has had many useful applications for them, both personally and professionally.

A Media Studies major must include two Stage 1 units of study and six post-Stage 1 units of study. At least three units of study must be taken at Stage 3. The remaining post-Stage 1 units of study may be taken at Stage 2 or Stage 3.

Units of study offered in the Media Studies major are as follows:

**Stage 1**

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>HALM104</td>
<td>Media Literature Film: Texts and Contexts*</td>
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<tr>
<td>HAM105</td>
<td>The Media in Australia*</td>
</tr>
<tr>
<td>HALM113</td>
<td>Professional Communication Practice</td>
</tr>
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</table>

* These units of study must be completed as part of Media Studies major unless the student is also completing an Electronic Society or Literature major.

**Stage 2**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>HALM200</td>
<td>Reading, Writing and Criticism</td>
</tr>
<tr>
<td>HALM202</td>
<td>Journalism: Processes and Practices</td>
</tr>
<tr>
<td>HALM207</td>
<td>Network Cultures</td>
</tr>
<tr>
<td>HAMZ10</td>
<td>Popular Culture</td>
</tr>
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<td>HAMZ21</td>
<td>New Media: The Telecommunications Revolution</td>
</tr>
<tr>
<td>HASM201</td>
<td>eSociety: Sociology of the Electronic Age</td>
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</table>

The following unit of study may be taken at Stage 2 or Stage 3 but not both:

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<tbody>
<tr>
<td>HAMZ206</td>
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**Stage 3**

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<tr>
<td>HALM312</td>
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<td>HALM315</td>
<td>Network Literacies</td>
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<td>HALM317</td>
<td>Literature/Media Project**</td>
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<tr>
<td>HAMZ313</td>
<td>Radio Production and Criticism A</td>
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<tr>
<td>HAMZ315</td>
<td>Information Society: A Global Perspective</td>
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<tr>
<td>HAMZ316</td>
<td>Radio Production and Criticism B</td>
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</tbody>
</table>

**HALM317 Literature/Media Project** is a compulsory unit of study.

**Philosophy and Cultural Inquiry - Major/filminor**

The units of study offered by Philosophy and Cultural Inquiry are designed to provide a well-grounded understanding of the major conceptual influences that have shaped our contemporary world view, and thereby enhance our prospects for responding insightfully and effectively to the challenges posed by contemporary life. To advance this goal, we draw on influential currents in philosophy, the history of ideas, social and political theory, psychology, and the social sciences, as well as the history and philosophy of science.

Philosophy and Cultural Inquiry at Swinburne thus provides a unique blend of traditional philosophical studies and an inquiry into the cultural underpinnings of present day society, with a view to facilitating the development of more effective responses to pressing contemporary challenges. In addition to enriching their conceptual understanding, we introduce students to the techniques of philosophical inquiry with a view to developing a variety of critical and creative reasoning skills, which are of great value in their own right in personal and professional life.

Overall, Philosophy and Cultural Inquiry at Swinburne seeks to promote philosophical understanding, cultural awareness, and critical and creative thought, and thereby advance the student's personal and professional well being. Moreover, we aspire to do so in a way that complements the activities of the other major areas of study within the Arts and Social Sciences and across the University.

The level of conceptual understanding and the range of thinking skills it engenders, a major (or minor) in Philosophy and Cultural Inquiry is a very worthwhile qualification in job seeking and professional life, one that is widely valued by a diverse range of employers. In particular, the ability to solve problems, to communicate, to organise ideas effectively, to understand complex material, and to assess pros and cons - skills which are the life blood of philosophical inquiry - are widely regarded as invaluable assets in the workplace. Thus, especially when complemented by vocationally oriented studies, a qualification in Philosophy and Cultural Inquiry equips students with both the conceptual understanding and the critical and creative reasoning skills needed to come to terms with, and respond effectively to, the complex and changing demands of the contemporary workplace, and thereby facilitates both their professional and their personal development.

A Philosophy and Cultural Inquiry major must include two Stage 1 units of study, and six post Stage 1 units of study. At least three units of study must be taken at Stage 3. The remaining post Stage 1 units of study may be taken at Stage 2 or 3.

Units of study available in the Philosophy & Cultural Inquiry major or minor are as follows:

**Stage 1**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAH100</td>
<td>Introduction to Philosophy</td>
</tr>
<tr>
<td>HAH101</td>
<td>History of Ideas</td>
</tr>
<tr>
<td>HAH103</td>
<td>Critical Thinking</td>
</tr>
</tbody>
</table>

The following units of study can be taken as Stage 2 or Stage 3, but not both:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAH206</td>
<td>Philosophy of Culture</td>
</tr>
<tr>
<td>HAH210</td>
<td>Philosophy, Media, Culture</td>
</tr>
<tr>
<td>HAH219</td>
<td>Philosophical Psychology</td>
</tr>
<tr>
<td>HAH222</td>
<td>Practical Ethics</td>
</tr>
<tr>
<td>HAH223</td>
<td>Environmental Philosophy</td>
</tr>
<tr>
<td>HAH224</td>
<td>Natural Philosophy and the Sciences</td>
</tr>
<tr>
<td>HAH225</td>
<td>Philosophy, Politics, and Society</td>
</tr>
<tr>
<td>HAH226</td>
<td>Knowledge, Reason, and Society: Contemporary Issues and Perspectives</td>
</tr>
</tbody>
</table>

Note: All post-Stage 1 Philosophy units of study may be studied as either Stage 2 or Stage 3 units of study. Students must study at least three units of study at Stage 3 to meet the requirements of the major.

**Bachelor of Arts (Games and Interactivity) [477]**

The Bachelor of Arts in Games and Interactivity aims to produce highly skilled graduates capable of gaining employment in the growing computer games industry, or indeed the wider multimedia industry. Through a combination of media, multimedia and specialised games units of study, students gain an understanding of how games operate within society, at the same time developing a set of research and communications skills that are applicable across a range of industries. Instruction is through a combination of theoretical and practical teaching modes, which allows students to get hands-on experience with game development within a broader theoretical framework. While this degree would be suitable for anyone with an interest in studying games as a social phenomenon, it is especially well suited to those seeking employment in the games industry, but who do not wish to become high-level programmers.

This course is also offered through the Vice-Chancellor’s Scholarship Program. Successful applicants are awarded HECS waiver scholarships and will be funded for the duration of their course. For further information visit the website at: www.swin.edu.au/scholarships
Aims & Objectives
This program aims to develop in students:

- A sound and broad knowledge of the game and game development industry and its relationship to society and popular culture through sociological, anthropological and theoretical semiotic discussion.
- Skills in the application of learning and instructional design principles to structured multimedia and interactive applications.
- The ability to function effectively as an individual and in project teams, whether as manager, leader or team member.
- The communication and management skills required to successfully manage multimedia development projects.
- Life-long learning skills and flexibility of mind for the rapidly evolving multimedia and games industries.
- An appreciation of texts in context; the various ways in which we make sense of film and media materials (TV, radio, print, new media).
- An understanding of the process of multimedia and interactive application development, and the skills necessary for working in a development team on a large scale project.
- An understanding of the changing face of multimedia and the current games industry, in relation to both acceleration in the use and development of technology, and its impact on society.
- An comprehensive understanding of aspects of user-interaction.
- An immersive and experiential understanding of the interactive nature of game play.
- Knowledge of current concepts of game critique and analysis including: aesthetics, genres, game space and level and character design.
- An understanding of the importance of adapting communication styles for specific contexts.
- An understanding of game-specific principles such as ludology and haptics and their application to wider games research.
- An understanding of how games fit into the emerging media environment and in particular how traditional ideas of narrative translate to the game form.
- An understanding of the political economy of media and sociological impact of electronic games— including issues such as ownership, the effects debate and the cultural impact of new technologies, games and game play.
- An understanding of the changing face of multimedia, in relation to both acceleration in the use and development of technology, and its impact on society.

Campus
Hawthorn

Career Opportunities
This course offers a broad spectrum of career opportunities in the multimedia, media and communications and the 2D and 3D games industries.

Professional Recognition
Students of this program will be eligible for student membership of the Australian Games Developers Association of Australia (GDAA). Graduates working in the Games Industry will be eligible for membership of the International Games Developer’s Association (IGDA) as well as the GDAA. Students and graduates will also be eligible for membership of the Australasian Interactive Media Industry Association (AIMIA) upon accreditation.

Course Duration
Three years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available.

Course Structure
This degree requires students to successfully complete 300 credit points of approved units of study equivalent to three years of full-time study, with an optional additional year of Industry-Based Learning (IBL) normally taken after two years of study. The course operates under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed equivalent to one hour of student work per week for one semester whether in contact with staff or in private study. This typical student’s average weekly workload during semester is therefore expected to be 50 hours. Total student contact hours, including lectures, classes, tutorials, and laboratory sessions, will be approximately 16 hours/week during academic semesters.

* Please note that Industry-Based Learning is not available to international students.

Students will choose units of study from four (4) groups:
- Group 1 - Core Games and Interactivity units;
- Group 2 - Media Studies Majors units;
- Group 3 - Further Multimedia units; and
- Group 4 - Elective units.

Students must successfully complete a minimum of 300 credit points according to the following rules:
- 150 credit points from Group 1 - Core Games and Interactivity units;
- 150 credit points from Group 2 - Media Studies Majors units;
- 37.5 credit points from Group 3 - Further Multimedia units or a recognised elective sequence (see Elective Plus Sequences below);
- 12.5 credit points from Group 3 or 4 - Further Multimedia units or Elective units.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Electives Plus Sequences
Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
- Design: Process and Strategy
- Effective Communication
- Enterprise-focused Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Units of Study

**Group 1 - Core Games and Interactivity units**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HET200</td>
<td>Interactive Games Structures</td>
</tr>
<tr>
<td>HET208</td>
<td>3D Animation and Special Effects</td>
</tr>
<tr>
<td>HET213</td>
<td>User Experience Design</td>
</tr>
<tr>
<td>HET215</td>
<td>Multimedia Applications</td>
</tr>
<tr>
<td>HET222</td>
<td>Digital Video and Audio</td>
</tr>
<tr>
<td>HET232</td>
<td>Principles of Game Design</td>
</tr>
<tr>
<td>HET217</td>
<td>Business of Games</td>
</tr>
<tr>
<td>HET433</td>
<td>Multimedia Interfaces</td>
</tr>
<tr>
<td>HET233</td>
<td>Games &amp; Interactivity Lab 1</td>
</tr>
<tr>
<td>HET234</td>
<td>Games &amp; Interactivity Lab 2</td>
</tr>
<tr>
<td>HET434</td>
<td>Games &amp; Interactivity Project</td>
</tr>
<tr>
<td>HET435</td>
<td>Games &amp; Interactivity Project 2</td>
</tr>
</tbody>
</table>

**Group 2 - Media Studies Major units**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAM104</td>
<td>Media Literature Film: Texts and Contexts</td>
</tr>
<tr>
<td>HAM105</td>
<td>The Media in Australia</td>
</tr>
</tbody>
</table>
Further Multimedia units

Elective units**

HET324
HET213
HET222
HET215
HET332
HET407
HDMD102
HET123
HAM315
HALM312
HALM207
HALM200
HET113
HET20B
HET321 Physics
HAL
HDMD101
HET113 The Internet and World Wide Web 1
HAM210
HAL
HDMD101
HET113 The Internet and World Wide Web 2
HAM207
HAL
HDMD101
HET113 Design for Multimedia 1
HET210
HAL
HDMD101
HET113 Design for Multimedia 2
HET407
HAL
HDMD101
HET113 Multimedia Technology
HET322
HAL
HDMD101
HET113 Interactive Multimedia
HET324
HAL
HDMD101
HET113 Media Theory, DVD and Compositing

** Other electives may be drawn from other disciplines subject to prerequisites, timetabling and approval of program coordinator.

Notes:
- Not all units are offered all semesters. Some may only be offered subject to sufficient enrollments.
- The course panel has the authority to approve additional elective studies for particular students. Such approvals will be advised to the Faculty of Life and Social Sciences Academic Committee.

Suggested Progression for Full-Time Students

Semester 1
HET120 Interactive Games Structures
HET215 Multimedia Applications
HET222 Digital Video and Audio
HALM104 Media Literature Film, Texts and Contexts

Semester 2
HAM105 The Media in Australia
HET208 3D Animation and Special Effects
HET213 User Experience Design
HDMD101 Design for Multimedia 1

Semester 3
HAM271 New Media: The Telecommunications Revolution
HET233 Games & Interactivity Lab 1
HET113 The Internet and World Wide Web 1

Elective A - Choose 1 of:
HALM200 Reading, Writing and Criticism
HAM210 Popular Culture
HAM113 Professional Communication Practice

Semester 4
HET325 Principles of Game Design
HET217 Business of Games
HET234 Games & Interactivity Lab 2

Elective B - Choose 1 of:
HALM207 Network Cultures
HASM201 eSociety: Sociology of the Electronic Age

Optional IBL year
HSW050 Industry-Based Learning
HSW055 Industry-Based Learning

Semester 5
HET434 Games & Interactivity Project
HET433 Multimedia Interfaces
HALM312 Cinema Studies
HAM313 Radio Production and Criticism A

Semester 6
HET435 Games & Interactivity Project 2
HAM315 Information Society: A Global Perspective
HET332 Interactive Multimedia

Elective C - Choose 1 of:
HAL103 Writing Fiction
HBSG200 New Venture Development and Management

Notes:
In addition to the above, students must complete compulsory unit of study HAC0001 Careers in the Curriculum to be awarded the degree.

# The optional IBL program is not available to international students.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2008 VCE prerequisites: Units 3 & 4 - a study score of at least 20 in English (any). All Non-Year 12 students (NONY12) should refer to the VTAC website at www.vtac.edu.au for further information.

2007 Round 1 Clearly-In ENTER: 77.75 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34021 (CSP), 34022 (Fee), 34023 (Int. Fee)
For further information, visit the VTAC website at www.vtac.edu.au
Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at www.swinburne.edu.au/undergrad/scholarships/index.html

Bachelor of Arts (Media and Communications) (N053)
Offering a uniquely broad-based education in the media and associated industries, the Media and Communications course is primarily taught by people who have had extensive workplace experience (in publishing, the print media and radio) and who share the belief that the student, who is best equipped to face the vagaries of the workplace, is the one who has a general and broad overview as well as a specialised appreciation of how it operates.

Media Studies can incorporate a wide range of academic and production units of study. At Swinburne they fall into three overlapping areas:

- Texts in context: an exploration of the various ways in which we make sense of film, television, radio production, print, the internet, new converged media, advertising and popular culture.
- The study of the political economy of media and telecommunications: an examination of issues such as ownership, regulation and ethics of the media and the cultural impact of new converged technologies.
- Hands-on units of study: an emphasis on electronic and print publishing, online and convergent radio production and workplace experience (these are available only after successful completion of the appropriate prerequisites).

Aims & Objectives
This course will enable students to:
- Understand how the media works;
- Be able to recognise the place it occupies within the broader social context;
- Be skilled at thinking for themselves; and
- Be informed and flexible in their approaches to problem-solving, which is crucial in the development of a professional career.

Campus
Hawthorn

Career Opportunities
Media Studies is a vital ingredient if you are interested in a career as a journalist or a radio producer, or work in public relations or communications research. The experience of past students has been that, even if they are not always directly
employed in a media industry, the knowledge acquired about the media during 
the course has had many useful applications, both professionally and personally.

Course Duration
Three years full-time or equivalent part-time. An optional and additional year of 
Industry Based Learning (IBL) may also be available.

Course Structure
The Bachelor of Arts (Media and Communications) is a three year full-time or six 
year part-time course requiring the successful completion of 24 units of study 
(300 credit points), of which 19 units of study must be Arts or Social Science 
units of study. All units of study in the degree are normally worth 12.5 credit 
points. A full-time load consists of eight units of study per year (four per 
semester) and four units of study per year (two per semester) for a part-time 
load. Students are required to complete ten media and communications units of 
study, an additional major or two minors, and electives.

Careers in the Curriculum
In addition to the above, students must complete a compulsory unit of study 
HAC2001 Careers in the Curriculum to be awarded the degree. Careers in the 
Curriculum (CIC) is an innovative unit designed to assist Swinburne students to 
enhance their employability and career prospects. It is usually undertaken in the 
second year of your course and is compulsory for all undergraduate students 
who commence their course from 2007 onwards. Students studying CIC will not 
incurs a HECS or fee debt as the cost will be met by the university as part of an 
initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming 
undergraduates from 2007 will undertake 25 credit points of 
professionally-focused final year major projects within their programs of study. 
Entry with advanced standing may require alternate study sequences to be 
undertaken.

Media and Communications Component
The Media and Communications Component is an approved grouping of ten 
Media units of study. It consists of two Stage 1 units of study and eight post 
Stage 1 units of study. At least four units of study must be taken at Stage 3.

Major
A major is an approved grouping of eight units of study in an area of study. It 
consists of two Stage 1 units of study (eg: HAH100) and six post-Stage 1 units of 
study. At least three units of study must be taken at Stage 3 (eg: HAH310). The 
remaining post-Stage 1 units of study may be taken at Stage 2 or 3. Students 
 wishing to undertake a Psychology major are required to complete ten units of 
study (refer to the relevant area of study section) plus HMA103 Statistics and 
Research Methods A.

Minor
A minor is an approved grouping of five units of study in an area of study. It 
normally consists of one unit of study at Stage 1 and four post-Stage 1 units of 
study, at least one of which is normally at Stage 3. Students wishing to undertake 
a Japanese or Psychology minor are required to complete six units of study, plus 
HMA103 Statistics and Research Methods A for psychology (refer to relevant 
area of study section).

Elective
An elective is a unit of study that is not taken as part of a major or minor. 
Students may include one of the three-unit Elective Plus Sequences (see below) 
as part of their elective choice.

In addition to completing the Media and Communications component, students 
must choose one of the following options:

Option 1
• Major
• 6 Electives

Option 2
• Minor 1
• Minor 2
• 4 Electives

Note: In addition students must complete a minimum of 19 Arts and Social 
Sciences units of study, regardless of which of the above options they choose.

Course requirements and restrictions
The following course requirements and restrictions apply:

• A maximum of ten Stage 1 units of study can be completed in the degree.

Students must complete a minimum of six Stage 3 units of study.
• Compulsory unit HAC2001 must be completed.
• A unit of study can only be counted once as part of a major, minor or elective.
• Students are not permitted to enrol in units of study where they have 
  completed other units of study that are deemed to be equivalent, e.g. dual 
  coded units of study such as HAH210/HAH310.
• Equivalent units of study cannot be used for credit at a level other than that 
  which the student has enrolled, e.g. if a student has enrolled in a unit of study 
  coded as a Stage 2 unit of study (HAH210), it cannot be counted as a Stage 3 
  unit of study.
• Students are permitted to include one non-Social Science or non-Arts minor as 
  part of their course structure. If so, no further non-Social Science or non-Arts 
  units of study will be counted towards the degree.
• Students must complete a minimum of 19 Arts or Social Sciences units of study.
• The maximum number of units of study that may be completed for the degree 
  course is 26.

Prerequisites/Corequisites
Students must ensure they have met prerequisite/corequisite requirements listed 
for each unit of study before enrolling.

Majors/Minors & Specialisations
To qualify for the award of the Bachelor of Arts (Media and Communications) 
degree, students must complete the Media and Communication component units of 
study, a major or two minors, and electives.

Arts majors/minors:
• Australian Studies
• Cultural Studies
• Electronic Society
• Italian Studies
• Japanese
• Literature
• Philosophy and Cultural Inquiry

See page 147 for Arts major/minor details.

Social Science majors/minors:
• Politics
• Psychology
• Sociology

See page 178 for Social Science major/minor details.

Business minors:
• Accounting
• Asian Business
• Business Law
• Economics
• eBusiness European Business
• Finance
• Human Resource Management / Organisation Behaviour
• Information Systems
• International Business
• Manufacturing Management
• Marketing

See page 32 for Business major/minor details.

Note: Students should choose a Business minor carefully as only five non-Arts 
and non-Social Science units of study must count towards the degree.

Electives Plus Sequences
Electives plus sequences provide Swinburne degree students with options to 
broaden their career skills and strengthen their employability by selecting from 
units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of 
up to three units from one of the following themes:

• Design: Process and Strategy
• Effective Communication
• Enterprising Marketing
• Establishing and Running a Business
• Information Orientation and Knowledge Management
• Language Practice and Culture
• Multimedia & Web Development
• Sustainability
• The Networked Economy
• Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Units of Study

**Media and Communications component**

Two units of study at Stage 1:

**Stage 1**

HALM104 Media Literature Film: Texts and Contexts*
HAM103 The Media in Australia*
HAM113 Professional Communication Practice

* These units must be completed as part of the Media and Communications Component unless the student is also completing an electronic society or literature major.

And eight of the following units of study, with at least four at Stage 3:

**Stage 2**

HALM209 Reading, Writing and Criticism
HALM207 Network Cultures
HALM202 Journalism: Processes and Practices
HAM210 Popular Culture
HAM211 New Media: The Telecommunications Revolution
HASM201 eSociety: Sociology of the Electronic Age

The following unit of study may be taken at Stage 2 or Stage 3, but not both

HAPM226/HAPM326 Making News and Making Policy: The Media and Politics

**Stage 3**

HALG312 Cinema Studies
HALG315 Network Literacies
HALM317 Literature/Media Project**
HAMG313 Radio Production and Criticism A
HAMG314 Professional Attachment Program (this subject is available to selected students only)
HAMG315 Information Society: A Global Perspective
HAMG316 Radio Production and Criticism B

** HALM317 Literature/Media Project is a compulsory unit of study.

Entry Requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an intermediate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 and 4 - a study score of at least 20 in English (any). Extra requirements: Some applicants must sit the STAT Multiple Choice test if they are one of the applicants outlined under STAT at www.swinburne.edu.au/ vtac or on the Swinburne information pages in the VTAC guide.

All Non-Year 12 students (NONY12) should refer to the VTAC website at: www.vtac.edu.au for further information.

2007 Round 1 Clearly-In ENTER: 75.55 (CSP), n/a (Fee)

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 34071(CSP), 34072(Fee), 34073 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Part-time study is also available for Australian citizens and holders of Australian residency.

Bachelor of Arts (Psychology and Psychophysiology) [N051]

The Bachelor of Arts (Psychology and Psychophysiology) is unique to Swinburne and offers students an undergraduate degree with majors in Psychology and Psychophysiology. This course encompasses the fields of psychology and cognitive & behavioural Neurosciences.

The psychology major provides a broad introduction to a range of relevant studies, with more specialised work in developmental psychology, cognition, social psychology, personality, design and measurement, psychological measurement and abnormal psychology.

The psychophysiology major emphasises an understanding of physiological processes relevant to the study of psychology. Areas of study include neuroanatomy, neurophysiology, physiological responses to sleep, dreaming, memory and cognition, and brain disorders. Psychophysiology also looks at the use of biological recording technology relevant to the study of cognition and behaviour.

Swinburne psychology and psychophysiology students are regarded very highly in the community for their research, psychological and psychophysiological skills.

Campus

Hawthorn

Career Opportunities

Graduates of the Psychology and Psychophysiology course have a unique blend of skills. The combination of psychological knowledge with understanding of the underlying physiological processes associated with stress, intelligence, memory, personality and psychiatric disorders, for example, gives entry to a wide range of jobs. Graduates of this course have been employed in neuropsychological areas of hospitals and in research areas of universities and research institutes within the private and public sectors, community health services, and clinics, and areas associated with sports psychology, ergonomics, psychophysiology and clinical psychology.

Professional Recognition

The three year undergraduate sequence in psychology at Swinburne is accredited by the Australian Psychological Society (APS). The honours year in psychology is an APS accredited fourth year.

Course Duration

Three years full-time. An optional and additional year of Industry Based Learning (IBL) may also be available.

Course Structure

This course will operate under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four units of study, each worth 12.5 credit points, will generally be taken each semester. The typical student’s average weekly workload during semester is therefore expected to be fifty hours. Total student contact hours, including lectures, classes, tutorials, flexible learning and laboratory and field sessions will vary in different semesters. Students who perform well may progress to an honours program.

For the Psychology/Psychophysiology degree, students complete at least 300 credit points made up of:

• Psychophysiology Core Studies (137.5 credit points)
• Psychology Core Studies (100 credit points)
• Statistical Design & Measurement Core Studies associated with the Psychology Core Studies (37.5 credit points)
• Electives (25 credit points)

* Careers in the Curriculum (CIC)

In addition to the above, students must complete a compulsory unit of study HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.
Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Electives Plus Sequences
Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Entreprenising Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Units of Study

Psychology Core Studies (all 12.5 credit points)
HAY100 Psychology 101
HAY101 Psychology 102
HAY205 Cognition and Human Performance
HAY206 Developmental Psychology
HAY307 Social Psychology
HAY308 The Psychology of Personality
HAY309 Psychological Measurement
HAY321 Abnormal Psychology

Psychophysiology Core Studies (all 12.5 credit points)
HET102 Introductory Physiology
HET133 Human Physiology
HET148 Technology and Data Acquisition
HET219 Neurological Monitoring
HET226 Sensory Systems
HET227 Neurophysiology
HET231 Perception and Motor Systems
HET320 Psychophysiological Project
HET527 Sleep and Attention
HET528 Higher Cortical Functions
HET631 Abnormal Psychophysiology

Statistical Design & Measurement Core Studies (all 12.5 credit points)
HMA103 Statistics and Research Methods A
HMA278 Design and Measurement 2
HMA279 Design and Measurement 3

Electives: total of two selected (examples) (all 12.5 credit points)
Students can choose electives from any course offered in the Higher Education Division, subject to prerequisite and timetable restrictions and Course Panel approval.

HAS100 Introduction to Philosophy
HAP103 Critical Thinking
HAM105 The Media in Australia
HAM113 Professional Communication Practice
HES100 Australian Politics
HAS100 Sociology 1A (Introductory Sociology)

HAS101 Sociology 1B (Social Institutions and Social Change)
HBSG200 New Venture Development and Management
HES1510 Chemistry 1
HES1525 Chemistry 2
HES1555 Consumer Science
HET124 Energy and Motion
HIT2080 Introduction to Programming
HMS111 Engineering Mathematics 1
HMS112 Engineering Mathematics 2

Recommended Study Sequence
Semester 1
HAY100 Psychology 100
HET102 Introductory Physiology
HMA103 Statistics and Research Methods A
Elective* (Choose one):
HHA100 Introduction to Philosophy
HMA113 Professional Communication Practice
HAP100 Australian Politics
HAS100 Sociology 1A (Introductory Sociology)
HBSG200 New Venture Development and Management
HES1510 Chemistry 1
HET124 Energy and Motion
HIT2080 Introduction to Programming
HMS111 Engineering Mathematics 1

Semester 2
HAY101 Psychology 101
HET133 Human Physiology
HET148 Technology and Data Acquisition
Elective* (Choose one):
HHA103 Critical Thinking
HHA105 The Media in Australia
HAS101 Sociology 1B (Social Institutions and Social Change)
HBSG200 New Venture Development and Management
HES1525 Chemistry 2
HES1555 Consumer Science
HMS112 Engineering Mathematics 2

Semester 3
HAY205 Cognition and Human Performance
HET219 Neurological Monitoring
HET227 Neurophysiology
HMA279 Design and Measurement 3

Semester 4
HAY206 Developmental Psychology
HET226 Sensory Systems
HET231 Perception and Motor Systems
HMA279 Design and Measurement 3

Optional IBLE year#
HSW050 Industry-Based Learning#
HSW055 Industry-Based Learning#

Semester 5
HAY306 The Psychology of Personality
HAY309 Psychological Measurement
HET327 Sleep and Attention
HET528 Higher Cortical Functions

Semester 6
HAY307 Social Psychology
HAY21 Abnormal Psychology
HET320 Psychophysiological Project
HET521 Abnormal Psychophysiology

Swinburne University of Technology | Undergraduate Course Handbook 2008
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisits: Units 3 & 4 - a study score of at least 20 in English (any) and a study score of at least 25 in one of Biology, Chemistry, Mathematics (any), Psychology or Physics.

All Non-Year 12 students (NONY12) should refer to the VTAC website at: www.vtac.edu.au for further information.

2007 Round 1 Clearway ENTER: 76.40 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34461 (CSP), 34462 (Fee), 34463 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Bachelor of Health Science (Public and Environmental Health) [H069]

The Bachelor of Health Science (Public and Environmental Health) is a multidisciplinary course aimed at equipping graduates with a wide range of skills, knowledge and attributes in order to assist in the protection of the environment and the health of people living in it. Areas of study include science, law, communication, health policy and promotion, food and water safety, risk assessment, emergency and disaster management and sustainability. The course has strong links with industry and very high employment outcomes. It is also an accredited course in Victoria for Australian students seeking a career as an environmental health officer.

Aims & Objectives
The course has the following objectives:

- To produce a professional graduate who is able to communicate the role of public and environmental health management to the community and deploy environmental health principles in adding value to community health and quality of life.
- To produce in students a mastery of the basic theoretical and practical principles of public and environmental health management and their relationship to human behaviour, social health and the environment.
- To produce a professional graduate who has a thorough understanding of environmental health methodology and the ability to interpret and apply it competently and appropriately in the relevant professional context and setting.
- To instill the graduate with an appreciation of the role of the environmental health practitioner in society, a sense of resourcefulness, originality, impartiality and a well developed culture of community service and ethics.
- To develop self-educative skills, flexibility of mind, and an inherent recognition of the need to research and keep abreast of technological, financial, social and political change.
- To develop graduates who are able to communicate with and relate confidently to a wide range of professionals and others who interface with public and environmental health practice.
- To develop graduates who are able to participate in the education of society in matters of community health.
- To develop the management skills required to administer and deliver a range of public and environmental health services to an increasingly informed society.
- To assist students to demonstrate the necessary academic strengths and motivation to seek and obtain entry to a wide range of post graduate programs relevant to public and environmental health management.
- To meet the accreditation requirements for public and environmental health undergraduate degree programs set by the Australian Institute of Environmental Health.

Campus
Hawthorn

Career Opportunities
Graduates may qualify to work as Environmental Health Officers or obtain positions in the areas of health promotion, policy development, communicable disease investigation, immunisation, sustainability or public and community health planning.

The main employers of graduates are commonwealth, state and local government authorities and, increasingly, food and waste management industries, private consultancies and research positions. Graduates also work with overseas aid agencies in places such as Rwanda, Somalia, Vietnam and Iraq. Employment rates for graduates are consistently very high.

Professional Recognition
Membership of The Australian Institute of Environmental Health.

Course Duration
Three years full-time plus one year Industry-Based Learning (IBL).

Units of Study

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<tr>
<th>Stage 1</th>
<th>Semester 1</th>
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<tbody>
<tr>
<td>HES100</td>
<td>Sociology 1A (Introductory Sociology)</td>
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<tr>
<td>HES1490</td>
<td>Introduction to Chemistry *</td>
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<tr>
<td>HES1610</td>
<td>Concepts of Biology</td>
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<tr>
<td>HES1710</td>
<td>Philosophy and Practice of Public and Environmental Health</td>
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<td>Semester 2</td>
<td>HBSL100 Introductory Law</td>
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<td>HMS102 Introduction to Statistics</td>
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<td>HBS1H01 Behaviour and Communication in Organisations</td>
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<td>HES1715 Health Policy and Planning</td>
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<td>HES2700</td>
<td>Food Science</td>
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<tr>
<td>HES2710</td>
<td>Health and Environmental Law 1</td>
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<td>HES2725</td>
<td>Food Safety Principle and Practice 1</td>
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<td>Semester 2</td>
<td>HES2636 Microbes in the Environment</td>
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<td>HES2705 Water Science</td>
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<td>HES2715 Built and Sustainable Communities</td>
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<td>HES2735 Communicable Disease Control</td>
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<tr>
<th>Stage 3</th>
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<tr>
<td>HSW050</td>
<td>Industry-Based Learning</td>
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<tr>
<td>Semester 2</td>
<td>HSW055 Industry-Based Learning</td>
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Note that this optional IBL program is not available to international students.

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<tr>
<th>Stage 4</th>
<th>Semester 1</th>
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<tbody>
<tr>
<td>HES4700</td>
<td>Research Skills</td>
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<td>HES4710</td>
<td>Environmental Health Services Evaluation</td>
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<tr>
<td>HES4720</td>
<td>Environmental Management</td>
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<tr>
<td>HES4730</td>
<td>Food Safety Principle and Practice 2</td>
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<tr>
<td>Semester 2</td>
<td>HES4705 Research Project</td>
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<tr>
<td></td>
<td>HES4716 Health and Environmental Law 2</td>
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<td>HES4725 Occupational Health and Safety**</td>
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<td></td>
<td>HBSH1600 Administration and Management</td>
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</tbody>
</table>

* May be replaced by HES1510 Chemistry 1 for students with Year 12 chemistry.
** May be replaced by HBSG200 New Venture Development and Management or other approved elective.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum
(CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

**Final Year Experience - Major Projects**

As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

**Entry Requirements**

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification. 2008 VCE Prerequisites: Units 3 and 4 – a study score of at least 20 in English (any) and in Mathematics (any). Middle-band: Re-ranking based on study scores in Biology, Chemistry or Specialist Mathematics. All Non-Year 12 students (NONY12) should refer to the VTAC website at: www.vtac.edu.au

2007 Round 1 Clearing-In ENTER: RC

**Application Procedure**

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34051 (CSP), 34052 (Fee), 34053 (Int. Fee).

For further information, visit the VTAC website at: www.vtac.edu.au

In addition to making an application through VTAC, all applicants must complete the Application for Interview Form available on Swinburne’s Public and Environmental Health website at: www.swinburne.edu.au/health_enviro and return it to the Program Manager, Public & Environmental Health, Swinburne University, P.O Box 218, Hawthorn 3122 by the end of November.

Applicants lodging an application with VTAC after the end of November must contact the faculty office on (03) 9214 8372 for application details.

**Bachelor of Multimedia [J042]**

The Bachelor of Multimedia is designed for students who have prior tertiary level studies, such as a diploma or its equivalent. The course incorporates a comprehensive approach to multimedia with a strong emphasis on practical skills and techniques, including web design/programming, animation and digital video/audio. Elective studies can be taken in diverse areas from ICT through Arts to Business. Note: the number of Commonwealth Supported Place (CSP) entries available into this program for Australian students is extremely limited.

**Career Opportunities**

This course equips graduates for careers in web development & animation, video production, 3D animation, information architecture, CD / DVD production, and multimedia project management. It would also be a suitable grounding for those interested in starting a multimedia business.

**Course Duration**

Two years full-time.

Applicants who have completed substantial tertiary study in multimedia may be granted some exemptions and therefore complete the course in less than two years.

**Course Structure**

This program operates under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four units of study will generally be taken each semester. The typical student’s average weekly workload during a semester is therefore deemed to be fifty hours. Total student contact hours, including lectures, classes, tutorials, flexible learning and laboratory and field sessions will vary in different semesters, but will be less than 20 hours per week.

Students are normally enrolled in the Recommended Study Sequence (see below) and must successfully complete a minimum of 200 credit points. In all cases, students must choose units of study from Study Groups according to the following rules, subject to timetable constraints and prerequisite studies being met.

The Program Panel has the authority to approve additional elective studies for particular students. Such approvals will be advised to the Faculty Academic Committee.

Students study units chosen from three Study Groups:

- Multimedia Core Studies
- Further Multimedia Studies
- Co-Major Elective Studies

According to the rules listed below, students complete at least 200 credit points made up of:

- 100 credit points chosen from Multimedia Core Studies,
- 62.5 credit points chosen from Further Multimedia Studies, and
- 37.5 credit points chosen from Co-Major Elective Studies and/or Further Multimedia Studies.

Note: Students in the Bachelor of Multimedia must complete at least 100 credit points from the Core and Further Multimedia Studies groupings delivered by the Higher Education Division of Swinburne. This means students who are given exemptions from Core Multimedia Studies or Further Multimedia Studies (as credit for prior studies) are still required to complete 100 credit points of units of study from these groupings in order to complete the requirements of the degree.

**Careers in the Curriculum (CIC)**

In addition to the above, students must complete a compulsory unit of study HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

**Electives Plus Sequences**

Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Entrepreneur Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

**Units of Study**

- **Multimedia Core Studies (all 12.5 credit points)**
  - HAM113 Professional Communication Practice
  - HDMD101 Design for Multimedia 1
  - HET113 The Internet and World Wide Web 1
  - HET213 User Experience Design
  - HET215 Multimedia Applications
  - HET401 Multimedia Project 1
  - HET402 Multimedia Project 2
Aims & Objectives

The Bachelor of Multimedia (Business Marketing) aims to produce graduates with a broad range of multimedia production skills plus a thorough understanding of how multimedia and the Internet is revolutionising the way business is being conducted, in particular how the practice of marketing is changing in response to commercialisation of the World Wide Web.

A graduate of the Bachelor of Multimedia (Business Marketing) should have:
- A sound and broad knowledge of the design of multimedia applications and an appreciation of the various skills required.
- Skills in the application of learning and instructional design principles to structured multimedia applications.
- The ability to function effectively as an individual and in project teams, whether as manager, leader or team member.
- The communication and management skills required to successfully manage multimedia development projects.
- Been prepared for the rapidly evolving multimedia industry by developing their life-long learning skills and flexibility of mind.
- A thorough understanding of the way end-to-end enterprise-wide technologies are changing the way business is conducted.
- The means to participate in and understand the development of sophisticated methods of customer data management, with corresponding improvements in business efficiency and potential customer satisfaction.
- An understanding of the changing face of multimedia, in relation to both acceleration in the use and development of technology, and its impact on society.

Campus
Hawthorn, Sarawak

Career Opportunities
In addition to the typical career options for marketing graduates such as public relations, advertising, product/brand management, market research, direct marketing and international marketing, graduates of this course are qualified to pursue further career opportunities in e-commerce consulting, customer relationship management, digital media production, web design, video production and animation.

Course Duration
Three years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available.

Course Structure
This course will operate under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four units of study, each worth 12.5 credit points, will generally be taken each semester. The typical student's average weekly workload during semester is therefore expected to be fifty hours. Total student contact hours, including lectures, classes, tutorials, flexible learning and laboratory and field sessions will be approximately 16 hours/week during academic semesters.

Students choose units of study from five Study Groups:
- Core Multimedia Studies
- Further Multimedia Studies
- Co-major Studies Group A
- Co-major Studies Group B
- Elective Studies

According to the following rules, students complete at least 300 credit points made up of:
- 87.5 credit points from Core Multimedia Studies,
- 62.5 credit points from Further Multimedia Studies,
- 87.5 credit points from Co-major Studies Group A,
- 25 credit points from Co-major Studies Group B,
- 12.5 credit points from Elective Studies, plus an extra
- 25 credit points from Co-major Studies Group B and/or Elective Studies.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HAC0001. Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in...
the second year of their course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

**Final Year Experience - Major Projects**
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

**Units of Study**

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<tr>
<th>Core Multimedia Studies</th>
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<td>HDMD101</td>
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<th>Further Multimedia Studies</th>
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<td>HDMD102</td>
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<th>Co-major Studies Group A</th>
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<td>HBM220</td>
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<td>HBM330</td>
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<td>HBM341</td>
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<th>Co-major Studies Group B</th>
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<td>HBM271</td>
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<th>Elective Studies</th>
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<tbody>
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<td>HBC110</td>
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<td>HBE110</td>
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<td>HBG270</td>
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<tr>
<th>Recommended Study Sequence</th>
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<td>Semester 1</td>
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<td>Semester 4</td>
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<tr>
<th>Optional IBL year</th>
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Note: Not all units of study are offered all semesters. Some may be only offered subject to sufficient enrolments.

The course panel has the authority to approve additional elective studies for particular students. Such approvals will be advised to the Faculty of Life and Social Sciences Academic Committee.
A study score of at least 20 in English (any) or an equivalent. Note that this program is not available to international students.

**Entry Requirements**

Successful completion of an appropriate Victorian Year 12 or its equivalent. 2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any). Selection mode: CY12: ENTER and two-stage process with a middle-band of approximately 20%. All Non-Year 12 students (NONY12) should refer to the VTAC website at www.vtac.edu.au for further information.

2007 Round 1 Clear-In ENTER: 75.55 (CSF), n/a (Fee)

**Application Procedure**

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34061 (CSP), 34062 (Fee), 34063 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

**Bachelor of Multimedia (Media Studies) [HBM2]**

This double-major course provides the best of both worlds - theory and practice - by combining the study of media and communications policies, influences and practices with the applied and creative aspects of multimedia production - including web, 3D animation and digital video/audio. The course provides the broad coverage of a media/arts degree in conjunction with a hands-on approach to learning practical skills - the combination of both content and production.

This course is also offered through the Vice-Chancellor's Scholarship Program. Successful applicants are awarded HECS waiver scholarships and will be funded for the duration of their course. Note that this program is not available to international students. For further information visit the website at: www.swin.edu.au/scholarships

**Aims & Objectives**

The Bachelor of Multimedia (Media Studies) aims to produce graduates with a broad range of multimedia production skills combined with an appreciation of the emerging possibilities of the new media. The course will equip graduates with an understanding of how the media works and to recognise the place it occupies within the broader social context.

A graduate of the Bachelor of Multimedia (Media Studies) should have:

- A sound and broad knowledge of the design of multimedia applications and an appreciation of the various skills required;
- Skills in the application of learning and instructional design principles to structured multimedia applications;
- The ability to function effectively as an individual and in project teams, whether as manager, leader or team member;
- The communication and management skills required to successfully manage multimedia development projects;
- Been prepared for the rapidly evolving multimedia industry by developing their life-long learning skills and flexibility of mind;
- An appreciation of texts in context: the various ways in which we make sense of film and media materials (TV, radio, print, new media);
- An understanding of the political economy of media and telecommunications - including issues such as ownership, control of the media and the cultural impact of new technologies; and
- An understanding of the changing face of multimedia, in relation to both acceleration in the use and development of technology, and its impact on society.

**Campus**

Hawthorn

**Career Opportunities**

Graduates of this program are expected to be in high demand as the media industry continues to shift its delivery to the newer multimedia platforms.

Examples include: interactive content creation, journalism, public relations, communications research, advertising, information architecture, digital media production, web design, video production, animation, and architectural visualisation.

**Course Duration**

Three years full-time or equivalent part-time.

**Course Structure**

This course will operate under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four unit of study, each worth 12.5 credit points, will generally be taken each semester. The typical student’s average weekly workload during semester is therefore expected to be fifty hours. Total student contact hours, including lectures, classes, tutorials, flexible learning and laboratory and field sessions will vary in different semesters.

Students choose units of study from five Study Groups:

- **Core Multimedia Studies**
- **Further Multimedia Studies**
- **Co-major Studies Group A**
- **Co-major Studies Group B**
- **E elective Studies**

According to the following rules, students complete at least 300 credit points made up of:

- 87.5 credit points from Core Multimedia Studies,
- 62.5 credit points from Further Multimedia Studies,
- 50 credit points from Co-major Studies Group A,
- 62.5 credit points from Co-major Studies Group B,
- 12.5 credit points from Elective Studies, plus
- 25 credit points from Co-major Studies Group B and/or Elective Studies.

**Careers in the Curriculum (CIC)**

In addition to the above, students must complete a compulsory unit of study HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative approach designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

**Final Year Experience - Major Projects**

As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

**Units of Study**

**Core Multimedia Studies**

| HDM1001 Design for Multimedia 1 |
| HET113 The Internet and World Wide Web 1 |
| HET213 User Experience Design |
| HET215 Multimedia Applications |
| HET401 Multimedia Project 1 |
| HET402 Multimedia Project 2 |
| HET407 Multimedia Technology |

**Further Multimedia Studies**

| HDM1002 Design for Multimedia 2 |
| HET123 The Internet and World Wide Web 2 |
| HET208 3D Animation and Special Effects |
| HET222 Digital Video and Audio |
| HET241 Media Theory, DVD and Compositing |
| HET325 Principles of Game Design |
| HET332 Interactive Multimedia |

**Co-major Studies Group A**

| HALM104 Media Literature Film: Texts and Contexts |
| HAM105 The Media in Australia |

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**Recommended Study Sequence**

**Semester 1**
- HDM101: Design for Multimedia 1
- HET113: The Internet and World Wide Web 1
- HALM104: Media Literature Film: Texts and Contexts

Choose 1 of:
- HAH103: Critical Thinking
- HAL103: Writing Fiction

**Semester 2**
- HDM102: Design for Multimedia 2
- HAM105: The Media in Australia
- HALM207: Network Cultures

Choose 1 of:
- HET123: The Internet and World Wide Web 2
- HET222: Digital Video and Audio
- HET324: Media Theory, DVD and Compositing

**Semester 3**
- HET215: Multimedia Applications
- HAM211: New Media: The Telecommunications Revolution
- HAM313: Radio Production and Criticism A

Choose 1 of:
- HET113: The Internet and World Wide Web 2
- HET208: 3D Animation and Special Effects
- HET222: Digital Video and Audio

**Semester 4**
- HET213: User Experience Design
- HALM020: Journalism: Processes and Practices
- HASM201: eSociety: Sociology of the Electronic Age

Choose 1 of:
- HET123: The Internet and World Wide Web 2
- HET222: Digital Video and Audio
- HET332: Interactive Multimedia

**Optional IBL year**
- HSW055: Industry-Based Learning

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(ACPSEM)

• The Biotechnology major may allow students to apply for membership of Australian Society for Biochemistry and Molecular Biology (ASMB)

Course Duration
Three years full-time

Course Structure
The program operates under the student workload model based on 100 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four units of study will generally be taken each semester. Total student contact hours, including lectures, classes, tutorials and laboratory sessions, will normally be between 15-20 hours per week during the academic semesters.

According to the following rules, students must complete at least 200 credit points made up of:
• One major from the list of approved Science majors (see below).
• And one of:
  • An additional Science major (with up to 50 credit points common with initial major), or
  • A co-major from the list of approved co-majors provided below (with up to 50 credit points common with major), or
  • A minor from the list of approved minors provided below.
And in order to meet degree credit point requirements students may take:
• Additional minors, and
• Up to 37.5 credit points of electives chosen from any discipline

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Electives Plus Sequences
Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their discipline.

Students undertaking this course can choose to study Electives Plus sequences which will be considered as meeting the requirements of a minor:
• Design: Process and Strategy
• Effective Communication
• Enterprising Marketing
• Establishing and Running a Business
• Information Orientation and Knowledge Management
• Language Practice and Culture
• Multimedia & Web Development
• Sustainability
• The Networked Economy
• Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 103 for Electives Plus sequence details.

Majors/Minors & Specialisations
A major comprises between 175 to 225 credit points of studies (typically 14 to 18 units of study) relevant to the particular discipline or field of study. A major should include all the requisite foundation studies and at least 12.5 credit points of final year projects. A maximum of 25 credit points of relevant electives are permitted within the major. Majors include:
• Biomedical Science
• Biotechnology
• Chemistry
• Computer Science
• Electronics
• Environmental Sustainability
• Mechatronics
• Photonics
• Psychology

Majors:
• Astrophysics and Supercomputing
• Biochemistry
• Biomedical Science
• Chemistry
• Computer Science
• Electronics
• Environmental Sustainability
• Food Science
• Information Systems
• Mechatronics
• Neuroscience
• Philosophy
• Photonics
• Politics
• Sociology
• Technology Management

Minors:
• Astrophysics
• Biochemistry
• Biophysics
• Chemistry
• Computer Science
• Electronics
• Environmental Sustainability
• Food Science
• Information Systems
• Mathematics
• Mechatronics
• Media and Communications
• Multimedia
• Network Technology
• Neuroscience
• Philosophy
• Photonics
• Physics
• Principles of Game Design
• Psychology
• Research and Development
• Sociology
• Statistics

Recommended Combinations:
• Biomedical Science Major / Biochemistry Co-Major
• Biomedical Science Major / Chemistry Co-Major
• Biotechnology Major / Computer Science Co-Major
• Biotechnology Major / Environmental Sustainability Co-Major
• Chemistry Major / Computer Science Co-Major
• Chemistry Major / Photonics Co-Major
• Computer Science Major / Astrophysics and Supercomputing Co-Major
• Computer Science Major / Information Systems Co-Major
• Electronics Major / Neuroscience
• Electronics Major / Technology Management Co-Major
• Environmental Sustainability Major / Technology Management Co-Major
Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and a study score of 25 Mathematical Methods (either) or Specialist Mathematics, and in one of Biology, Chemistry, Physics, Psychology Software Development or Specialist Mathematics.

2007 Round 1 Clear-In ENTER: new course for 2008

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34371 (CSP), 34372 (Fee), 34373 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
Applicants who believe they will receive an ENTER of at least 95.50, have an opportunity to undertake this course through the Vice-Chancellor’s Scholarship Program. For further information visit the website at: www.swin.edu.au/scholarships

Science Specialisations

Astrophysics - Minor
This minor comprises 75 credit points (6 units of study) from the co-major in Astrophysics and Supercomputing.

HMS111 Engineering Mathematics 1
HMS112 Engineering Mathematics 2
HIT124 Energy and Motion
HIT1501 Discovering the Universe
HIT2502 From Stars To Black Holes
HIT2503 Galaxies and Cosmology

Astrophysics and Supercomputing - Co-Major
The co-major covers the fundamental concepts and 'big questions' of modern astronomy, in order to equip students with a good overall understanding and general knowledge about modern astronomy.

A co-major in Astrophysics & Supercomputing will help prepare students for work in related fields such as computing, remote-sensing, industrial research, museum and planetarium work, and telecommunications. Some may choose to pursue further studies in areas such as journalism, engineering and education.

This co-major comprises 112.5 credit points of studies (9 units of study).

HMS111 Engineering Mathematics 1
HMS112 Engineering Mathematics 2
HIT124 Energy and Motion
HIT2080 Introduction to Programming
HIT2502 From Stars To Black Holes
HIT3004 Astrophysical Supercomputing 1
HIT3005 Astrophysical Supercomputing 2
HIT2503 Galaxies and Cosmology

Biochemistry - Co-Major/Minor
The co-major comprises 125 credit points (10 units of study) and the minor comprises 75 credit points (6 units of study).

Co-Major
HES1510 Chemistry 1
HES1610 Concepts of Biology
HES1616 Concepts of Biotechnology
HES1525 Chemistry 2

Majors

HES2611 Introduction to Biochemistry
HES2631 The Microbial World
HES2626 Biochemistry of Genes and Proteins
HES4521 Advanced Biochemistry
HES4541 Practical Biochemistry
HES4542 Biotechnology

Minor
HES1510 Chemistry 1
HES1610 Concepts of Biology
HES1616 Concepts of Biotechnology
HES1525 Chemistry 2
HES2621 Introduction to Biochemistry
HES2626 Biochemistry of Genes and Proteins

* May be replaced by HES1490 Introduction to Chemistry for students without Year 12 Chemistry

Biomedical Science - Major/Co-Major
The biomedical major covers specialist theoretical and practical study of the functional aspects of the human body as well as the modern instrumentation and technology required in clinical care and other monitoring environments.

Students will be prepared for employment in the health care sector (including intensive care support, medical technologist positions in cardiovascular, respiratory and neurological medicine, and biomedical engineering), medical equipment companies and the sports medicine area.

The major comprises 200 credit points (16 units of study) and the co-major comprises 125 credit points (10 units of study).

Major
HET102 Introductory Physiology
HET124 Energy and Motion
HET128 Physics 2
HET133 Human Physiology
HET182 Electronic Systems
HET210 Electronics
HET220 Cardiovascular Biophysics
HET240 Cellular Biophysics
HET260 Racial and Respiratory Biophysics
HET408 Biomedical Imaging and Emerging Technologies
HET419 Physiological Modelling
HMS111 Engineering Mathematics 1
HMS112 Engineering Mathematics 2
HMS213 Engineering Mathematics 3B
HET422 Biomedical Project
HET426 Instrumentation Project

Co-Major
HET102 Introductory Physiology
HET133 Human Physiology
HET226 Sensory Systems
HMS111 Engineering Mathematics 1
HMS112 Engineering Mathematics 2
HET182 Electronic Systems
HET210 Electronics
HET240 Cellular Biophysics
HET219 Neurological Monitoring
HET227 Neurophysiology

Biophysics - Minor
This minor comprises 75 credit points (6 units of study).

HET102 Introductory Physiology
HET133 Human Physiology
HET124 Energy and Motion
### Biotechnology - Major

The biotechnology major examines how chemical, biological, microbiological and biochemical processes impact on once living organisms, and how these organisms can be used in today’s technological world. Biotechnology is a rapidly developing, globally focused industry in Australia. Graduates will have the opportunity to play leading roles in their field and will work in areas related to the medical, health, agricultural, forensic, biochemical and environmental industries.

This major comprises 200 credit points (16 units of study).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HES1610</td>
<td>Chemistry 1*</td>
</tr>
<tr>
<td>HES1626</td>
<td>Professional Skills for Biotechnologists</td>
</tr>
<tr>
<td>HES1616</td>
<td>Concepts of Biotechnology</td>
</tr>
<tr>
<td>HES1525</td>
<td>Chemistry 2</td>
</tr>
<tr>
<td>HES2621</td>
<td>Introduction to Biochemistry</td>
</tr>
<tr>
<td>HES2631</td>
<td>The Microbial World</td>
</tr>
<tr>
<td>HES2626</td>
<td>Biochemistry of Genes and Proteins</td>
</tr>
<tr>
<td>HES2636</td>
<td>Microbes in the Environment</td>
</tr>
<tr>
<td>HES4621</td>
<td>Advanced Biochemistry</td>
</tr>
<tr>
<td>HES4641</td>
<td>Practical Biochemistry</td>
</tr>
<tr>
<td>HES4626</td>
<td>Biotechnology</td>
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<tr>
<td>HES4646</td>
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</table>

Two electives chosen from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HES1555</td>
<td>Consumer Science</td>
</tr>
<tr>
<td>HAS303</td>
<td>Genetics and Society</td>
</tr>
<tr>
<td>HES2705</td>
<td>Water Science</td>
</tr>
<tr>
<td>HES4628</td>
<td>Environmental Biotechnology</td>
</tr>
</tbody>
</table>

** May be replaced by HES1490 Introduction to Chemistry for students without Year 12 Chemistry

** May be replaced by HES111 Engineering Mathematics 1 for students wanting to study more advanced mathematics

### Chemistry - Major/Co-Major/Minor

The chemistry major emphasises the fundamental underpinning science behind everyday life. As both a discipline and a subject, chemistry is an enabling science which gives a solid foundation to fields such as waste treatment, industrial processing, environmental science, forensic science and chemical synthesis.

Chemistry graduates are amongst the most employable and ultimately successful university graduates. The course enables laboratory work, problem solving and research.

The major comprises 175 credit points (14 units of study), the co-major comprises 100 credit points (8 units of study) and the minor comprises 62.5 credit points (5 units of study).

#### Major

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
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<td>HES101</td>
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<td>Consumer Science</td>
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<tr>
<td>HES2621</td>
<td>Introduction to Statistics</td>
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<tr>
<td>HES2510</td>
<td>Investigative Chemistry Prac 1</td>
</tr>
<tr>
<td>HES2540</td>
<td>Forensic and Analytical Science</td>
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<tr>
<td>HES2515</td>
<td>Investigative Chemistry Prac 2</td>
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<tr>
<td>HES2520</td>
<td>Chemistry 3</td>
</tr>
<tr>
<td>HES4520</td>
<td>Advanced Chemistry 1</td>
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<tr>
<td>HES4510</td>
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</table>

#### Co-Major

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>HES1525</td>
<td>Chemistry 2</td>
</tr>
<tr>
<td>HES1555</td>
<td>Consumer Science</td>
</tr>
<tr>
<td>HES2541</td>
<td>Analytical Chemistry</td>
</tr>
<tr>
<td>HES2526</td>
<td>Organic Chemistry</td>
</tr>
<tr>
<td>HES4520</td>
<td>Advanced Chemistry 1</td>
</tr>
<tr>
<td>HES4510</td>
<td>Investigative Chemistry Prac 3</td>
</tr>
</tbody>
</table>

#### Minor

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HES1510</td>
<td>Chemistry 1*</td>
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<tr>
<td>HES1525</td>
<td>Chemistry 2</td>
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<tr>
<td>HES1555</td>
<td>Consumer Science</td>
</tr>
<tr>
<td>HES2541</td>
<td>Analytical Chemistry</td>
</tr>
<tr>
<td>HES2526</td>
<td>Organic Chemistry</td>
</tr>
</tbody>
</table>

* May be replaced by HES1490 Introduction to Chemistry for students without Year 12 Chemistry

** May be replaced by HES111 Engineering Mathematics 1 for students wanting to study more advanced mathematics

### Computer Science - Major/Co-Major/Minor

The Computer Science major combines studies in general computing such as software development, databases, data communications and software engineering with specialist studies in scientific computing. The program takes a practical approach with an emphasis on problem solving.

The major comprises 200 credit points (16 units of study), the co-major comprises 100 credit points (8 units of study) and the minor comprises 50 credit points (4 units of study).

#### Major

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>HIT2080</td>
<td>Introduction to Programming</td>
</tr>
<tr>
<td>HIT3181</td>
<td>Technical Software Development</td>
</tr>
<tr>
<td>HIT3172</td>
<td>Object-Oriented Programming in C++</td>
</tr>
<tr>
<td>HIT3303</td>
<td>Data Structures and Patterns</td>
</tr>
<tr>
<td>HES111</td>
<td>Engineering Mathematics 1</td>
</tr>
<tr>
<td>HES112</td>
<td>Engineering Mathematics 2</td>
</tr>
<tr>
<td>HIT2313</td>
<td>Computer Systems</td>
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<tr>
<td>HIT1307</td>
<td>Internet Technologies</td>
</tr>
<tr>
<td>HIT1402</td>
<td>Database Analysis and Design</td>
</tr>
<tr>
<td>HIT2306</td>
<td>Software Development Practices</td>
</tr>
<tr>
<td>HIT2120</td>
<td>Data Communications and Security</td>
</tr>
<tr>
<td>HIT3506</td>
<td>Scientific Computing</td>
</tr>
<tr>
<td>ET318</td>
<td>Applied Science Project A</td>
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<tr>
<td>ET319</td>
<td>Applied Science Project B</td>
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Two electives chosen from:

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HIT3002</td>
<td>Introduction to Artificial Intelligence</td>
</tr>
<tr>
<td>HIT3150</td>
<td>Multi-Agent Systems</td>
</tr>
<tr>
<td>HIT3083</td>
<td>Digital Graphics</td>
</tr>
</tbody>
</table>

#### Co-Major

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT2080</td>
<td>Introduction to Programming</td>
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<tr>
<td>HIT2313</td>
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<td>Database Analysis and Design</td>
</tr>
<tr>
<td>HIT2306</td>
<td>Software Development Practices</td>
</tr>
<tr>
<td>HIT2120</td>
<td>Data Communications and Security</td>
</tr>
</tbody>
</table>
Note: HIT1312 Computer and Logic Essentials must also be taken unless HIT1512 Engineering Mathematics 2 is taken elsewhere.

**Electronic - Major/Co-Major/Minor**
The Electronics major builds a foundation of fundamental concepts and principles and extends these ideas to higher-level studies in embedded microcontrollers, integrated circuit design and advanced sensors and actuators. This major study then brings together and extends these theoretical and practical skills in a two-semester final-year capstone team project. Students gain a mix of software and hardware skills that make them highly employable scientists.

The major comprises 175 credit points (14 units of study), the co-major comprises 125 credit points (10 units of study), and the minor comprises 75 credit points (6 units of study).

<table>
<thead>
<tr>
<th><strong>Major</strong></th>
<th><strong>Co-Major</strong></th>
<th><strong>Minor</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT2080</td>
<td>HES1510</td>
<td>HMS111</td>
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<tr>
<td></td>
<td>Co-Major/Minor</td>
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<td>HES1115</td>
<td>Co-Major/Minor</td>
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<td>HES4720</td>
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</table>

**Environmental Sustainability - Major/Co-Major/Minor**
The environmental sustainability major applies the principles of sustainable development to address the causes of environmental hazards. Importantly, understanding the relationship between local, global, social and ecological issues and the responsibility of the different groups in sustainability is a key component of this major, together with developing the scientific skills to address environmental sustainability in the future.

The major comprises 200 credit points (16 units of study), the co-major comprises 100 credit points (8 units of study), and the minor comprises 37.5 credit points (3 units of study).

<table>
<thead>
<tr>
<th><strong>Major</strong></th>
<th><strong>Co-Major</strong></th>
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<tbody>
<tr>
<td>HES1510</td>
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<td>HES1115</td>
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<td>HES2631</td>
<td>HES2636</td>
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<tr>
<td>HES2631</td>
<td>HES2710</td>
<td>HES2715</td>
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<td>HES2715</td>
<td>HES2636</td>
<td>HES4720</td>
</tr>
<tr>
<td>HES2636</td>
<td>Co-Major/Minor</td>
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</tr>
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<td>HES2715</td>
<td>Co-Major/Minor</td>
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<td>HES4720</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Food Science - Co-Major/Minor</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>A co-major comprises 100 credit points (8 units of study) and the minor comprises 75 credit points (6 units of study).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Co-Major</strong></th>
<th><strong>Minor</strong></th>
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<tbody>
<tr>
<td>HES1510</td>
<td>HES1610</td>
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<tr>
<td></td>
<td>Co-Major/Minor</td>
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<td>Co-Major/Minor</td>
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<td>Minor</td>
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</tbody>
</table>

* May be replaced by HES1490 Introduction to Chemistry for students without Year 12 Chemistry.
Information Systems - Co-Major/Minor

The co-major comprises 100 credit points of studies (8 units of study) and the minor comprises between 50 credit points (4 units of study).

Co-Major
HIT1401 Introduction to Business Information Systems
HIT1402 Database Analysis and Design
HIT2405 Requirements Analysis and Modelling
HIT3406 Enterprise Systems
HIT3407 Information Systems Project Management
HIT3409 Process Modelling
HIT3410 Systems Acquisition and Implementation Management
HIT3424 Information Systems Management

Minor
HIT1401 Introduction to Business Information Systems
HIT1402 Database Analysis and Design
HIT2405 Requirements Analysis and Modelling
HIT3406 Enterprise Systems

Mathematics - Minor
This minor comprises 75 credit points (6 units of study).
HMS111 Engineering Mathematics 1
HMS112 Engineering Mathematics 2
HMS213 Engineering Mathematics 3B
HMS214 Engineering Mathematics 4B
HMB111 Quantitative Analysis B
HMS411 Engineering Mathematics 5A

Mechatronics - Major/Co-Major/Minor
The Mechatronics major takes a very ‘hands on’ approach to learning, by developing theoretical and practical skills via year-long team projects in both first and final year. This major develops an understanding of both fundamental concepts/principles and higher-level studies in mechatronics and robotics. Students gain a mix of software and hardware skills that make them highly employable scientists.

The major comprises 175 credit points (14 units of study), the co-major comprises 100 credit points (10 units of study) and the minor comprises 75 credit points (8 units of study).

Major
HES1300 Robotics and Mechatronics Project 1
HET202 Digital Electronics Design
HIT3181 Technical Software Development
HMS111 Engineering Mathematics 1
HES1305 Robotics and Mechatronics Project 2
HET182 Electronic Systems

Co-Major
HES1300 Robotics and Mechatronics Project 1
HET202 Digital Electronics Design
HIT3181 Technical Software Development
HMS111 Engineering Mathematics 1
HES1305 Robotics and Mechatronics Project 2
HET182 Electronic Systems
HMS112 Engineering Mathematics 2
HMS213 Engineering Mathematics 3B
HET228 Electrical Actuators and Sensors
HET222 Embedded Microcontrollers

Minor
HES1300 Robotics and Mechatronics Project 1
HIR505 Robotics in Manufacturing
HMS111 Engineering Mathematics 1
HES1305 Robotics and Mechatronics Project 2
HET182 Electronic Systems
HMS112 Engineering Mathematics 2

Media and Communications - Minor
This minor comprises 75 credit points (6 units of study).
HALM104 Media Literature Film: Texts and Contexts
HAM105 The Media in Australia
HALM202 Journalism: Processes and Practices
HALM207 Network Cultures
HALM315 Network Literacies
HAM313 Radio Production and Criticism A

Multimedia - Minor
This minor comprises 50 credit points (4 units of study).
HET215 Multimedia Applications
HET208 3D Animation and Special Effects
HET222 Digital Video and Audio
HET324 Media Theory, DVD and Compositing

Network Technology - Minor
This minor comprises 50 credit points (4 units of study).
HET104 LAN Principles
HET410 Network Administration
HET424 IP Technologies
HIT3712 Enterprise Networking

Neuroscience - Minor
This minor comprises 75 credit points (6 units of study).
HET102 Introductory Physiology
HET219 Neurological Monitoring
HET226 Sensory Systems
HET227 Neuropsychology
HET231 Perception and Motor Systems
HET239 Higher Cortical Functions

Neuroscience/Psychophysiology - Co-Major
HET102 Introductory Physiology
HET133 Human Physiology
HMA103 Statistics and Research Methods A
HET219 Neurological Monitoring
HET226 Sensory Systems
HET227 Neuropsychology
HET231 Perception and Motor Systems
HET239 Higher Cortical Functions

Philosophy - Co-Major/Minor
The co-major comprises between 100 credit points (8 units of study) and the minor comprises 62.5 credit points (5 units of study).

Co-Major
HAH100 Introduction to Philosophy
HAH101 History of Ideas
HAH219/HAH310 Philosophy, Media, Culture
<table>
<thead>
<tr>
<th>Major</th>
<th>Co-Major/Minor/Major</th>
<th>Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAH219/HAH319</td>
<td>Philosophical Psychology</td>
<td>HAH100 Introduction to Philosophy</td>
</tr>
<tr>
<td>HAH222/HAH122</td>
<td>Practical Ethics</td>
<td>HAH103 Critical Thinking</td>
</tr>
<tr>
<td>HAH223/HAH323</td>
<td>Environmental Philosophy</td>
<td>HAH222/HAH122 Practical Ethics</td>
</tr>
<tr>
<td>HAH224/HAH324</td>
<td>Natural Philosophy and the Sciences</td>
<td>HAH223/HAH323 Environmental Philosophy</td>
</tr>
<tr>
<td>HAH226/HAH326</td>
<td>Knowledge, Reason, and Society: Contemporary issues and Perspectives</td>
<td>HAH224/HAH324 Natural Philosophy and the Sciences</td>
</tr>
</tbody>
</table>

**Photonics - Major/Co-Major/Minor**

The Photonics major provides a strong foundation in optics and photonics (including lasers, opto-electronics and fibre optics). The photonics major is resourced with state-of-the-art equipment, and teachers who are international experts in photonics research. Students gain a broad spectrum of theoretical and practical skills which is further developed during a two-semester final-year capstone team project.

Students gain the necessary skills to make them highly employable scientists in the emerging international photonics industry.

The major comprises between 175 credit points (typically 14 units of study), the co-major comprises 125 credit points (10 units of study) and the minor comprises 75 credit points (6 units of study).

**Photonics - Major**

- HET124 Energy and Motion
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HET103 Photonics 1
- HMS213 Engineering Mathematics 3B
- HET128 Physics 2
- HMS214 Engineering Mathematics 4B
- HET203 Photonics 2
- HET417 Photons and Fibre Optics
- HET205 Introduction to Modern Optics
- HET206 Modern Physics
- HET209 Fibre Optics Communication & Optical Instrumentation
- HET318 Applied Science Project A
- HET319 Applied Science Project B

**Photonics - Co-Major**

- HET124 Energy and Motion
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HET103 Photonics 1
- HMS213 Engineering Mathematics 3B
- HET128 Physics 2
- HMS214 Engineering Mathematics 4B
- HET203 Photonics 2
- HET417 Photons and Fibre Optics
- HET205 Introduction to Modern Optics

**Physics - Minor**

This minor comprises 75 credit points (6 units of study).

- HIMS111 Engineering Mathematics 1
- HET182 Electronic Systems
- HIMS112 Engineering Mathematics 2
- HET124 Energy and Motion
- HET128 Physics 2
- HET206 Modern Physics

**Politics - Co-Major**

This co-major comprises 100 credit points (8 units of study).

- HAP100 Australian Politics
- HAP117 International Politics
- HAP221/HAP321 Modern Australia
- HAP234/HAP334 War and Peace in a Globalized World
- HAP233/HAP333 Comparative Asian Politics
- HAP231/HAP331 Dictators, Democrats and Dynasties: Comparative Politics
- HASP200/HASP300 Public Policy in Australia
- HASP201/HASP301 Work in Australia

**Principles of Game Design - Minor**

This minor comprises 50 credit points (4 units of study).

- HET120 Interactive Games Structures
- HET217 Business of Games
- HET208 3D Animation and Special Effects
- HET325 Principles of Game Design

**Psychology - Major/Minor**

The psychology major provides a scientific understanding of human behaviour with specialised study in social and personality psychology, psychological assessment, abnormal psychology and research methods.

Research, citizenship, social policy and human services management

The major comprises between 175 credit points (14 units of study) and the minor comprises 75 credit points (6 units of study).

**Psychology - Major**

- HAY100 Psychology 100
- HAY101 Psychology 101
- HMA103 Statistics and Research Methods A
- HAY205 Cognition and Human Performance
- HAY206 Developmental Psychology
- HMA278 Design and Measurement 2
- HMA279 Design and Measurement 3
- HAY307 Social Psychology
- HAY308 The Psychology of Personality
- HAY309 Psychological Measurement
- HAY321 Abnormal Psychology
- HAY323 Psychology Project A
- HAY325 Psychology Project B

One elective chosen from:

- HAH103 Critical Thinking
- HAS100 Sociology 1A (Introductory Sociology)
- HAH219/HAH319 Philosophical Psychology
- HASP307 Qualitative Research Methods

**Psychology - Minor**

- HAY100 Psychology 100
- HAY101 Psychology 101
- HMA103 Statistics and Research Methods A
- HMA278 Design and Measurement 2
- HAY206 Developmental Psychology
- HAY321 Abnormal Psychology
## Research and Development - Minor

This minor comprises between 50 credit points (4 units of study).

- HET101 Research and Development Project 1
- HET201 Research and Development Project 2
- HET305 Research and Development Project 3
- HET405 Research & Development Placement (Project 4)

## Sociology - Co-Major/Minor

The co-major comprises between 100 credit points (8 units of study) and the minor comprises between 75 credit points (6 units of study).

**Co-Major**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAS100</td>
<td>Sociology 1A (Introductory Sociology)</td>
</tr>
<tr>
<td>HAS101</td>
<td>Sociology 1B (Social Institutions and Social Change)</td>
</tr>
<tr>
<td>HAS296</td>
<td>The Family, Sex and Society</td>
</tr>
<tr>
<td>HASM201</td>
<td>eSociety: Sociology of the Electronic Age</td>
</tr>
<tr>
<td>HASP202</td>
<td>Social Theory</td>
</tr>
<tr>
<td>HAS303</td>
<td>Genetics and Society</td>
</tr>
<tr>
<td>HAS316</td>
<td>Migration and Ethnicity</td>
</tr>
<tr>
<td>HASP309</td>
<td>Social Research Design: Principles and Methods</td>
</tr>
</tbody>
</table>

**Minor**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Name</th>
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<tr>
<td>HAS100</td>
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<td>HAS316</td>
<td>Migration and Ethnicity</td>
</tr>
<tr>
<td>HASP307</td>
<td>Qualitative Research Methods</td>
</tr>
<tr>
<td>HAS303</td>
<td>Genetics and Society</td>
</tr>
</tbody>
</table>

## Statistics - Minor

This minor comprises 50 credit points (4 units of study).

- HMA103 Statistics and Research Methods A
- HMA278 Design and Measurement 2
- HMA279 Design and Measurement 3
- HASP309 Social Research Design: Principles and Methods

## Technology Management - Co-Major

This co-major comprises 125 credit points (10 units of study).

- HBSG200 New Venture Development and Management
- HBC110 Accounting for Success
- HBSG300 Managing and Developing a Small Business
- HBM110 The Marketing Concept
- HIT1401 Introduction to Business Information Systems
- HBH110 Organisation and Management
- HBH222 Organisation Design & Technology
- HBP228 Manufacturing Management
- HBP336 Quality Management in Manufacturing
- HBP337 Managing Technology and Innovation

## Bachelor of Science (Biochemistry and Chemistry)

**[BS2527]**

Biochemistry is the study of molecules of life, their structure and role(s) in the processes of animals, plants and micro-organisms. It has application in all areas of life where an understanding of the molecular basis of biology is important - from nutrition and agriculture through to medicine and physiology.

The course especially emphasises practical skills that are important to a range of medical, industrial, environmental and research applications. These skills include computing, team-work, problem solving and communication skills, as well as the traditional skills of an analytical biochemist, microbiologist or chemist. Projects which link students directly to industry and/or leading-edge research are also a feature of this course.

### Campus

Hawthorn

### Career Opportunities

Biochemists work in many areas, including medical research, environmental research, clinical biochemistry, biotechnology, industrial chemistry, microbiology, food production, agricultural biochemistry, beverage production, fermentation technology, pharmaceutical production, biomolecular research, protein engineering, wine science, waste treatment, biodiesel and biomediation.

Some graduates move into sales, marketing, business analysis and management associated with the biochemical and chemical industries.

### Professional Recognition

The Royal Australian Chemical Institute has accredited this course for the purposes of professional recognition. Graduates are also eligible for membership of:

- Australian Society for Biochemistry and Molecular Biology (ASBMB)
- Australian Society for Microbiology (ASM)
- Australian Biotechnology Association (ABA)

### Course Duration

Three years full-time plus an optional and additional year of Industry-Based Learning (IBL).

### Course Structure

This course will operate under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four units of study, each worth 12.5 credit points, will generally be taken each semester. The typical student's average weekly workload during semester is therefore expected to be fifty hours. Total student contact hours, including lecturers, classes, tutorials, flexible learning and laboratory and field sessions will vary in different semesters.

### Careers in the Curriculum (CIC)

In addition to the above, students must complete a compulsory unit HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

### Final Year Experience - Major Projects

As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

### Electives Plus Sequences

Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline. Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Enterprising Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.
Units of Study

Stage 1
Semester 1
HES1510 Chemistry 1
HMS101 Foundation Mathematics *
HES1610 Concepts of Biology
HES1626 Professional Skills for Biotechnologists

Semester 2
HES1525 Chemistry 2
HES1555 Consumer Science
HES1616 Concepts of Biotechnology
HMS102 Introduction to Statistics

Stage 2
Semester 1
HES2621 Introduction to Biochemistry
HES2631 The Microbial World
Elective 1
Elective 2

Semester 2
HES2626 Biochemistry of Genes and Proteins
HES2636 Microbes in the Environment
Elective 3
Elective 4

Stage 3
Semester 1
HES4520 Advanced Chemistry 1
HES4510 Investigative Chemistry Prac 3
HES4621 Advanced Biochemistry
HES4641 Practical Biochemistry

Semester 2
HES4626 Biotechnology
HES4646 Biotechnology Research Project
Elective 5
Elective 6

* May be replaced by HMS111 Engineering Mathematics 1 if student intends to continue studying mathematics at a higher level

IBL, if undertaken, is generally taken between Stages 2 and 3 and consists of:
HSM050 Industry-Based Learning and/or
HSM055 Industry-Based Learning

This optional Industry-Based Learning program is not available to international students.

Electives 1 to 4
Choose one of the following:
HES2540 Forensic and Analytical Science, OR
HES2541 Analytical Chemistry
and one of the following:
HES2520 Chemistry 3, OR
HES2526 Organic Chemistry
and two of the following:
HES2510 Investigative Chemistry Prac 1
HES2515 Investigative Chemistry Prac 2
HBSG200 New Venture Development and Management
HES4700 Research Skills

Electives Plus Sequence 1 (see above)
Electives Plus Sequence 2 (see above)

Note: credit cannot be obtained for both HES2541 and HES2510. Nor can credit be gained for both HES2526 and HES2515.

Elective 5
Choose between:
HES4525 Advanced Chemistry 2

HES4516 Research Project

Elective 6
This is a free elective. Recommended units of study include any previously non-selected elective and:
HES4525 Advanced Chemistry 2
HES4516 Research Project
HES4628 Environmental Biotechnology
HBSG200 New Venture Development and Management

Electives Plus Sequence 3 (see above)

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2007 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and a study score of 20 in one of Biology, Chemistry, Physics or Psychology and in one of Mathematics (any).

All Non-Year 12 students (NONY12) should refer to the VTAC website at: www.vtac.edu.au for further information.

2007 Round 1 Cut-Off ENTER: 82.00 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 34241 (CSP), 34242 (Fee), 34243 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Applications who believe they will receive an ENTER of at least 65.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swin.edu.au/scholarships

Bachelor of Science (Biomedical Sciences) [9061]

Biomedical Sciences at Swinburne focuses on understanding the physical aspects of human physiology and the related technologies for clinical care and biomedical monitoring. This course covers specialist theoretical and practical study of the functional aspects of the human body as well as study of the modern instrumentation and technology required in clinical care and other monitoring environments.

Employment prospects in the hospital and healthcare industry remain very strong for graduates from this program.

Aims & Objectives
The Bachelor of Science (Biomedical Sciences) course has the following objectives:

- To develop in students a mastery of a wide spectrum of basic principles underlying biomedical sciences;
- To give students an appropriate introduction to the role of the medical technician, or technologist or researcher in the health community;
- To give students a sound knowledge of anatomy, physiology, the application of physics to biomedical systems, and the appropriate application of monitoring technology in the clinical environment;
- To develop in students a mastery of the application of physics and mathematical principles to the interpretation and study of human physiological processes;
- To develop an understanding of human pathophysiology and associated clinical techniques for identifying them;
- To develop in students a thorough understanding of the appropriate technology, instrumentation and techniques, and competence in their application, so that students are able to comprehend and analyse problems and obtain satisfactory design solutions which, where appropriate, show originality and resourcefulness;
- To introduce students to the skills necessary for working in a clinical environment as an effective team member;
- To develop in students an understanding of clinical evaluation and monitoring to assist the medical process;
- To develop students' communication skills so that they can present their ideas clearly by verbal, written and graphical means;
- To prepare students for the changing workplace and changing societal context by developing their life-long learning skills and flexibility of mind, and
- To integrate the formal course of study with an optional one year period of
Employment in the health care sector, medical equipment companies and sports medicine area. Hospital careers include intensive care support, medical technologist positions in cardiovascular, respiratory and neurological medicine, and biomedical engineering.

Professional Recognition
Graduates are eligible to apply for graduate membership of the Australasian College of Physical Scientists and Engineers in Medicine.

Course Duration
Three years full-time. An optional and additional year of Industry-Based Learning (IBL) is also available.

Course Structure
This course will operate under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four units of study, each worth 12.5 credit points, will generally be taken each semester. The typical student's average weekly workload during semester is therefore expected to be fifty hours. Total student contact hours, including lectures, classes, tutorials, flexible learning and laboratory and field sessions will vary in different semesters.

At the end of second year, students with sufficiently high grades will have the opportunity to transfer into the Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems) double degree program. Later year transfers will only be possible if students have selected appropriate electives during their studies.

Students choose units of study from five Study Groups:
- Biomedical Sciences (BMS) Core Studies
- First Year Elective Studies
- Biomedical Elective Studies
- Instrumentation/Computing Studies
- Business/Entrepreneurship Studies

According to the following rules, students complete at least 300 credit points made up of:
- Biomedical Sciences (BMS) Core Studies (237.5 credit points).
- 12.5 credit points chosen from First Year Elective Studies (or Electives Plus Sequence #1).
- 12.5 credit points chosen from Business/Entrepreneurship Studies (or Electives Plus Sequence #2).
- 12.5 credit points chosen from Biomedical Elective Studies (or Electives Plus Sequence #3), and a further
- 25 credit points chosen from Instrumentation/Computing Studies.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Electives Plus Sequences
Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
- Design: Process and Strategy
- Effective Communication
- Enterprising Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Units of Study

Biomedial Sciences (BMS) Core Studies (all 12.5 credit points)
- HET102 Introductory Physiology
- HET124 Energy and Motion
- HET128 Physics 2
- HET133 Human Physiology
- HET182 Electronic Systems
- HET210 Electronics
- HET226 Sensory Systems
- HET227 Neurophysiology
- HET230 Cardiovascular Biophysics
- HET235 Biomedical Electronics
- HET240 Cellular Biophysics
- HET260 Renal and Respiratory Biophysics
- HET408 Biomedical Imaging and Emerging Technologies
- HET419 Physiological Modelling
- HET426 Instrumentation Project
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HMS213 Engineering Mathematics 3B
- HT2080 Introduction to Programming

First Year Elective Studies (all 12.5 credit points)
- HAE103 Critical Thinking
- HES151 Chemistry 1
- HMA103 Statistics and Research Methods A

Biomedical Elective Studies (all 12.5 credit points)
- HET219 Neurological Monitoring
- HET527 Sleep and Attention
- HMA278 Design and Measurement 2

Instrumentation/Computing Studies (all 12.5 credit points)
- HET103 Photonics 1
- HET214 Circuits and Electronics 1
- HET312 Control and Automation
- HET329 Digital Signal and Image Processing
- HET417 Photonics and Fibre Optics
- HET425 Nucleonics and Spectroscopy
- HIT3181 Technical Software Development
- HIT3138 Intelligent Systems
- HMS214 Engineering Mathematics 4B

Business/Entrepreneurship Studies (all 12.5 credit points)
- HBSG200 New Venture Development and Management
- HRES3380 Engineering Management 1
- HRES3380 Engineering Management 2
Bachelor of Science (Biotechnology) [ESB057]

The study of biotechnology provides the understanding, and the practical skills, behind the use of biologically derived material for a multitude of applications. Such material includes microorganisms (bacteria, yeast, etc) and materials derived from them and other biological sources (enzymes, protein, DNA, etc). Applications include medicine, health, agriculture, consumer products, wine, food, pharmaceuticals, the environment and biologically derived new materials.

This course equips graduates for careers in biotechnology. It emphasises the fundamental sciences which underpin biotechnology; chemistry, biochemistry, microbiology, statistics whilst developing applications of biotechnology to areas such as business, ethics, and environmental science. The course provides flexible options that allow students within the course to major in biotechnology (biochemistry) with a major sequence in one of chemistry, environmental science, computer science, business, or media and communications. Projects which link students directly to industry and/or leading-edge research are a feature of this course, giving it a practical hands-on approach.

Aims & Objectives

The aim of the course is to prepare students for scientific careers in biotechnology. The course is designed to develop:

- Mastery of the basic scientific principles that underpin biotechnology.
- A sound and practical knowledge of laboratory techniques and practices through which biotechnological discoveries are made.
- An appreciation of the social context in which scientific work is undertaken and in which scientific knowledge is applied.
- An appreciation of the legislation that regulates scientific activities, and particularly those that relate to biotechnology.
- Advanced communication and interpersonal skills, both verbal and written.
- An appreciation of the moral, ethical and social elements essential to a satisfying personal philosophy and a sound professional attitude.
- Skills in self education, evaluation of new information and encouragement in flexibility of thought, to prepare students for a world of accelerating technological change.

Campus

Hawthorn

Career Opportunities

This course equips graduates for careers in biotechnology related to the medical, health, food and beverage, wine, agricultural, chemical and environmental industries. It also provides Pathways into honours, masters and PhD degrees.

Professional Recognition

Graduates may apply for membership of the following professional societies:

- Australian Biotechnology Association
- The Australian Society for Biochemistry and Molecular Biology
- Australian Society for Microbiology

This course is also expected to meet the accreditation requirements of the Royal Australian Chemical Institute, especially if chemistry units of study are selected in the elective streams.

Course Duration

Three years full-time plus an optional and additional year of Industry-Based Learning (IBL).

Course Structure

The program involves four equally-weighted units of study per semester over three years, plus one optional year of full-time, paid, Industry-Based Learning (normally undertaken after the fourth semester). This optional Industry-Based Learning program is not available to international students. Practical laboratory work is undertaken throughout the course. A research project is undertaken in final year.

The normal study mode is full-time with the courses being completed in the periods indicated. However, subject to student demand and the availability of staff, the academic component of the course may be accelerated in calendar time by undertaking Summer Semester studies.

Students may apply to transfer from the single degree to one of the double degrees at any time during their course subject to satisfactory performance. Transfer after the first year may involve additional studies, and therefore a longer time period, to complete the requirements of the double degree.

Core units of study in the BSc (Biotechnology) degree are:

Recommended Study Sequence

Semester 1

- HET102 Introductory Physiology
- HET124 Energy and Motion
- HMS111 Engineering Mathematics 1

First Year Elective Studies (choose one) or Electives Plus Sequence #1 (see above)

Semester 2

- HET133 Human Physiology
- HET162 Electronic Systems
- HMS112 Engineering Mathematics 2
- HIT2080 Introduction to Programming

Semester 3

- HET128 Physics 2
- HET210 Electronics
- HET240 Cellular Biophysics
- HMS213 Engineering Mathematics 3B

Semester 4

- HET220 Cardiovascular Biophysics
- HET235 Microbiological Instrumentation
- HET260 Renal and Respiratory Biophysics

Business/Entrepreneurship Studies (choose one) or Electives Plus Sequence #2 (see above)

Optional IBL year

HSW050 Industry-Based Learning
HSW055 Industry-Based Learning

Semester 5

HET227 Neurophysiology
HET408 Biomedical Imaging and Emerging Technologies

Instrumentation/Computing Studies (choose one)

Biomedical Elective Studies (choose one) or Electives Plus Sequence #3 (see above)

Semester 6

HET226 Sensory Systems
HET419 Physiological Modelling
HET426 Instrumentation Project

Instrumentation/Computing Studies (choose one)

Notes:

- In addition to the above, students must complete a compulsory unit of study HAC0001 Careers in the Curriculum to be awarded the degree.
- The optional Industry-Based Learning (IBL) program is not available to international students.

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 34681 (CSP), 34682 (Fee) 34683 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor’s Scholarship Program. For further information visit the website at: www.swin.edu.au/scholarships
Student may choose a specialisation to complement the above biotechnology units of study, and this specialisation should involve a set of units of study agreed upon by the course convenor (currently Assoc Prof Ian Harding). Students should choose this specialisation at the beginning of their second year. Two pre-approved specialisations currently exist - a chemical sciences based stream and an environmental based stream. Students choosing either of these streams do not require approval for their course of study. The default stream is the chemical sciences stream.

Careers in the Curriculum (CIC)

Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commenced their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Electives Plus Sequences

Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline. Students undertaking this course can choose to study Electives Plus sequences of up to three units from the following areas:

- Design: Process and Strategy
- Effective Communication
- Entrepreneurship
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Units of Study

Chemical Sciences Stream

Stage 1

Semester 1

- HES1610 Chemistry 1
- HMS101 Foundation Mathematics
- HES1616 Concepts of Biotechnology
- HES1626 Professional Skills for Biotechnologists

Semester 2

- HES1616 Concepts of Biotechnology
- HES1555 Consumer Science
- HES1525 Chemistry 2
- HMS102 Introduction to Statistics

Stage 2

Semester 1

- HES2621 Introduction to Biochemistry
- HES2631 The Microbial World
- Elective 1
- Elective 2

Semester 2

- HES2626 Biochemistry of Genes and Proteins
- HES2636 Microbes in the Environment
- Elective 3
- Elective 4

Stage 3

Semester 1

- HES4520 Advanced Chemistry 1
- HES4521 Advanced Biochemistry
- HES4541 Practical Biochemistry
- Elective 5

Semester 2

- HES4626 Biotechnology
- HES4646 Biotechnology Research Project
- Elective 6
- Elective 7

Note: credit cannot be obtained for both HES2541 and HES2510. Nor can credit be gained for both HES2526 and HES2515.

Electives 1 to 4

Choose one of the following:

- HES2540 Forensic and Analytical Science, or
- HES2541 Analytical Chemistry

and one of the following:

- HES2520 Chemistry 3, or
- HES2528 Organic Chemistry

and two of the following:

- HES2510 Investigative Chemistry Prac 1
- HES2515 Investigative Chemistry Prac 2
- HES2520 New Venture Development and Management
- HES4700 Research Skills

Electives Plus Sequence 1 (see above)

Electives Plus Sequence 2 (see above)

Note: credit cannot be obtained for both HES2541 and HES2510. Nor can credit be gained for both HES2526 and HES2515.

Electives 5 to 7

Choose two units of study from:

- HES4510 Investigative Chemistry Prac 3
- HES4516 Research Project
- HES4525 Advanced Chemistry 2

The third elective is a free elective. Recommended electives include any previously non-selected elective and:

- HES4628 Environmental Biotechnology
Electives Plus Sequence 3 (see above)

Note: In addition to the above, students must complete a compulsory unit HAC0001 Careers in the Curriculum to be awarded the degree.

Environmental Sciences Stream

Stage 1

Semester 1

- HES1510 Chemistry 1*
- HES1610 Concepts of Biology**
- HMS101 Foundation Mathematics ***
- HES1626 Professional Skills for Biotechnologists

Semester 2

- HES1616 Concepts of Biotechnology
- HES1555 Consumer Science
- HES1525 Chemistry 2****
- HMS102 Introduction to Statistics

Stage 2

Semester 1

- HES2621 Introduction to Biochemistry
- HES2631 The Microbial World

Elective 1

Elective 2

Semester 2

- HES2626 Biochemistry of Genes and Proteins
- HES2636 Microbes in the Environment

Elective 3

Elective 4

Stage 3

Semester 1

- HES4621 Advanced Biochemistry
- HES4641 Practical Biochemistry

Elective 5

Elective 6

Semester 2

- HES4626 Biotechnology
- HES4646 Biotechnology Research Project

Elective 7

Elective 8

* May be replaced by HES1490 Introduction to Chemistry for students without Year 12 chemistry.

** May be replaced by an elective for students with Year 12 biology.

*** May be replaced by HMS111 Engineering Mathematics 1 if student intends to continue studying mathematics at a higher level.

**** May be replaced by HES1510 for students who attempt HES1490. In this case, HES1525 must be completed at a later stage as a replacement for one of the electives.

IBL, if undertaken, is usually taken between Stages 2 and 3 and consists of:

- HSW050 Industry-Based Learning and/or
- HSW055 Industry-Based Learning

This optional Industry-Based Learning program is not available to international students.

Electives 1 to 8

Choose one elective from Group A, one elective from Group B, one elective from Group C, one elective from Group A, B or C, and four free electives.

Group A Electives

- HES4516 Research Project
- HES4525 Advanced Chemistry 2

Group B Electives

- HES2540 Forensic and Analytical Science
- HES2510 Investigative Chemistry Prac 1

Group C Electives

- HES2541 Analytical Chemistry
- HES2520 Chemistry 3
- HES2528 Organic Chemistry
- HES2515 Investigative Chemistry Prac 2
- HES2700 Food Science
- HES2705 Water Science

Free Electives

Recommended free electives include any of the units of study from Group A, B, or C as well as:

- HBSG200 New Venture Development and Management
- HES4700 Research Skills

Electives Plus Sequence (see above)

Note: In addition to the above, students must complete a compulsory unit HAC0001 Careers in the Curriculum to be awarded the degree.

Entry Requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2007 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and a study score of 20 in one of Biology, Chemistry, Physics or Psychology and in one of Mathematics (any).

All Non-Year 12 students (NONY12) should refer to the VTAC website at: www.vtac.edu.au for further information.

2007 Round 1 Clearly-In ENTER: 82.00 (CSP), n/a (Fee)

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 34241 (CSP), 34242 (Fee), 34243 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swin.edu.au/scholarships

Bachelor of Science (Psychology and Biochemistry) [2049Y]

This unique course combines a major in psychology with a major in biochemistry, catering for students with an interest in both disciplines. An honours year option is then available in either discipline.

This course covers both psychology and biochemical structures and processes that underpin and influence human behaviour. The link between the two (psychological behaviour and biochemistry) is very strong, but not well understood. Graduates of this course are in a unique position to take advantage of skill sets in both disciplines to inform their chosen career path.

Aims & Objectives

The course aims to:

- Develop in students a mastery of the basic scientific principles underlying biochemistry and psychology.

- Develop a thorough understanding of methods and strategies in biochemistry and psychology, and competence in their application, so that students are able to comprehend and analyse problems and obtain satisfactory solutions which, where appropriate, show originality and resourcefulness.

- Develop students’ communication skills for clear verbal, written and graphic presentation.

- Give students an appropriate introduction to the role of the professional scientist in the community and to explore the social effects of scientific decisions; these studies are aimed at developing moral, social, aesthetic, environmental and ethical concepts essential to a satisfying personal philosophy and a sound professional attitude.
• Prepare students for the changing workplace and the changing social context of science by developing their life-long learning skills and flexibility of mind.

Campus
Hawthorn

Career Opportunities
This course equips graduates for careers in medical and molecular research, neurological research, community health services, clinics and institutions involved in clinical psychology, sports psychology and the assessment and management of persons with neurological problems. You may continue higher degrees in either the biochemistry or psychology fields.

Professional Recognition
The psychology major is accredited by the Australian Psychological Society (APS). Graduates may also apply for membership of the following professional societies:
• Australian Biotechnology Association
• The Australian Society for Biochemistry and Molecular Biology
• Australian Society for Microbiology

Course Duration
Three years full-time plus an optional and additional year of Industry-Based Learning (IBL).

Course Structure
The program involves four equally-weighted units of study per semester over three years, plus one optional year of full-time, paid, Industry-Based Learning (normally undertaken after the fourth semester). Practical laboratory work is undertaken throughout the course. A research project is undertaken in final year.

Note: The optional Industry-Based Learning (IBL) program is not available to international students.

The normal study mode is full-time with the courses being completed in the periods indicated. However, subject to student demand and the availability of staff, the academic component of the course may be accelerated in calendar time by undertaking Summer Semester studies.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Electives Plus Sequences
Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:
• Design: Process and Strategy
• Effective Communication
• Enterprise Marketing
• Establishing and Running a Business
• Information Orientation and Knowledge Management
• Language Practice and Culture
• Multimedia & Web Development
• Sustainability
• The Networked Economy
• Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

Units of Study
Stage 1
Semester 1
HES1510 Chemistry 1
HMA103 Statistics and Research Methods A
HAY100 Psychology 100
HES1610 Concepts of Biology
Semester 2
HES1525 Chemistry 2
HES1555 Consumer Science
HAY101 Psychology 101
HES1616 Concepts of Biotechnology
Stage 2
Semester 1
HAY206 Developmental Psychology
HMA278 Design and Measurement 2
HES2621 Introduction to Biochemistry
Elective 1
Semester 2
HAY205 Cognition and Human Performance
HMA279 Design and Measurement 3
HES2626 Biochemistry of Genes and Proteins
Elective 2
Stage 3
Semester 1
HAY308 The Psychology of Personality
HAY309 Psychological Measurement
HES4621 Advanced Biochemistry
HES4641 Practical Biochemistry
Semester 2
HAY307 Social Psychology
HES4626 Biotechnology
HES4646 Biotechnology Research Project
HAY321 Abnormal Psychology

* May be replaced by HES1490 Introduction to Chemistry for students without Year 12 chemistry
IBL, if undertaken, is generally taken between Stages 2 and 3 and consists of:

HSW050 Industry-Based Learning and/or
HSW055 Industry-Based Learning

Note: The optional Industry-Based Learning (IBL) program is not available to international students.

Electives 1 & 2
Choose two of the following units of study:

HES2636 Microbes in the Environment
HES2576 Organic Chemistry
HES2631 The Microbial World
HES2541 Analytical Chemistry
HBSG250 New Venture Development and Management

Note: In addition to the above, students must complete a compulsory unit HAC0001 Careers in the Curriculum to be awarded the degree.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2007 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and a study score of at least 20 in one of Biology, Chemistry, Physics or Psychology and in one of Mathematics (any).

All Non-Year 12 students (NONY12) should refer to the VTAC website at: www.vtac.edu.au for further information.
Applications
Application
VTAC
Code: 34241 (CSP), 34242 (Fee), 34243 (Int. Fee)
For further information, visit the VTAC website: www.vtac.edu.au

Bachelor of Science (Psychology & Psychophysiology) [Z062Y]
The Bachelor of Science (Psychology & Psychophysiology) is unique to
Swinburne and offers students an undergraduate degree with majors in
psychology and psychophysiology. This course encompasses the fields of
psychology and cognitive and behavioural neurosciences.

The psychology major provides a broad introduction to a range of relevant
studies, with more specialised work in developmental psychology, cognition,
social psychology, personality, design and measurement, psychological
measurement and abnormal psychology.

The psychophysiology major emphasises an understanding of physiological
processes relevant to the study of psychology. Areas of study include
neuropathology, neurophysiology, physiological responses to stress, sleep,
dreaming, memory and cognition, and brain related disorders. Psychophysiology
also looks at the use of biological recording technology relevant to the study
of cognition and behaviour. Swinburne psychology and psychophysiology students
are regarded very highly in the community for their research, psychological and
psychophysiological skills.

Aims & Objectives
The course has the following objectives:

• To develop in students a mastery of a wide spectrum of basic principles
  underlying psychology and psychophysiology;

• To give students an appropriate introduction to the role of the professional
  scientist in the community and to explore the social effects of scientific
decisions;

• To give students a sound knowledge of anatomy and the physiological
  processes relevant to psychology;

• To develop in students the application of psychological and
  physiological principles and theories for the interpretation and study of human
  behavioural and physiological processes;

• To develop in students an understanding of psychological and physiological
  evaluation and monitoring;

• To provide students with the research and analytical skills associated with high
  quality psychological and physiological research;

• To develop in students a thorough understanding of the appropriate
  technology, instrumentation and techniques relevant to cognition and
  behaviour;

• To develop in students competence in the application of appropriate
  monitoring technology in the psychological or clinical environment;

• To introduce students to the skills necessary for working in a clinical
  environment as an effective team member;

• To develop students' communication skills so that they can present their ideas
  clearly by verbal, written and graphical means;

• To prepare students for the changing workplace and changing societal context
  by developing their life-long learning skills and flexibility of mind; and

• To deliver a professionally recognised course of study that will enable
  graduates to join the Australian Psychological Society as graduate members.

Campus
Hawthorn

Career Opportunities
Graduates of the Psychology and Psychophysiology course have a unique blend
of skills. The combination of psychological knowledge with understanding of the
underlying physiological processes associated with stress, intelligence, memory,
personality and psychiatric disorders, for example, gives entry to a wide range of
jobs. Graduates of this course have been employed in neuropsychological areas
of hospitals and in research areas of universities and research institutes within
the public and private sectors, community health services, and clinics, and areas
associated with sports psychology, ergonomics, psychophysiology, and clinical
psychology.

Professional Recognition
The Swinburne psychology major within the Bachelor of Science is accredited by
Australian Psychological Society (APS).

Course Duration
Three years full-time. An optional and additional year of Industry-Based Learning
(IBL) may also be available.

Course Structure
This course will operate under a student workload model based on 100 credit
points for a full-time academic year. One credit point is deemed to be equivalent
to one hour of student work per week over a semester, whether in contact with
staff or in private study. Four units of study, each worth 12.5 credit points, will
generally be taken each semester. The typical student's average weekly
workload during semester is therefore expected to be fifty hours. Total student
contact hours, including lectures, classes, tutorials, flexible learning and
laboratory and field sessions will vary in different semesters. Students who
perform well may progress to an honours program.

For the Psychology/Psychophysiology degree, students complete at least 300
credit points made up of:

• Psychophysiology Core Studies (137.5 credit points)
• Psychology Core Studies (100 credit points)
• Statistical Design & Measurement Core Studies associated with the
  Psychology Core Studies (37.5 credit points)
• Electives (25 credit points)

Although a list of electives are included in the following tables, students can
choose electives from any course offered in the Higher Education Division,
subject to prerequisite and timetable restrictions and Course Panel approval.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of
study HAC2001 Careers in the Curriculum to be awarded the degree. Careers in
the Curriculum (CIC) is an innovative unit designed to assist Swinburne students
to enhance their employability and career prospects. It is usually undertaken in
the second year of your course and is compulsory for all undergraduate students
who commence their course from 2007 onwards. Students studying CIC will not
incur a HECS or fee debt as the cost will be met by the university as part of an
initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming
undergraduates from 2007 will undertake 25 credit points of
professionally-focused final year major projects within their programs of study.
Entry with advanced standing may require alternate study sequences to be
undertaken.

Electives Plus Sequences
Electives plus sequences provide Swinburne degree students with options to
broaden their career skills and strengthen their employability by selecting from
units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of
up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Enterprising Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs
subject to timetabling constraints, with the exception of double degree programs,
specialist double major degrees, and where entry has been approved with
advanced standing. See page 193 for Electives Plus sequence details.

Units of Study
Psychology Core Studies (all 12.5 credit points)

<table>
<thead>
<tr>
<th>HAY100</th>
<th>Psychology 100</th>
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<tbody>
<tr>
<td>HAY101</td>
<td>Psychology 101</td>
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</tbody>
</table>

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HAY205 Cognition and Human Performance
HAY206 Developmental Psychology
HAY307 Social Psychology
HAY308 The Psychology of Personality
HAY309 Psychological Measurement
HAY321 Abnormal Psychology

Psychophysiology Core Studies (all 12.5 credit points)
HET102 Introductory Physiology
HET133 Human Physiology
HET148 Technology and Data Acquisition
HET219 Neurological Monitoring
HET226 Sensory Systems
HET227 Neurophysiology
HET231 Perception and Motor Systems
HET320 Psychophysiological Project
HET527 Sleep and Attention
HET528 Higher Cortical Functions
HET531 Abnormal Psychophysiology

Statistical Design & Measurement Core Studies (all 12.5 credit points)
HMA103 Statistics and Research Methods A
HMA276 Design and Measurement 2
HMA279 Design and Measurement 3

Electives: total of two selected (examples) (all 12.5 credit points)
Students can choose electives from any course offered in the Higher Education Division, subject to prerequisite and timetable restrictions and Course Panel approval.

Electives* (Choose one):
HAI100 Introduction to Philosophy
HAI103 Critical Thinking
HAI105 The Media in Australia
HAI113 Professional Communication Practice
HAP100 Australian Politics
NAS100 Sociology 1A (Introductory Sociology)
NAS101 Sociology 1B (Social Institutions and Social Change)
HBSG200 New Venture Development and Management
HES1510 Chemistry 1
HES1525 Chemistry 2
HES1555 Consumer Science
HET124 Energy and Motion
HIT2080 Introduction to Programming
HMS112 Engineering Mathematics 2

Recommended Study Sequence
Semester 1
HAY100 Psychology 100
HET102 Introductory Physiology
HMA103 Statistics and Research Methods A

Semester 2
HAY101 Psychology 101
HET133 Human Physiology

HET148 Technology and Data Acquisition
Elective* (Choose one):
HAI103 Critical Thinking
HAM105 The Media in Australia
HAS101 Sociology 1B (Social Institutions and Social Change)
HBSG200 New Venture Development and Management
HES1525 Chemistry 2
HES1555 Consumer Science
HMS112 Engineering Mathematics 2

Semester 3
HAY206 Developmental Psychology
HET219 Neurological Monitoring
HET227 Neurophysiology
HMA278 Design and Measurement 2

Semester 4
HAY205 Cognition and Human Performance
HET226 Sensory Systems
HET231 Perception and Motor Systems
HMA279 Design and Measurement 3

Optional IBL year #
HSW050 Industry-Based Learning
HSW055 Industry-Based Learning

Semester 5
HAY308 The Psychology of Personality
HAY309 Psychological Measurement
HET527 Sleep and Attention
HET528 Higher Cortical Functions

HAY321 Abnormal Psychology
HET320 Psychophysiological Project
HET631 Abnormal Psychophysiology

Note: In addition to the above, students must complete a compulsory unit of study HAC0001 Careers in the Curriculum to be awarded the degree.

# IBL will be available only to students commencing their course from 2004. This optional IBL program is not available to international students.

* Electives will be offered subject to a sufficient number of enrolments.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.

2007 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any) and a study score of at least 25 in one of Biology, Chemistry, Mathematics (any), Psychology or Physics.

Selection mode: ENTER and two-stage process with a middle-band of approximately 20%.
All Non-Year 12 students (NONY12) should refer to the VTAC website at: www.vtac.edu.au for further information.

2007 Round 1 Clearly-In ENTER: 76.40 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34141(CSP), 34142 (Fee), 34143 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Bachelor of Social Science [N056]

This course is focused on the scientific study of individuals, groups, and human societies. You will learn how social relationships and institutions shape individuals, and in turn, how they have the capacity to shape these social institutions. Students undertake a major study in Politics, Psychology or Sociology. This may be combined with Australian Studies, Cultural Studies, Electronic Society, Italian Studies, Japanese Studies, Literature, Media Studies, or Philosophy and Cultural Inquiry and Business.
The course is oriented towards the practical application of knowledge of society, such as counselling and policy evaluation. It nurtures the capacity for lifelong independent learning by developing skills of research, analysis, project management and effective communication which prepare students for a wide range of professional employment or for further study. It equips students to work in a wide range of areas, such as counselling, policy analysis and development, research, administration and media.

**Campus**
Hawthorn

**Career Opportunities**
This course equips graduates for careers in areas such as policy analysis and development, research, community development, administration and human services management. With further studies, students with appropriate majors can obtain qualifications to become psychologists, librarians, teachers, personnel officers, social workers or sociologists.

**Professional Recognition**
The three-year undergraduate sequence in Psychology at Swinburne is accredited by the Australian Psychological Society.

**Course Duration**
Three years full-time or equivalent part-time. An optional and additional year of Industry Based Learning (IBL) may also be available.

**Course Structure**
The Bachelor of Social Science is a three year full-time or six year part-time course requiring the successful completion of 24 units of study (300 credit points), of which 19 units of study must be Arts or Social Science units of study. Included in these 19 units of study must be at least one Social Science major (see list below). All units of study in the degree are normally worth 12.5 credit points. A full-time load consists of eight units of study per year (four per semester) and four units of study per year (two per semester) for a part-time load. Students are required to complete a selection of majors, minors and electives.

**Careers in the Curriculum**
In addition to the above, students must complete a compulsory unit of study HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

**Final Year Experience - Major Projects**
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

**Major**
A major is an approved grouping of eight units of study in an area of study. It consists of two Stage 1 units of study (eg: HAH100) and six post-Stage 1 units of study. At least three units of study must be taken at Stage 3 (eg: HAH310). The remaining post-Stage 1 units of study may be taken at Stage 2 or 3. Students wishing to undertake a Psychology major are required to complete ten units of study (refer to the relevant area of study section) plus HMA103 Statistics and Research Methods A.

**Minor**
A minor is an approved grouping of five units of study in an area of study. It normally consists of one unit of study at Stage 1 and four post-Stage 1 units of study, at least one of which is normally at Stage 3. Students wishing to undertake a Japanese or Psychology minor are required to complete six units of study, plus HMA103 Statistics and Research Methods A for psychology (refer to relevant area of study section).

**Elective**
An elective is a unit of study that is not taken as part of a major or minor. Students may include one of the three-subject Electives Plus Sequences as part of their elective choice (see below). Students must choose one of the following options:
Option 1
- Major 1
- Major 2
- 8 Electives

Option 2
- Major 1
- Major 2
- Minor 1
- 3 Electives

Option 3
- Major 1
- Minor 1
- Minor 2
- 6 Electives

Note: At least one major MUST be Social Science specific. In addition students must complete a minimum of 19 Arts and Social Sciences units of study, regardless of which of the above options they choose.

**Course requirements and restrictions**
The following course requirements and restrictions apply:
- A maximum of ten Stage 1 units of study can be completed in the degree.
- Students must complete a minimum of six Stage 3 units of study.
- Compulsory unit HAC00011 must be completed.
- A unit of study can only be counted once as part of a major, minor or elective.
- Students are not permitted to enrol in units of study where they have completed other units of study that are deemed to be equivalent, e.g. dual coded units of study such as HAH210/HAH310.
- Equivalent units of study cannot be used for credit at a level other than that which the student has enrolled, e.g. if a student has enrolled in a unit of study coded as a Stage 2 unit of study (AHH210), it cannot be counted as a Stage 3 unit of study.
- Students are permitted to include one non-Social Science or non-Arts minor as part of their course structure. If so, no further non-Social Science or non-Arts units of study will be counted towards the degree.
- Students must complete a minimum of 19 Arts or Social Science units of study.
- The maximum number of units of study that may be completed for the degree course is 26.

**Prerequisites/Corequisites**
Students must ensure they have met prerequisite/corequisite requirements listed for each subject before enrolling.

**Majors/minors & Specialisations**
To qualify for the award of the Bachelor of Social Science degree, students must complete at least one major chosen from Social Science. Students may choose a second major from Arts and Social Sciences or minor(s) from Arts, Social Science or Business.

**Social Science majors/minors:**
- Politics
- Psychology
- Sociology

**Students may choose a second major or minor from the Social Science or Arts.**

**Arts major/minors:**
- Australian Studies
- Cultural Studies
- Electronic Society
- Italian Studies
- Japanese
- Literature
- Media Studies
- Philosophy and Cultural Inquiry

See page 147 for Arts major/minor details.

**Students may choose a minor from Business.**

**Business minors:**
- Accounting
- Asian Business
- Business Law
- Economics
Politics at Swinburne is focused on the areas of greatest relevance to students in their working lives. It deals with the institutions and processes of government in Australia, the forces that have shaped them, and the consequences for ordinary Australians. Recognising that Australia is increasingly being shaped by international forces, it introduces students to global politics and to the politics of the Asian region, with which Australia’s future is closely linked, and where increasing numbers of Australians are living and working.

Politics graduates find employment in a wide range of professions where knowledge of public affairs and skills in analysis, evaluation, and communication, are valued. Many work in journalism, social work, research, administration, and business in Australia and other countries in the Asia Pacific region.

A Politics major must include two Stage 1 units of study, and six post Stage 1 units of study. At least three units of study must be taken at Stage 3. The remaining post Stage 1 units of study may be taken at Stage 2 or 3. Units of study available in the Politics major or minor are as follows:

**Stage 1**
- HAP100 Australian Politics
- HAP117 International Politics

**Stage 2**
- HASP202 Social Theory

The following units of study can be taken as Stage 2 or Stage 3 but not both:
- HAP221/HAP321 Modern Australia
- HAP234/HAP334 War and Peace in a Globalized World
- HAP235/HAP335 Comparative Asian Politics
- HAP231/HAP331 Dictators, Democrats and Dynasties: Comparative Politics
- HAPM226/HAPM226 Making News and Making Policy: The Media and Politics
- HASP200/HASP300 Public Policy in Australia
- HASP201/HASP301 Work in Australia

**Stage 3**
- HASP303 Research Project
- HASP314 Sociology of Health
- HASP309 Social Research Design: Principles and Methods*
- HASP307 Qualitative Research Methods
- HASP332 Internship in Political Research (equivalent to 2 units of study - convenor’s approval required prior to enrolment)

*HASP309 replaces HASP306 Quantitative Research Methods.

**Psychology - Major/Minor**

The undergraduate Psychology program provides students with a broad introduction to psychology in all three stages. In Stage 3 some attention is given to vocational skills and knowledge relevant to applied fields.

Many people take up a career related to psychology after completion of a three-year program, but some choose to undertake further study in order to work specifically as psychologists. To be regarded as a professionally trained psychologist in Australia, it is necessary to be eligible for registration as a psychologist with a State Psychologist Registration Board. Membership of the Australian Psychological Society (APS) is also highly desirable. The minimum requirement for registration as a probationary psychologist in the state of Victoria is completion of four years progressive study in psychology, including specified elements. The minimum academic requirement for associate membership of the APS is completion of an accredited four-year program of psychological study. The Swinburne psychology major has APS approval as a three-year sequence of study. The honours year in Psychology and the Postgraduate Diploma in Psychology at Swinburne are fourth-year courses which have APS accreditation. Please refer to the Postgraduate Courses section for further information.

Graduates in psychology are highly sought after by a wide range of organisations to work in human services, as research officers, human resource managers, and marketing and advertising personnel. After completing a Bachelor degree with a major in psychology, graduates can undertake a fourth year in psychology and further study in areas of professional psychology, such as Counselling, Health, Clinical, Organisational, Neuropsychology and Sports Psychology. The ten unit of study listed below must be completed to satisfy the requirements of a Psychology major. In addition, students are required to complete the mandatory unit HMA103.
It should be noted that the undergraduate psychology major is sequential in nature; completion of the prescribed units of study at one stage of the program is a prerequisite for study at the next level. The Psychology major consists of the following:

Stage 1

HAY100 Psychology 100
HAY101 Psychology 101

Stage 2

HAY205 Cognition and Human Performance
HAY206 Developmental Psychology
HMA217 Design and Measurement 2
HMA219 Design and Measurement 3

Stage 3

HAY307 Social Psychology
HAY308 The Psychology of Personality
HAY309 Psychological Measurement
HAY321 Abnormal Psychology

A Psychology minor consists of six of the following units of study in addition to the mandatory unit HMA103: HAY100, HAY101, HAY206, HMA217, HMA219, HAY307 or HAY321.

Sociology - Major/Minor

Sociology is the study of how individuals affect wider groups, institutions and society as a whole, and how these groups and institutions in turn affect individuals. It provides an understanding of how groups and institutions work. The Swinburne Sociology major has a strong emphasis on policy and research skills. It provides a broad understanding of research design and students learn about different methods, ranging from participant observation and focus groups to large scale surveys and analysis of secondary data. A sociological perspective is an essential part of informed decision making and human resource management in a rapidly changing social world.

Sociology at Swinburne studies Australian society in an international perspective. It also focuses on the social consequences of new technology, particularly biotechnology and information technology. The program takes an applied approach, emphasising how sociology can be used to solve practical problems faced by individuals, organisations and governments.

Some students majoring in Sociology will have the opportunity to gain experience of social research in the workplace through the Sociology internship program.

Sociology graduates typically find careers in the areas of social research, administration, planning, community development, human resources, policy development, and marketing. These positions all require the conceptual and skill-based training that comes from undertaking a degree in sociology.

A Sociology major must include two Stage 1 units of study, and six post Stage 1 units of study. At least three units of study must be taken at Stage 3. The remaining post Stage 1 units of study may be taken at either Stage 2 or 3. Students majoring in Sociology must take either HASP309 or HASP307 (it is recommended that students take both units).

The Sociology major consists of the following:

Stage 1

HAS100 Sociology 1A (Introductory Sociology)
HAS101 Sociology 1B (Social Institutions and Social Change)

Stage 2

HAS290 Sociology of the Body
HAS296 The Family, Sex and Society.
HAS301 eSociety: Sociology of the Electronic Age
HASP202 Social Theory

The following units of study may be taken at Stage 2 or Stage 3 but not both:

HASP200/HASP300 Public Policy in Australia
HASP201/HASP301 Work in Australia

Stage 3

HAS303 Genetics and Society
HAS310 Migration and Ethnicity
HAS307 Qualitative Research Methods #
HASP300 Social Research Design: Principles and Methods *
HASP314 Sociology of Health
HASP303 Research Project
HASP308 Internship in Social Research (equivalent to 2 units of study - Subject Convener's approval required prior to enrolment)

* Students undertaking a Sociology major must complete at least one of these units of study.

Bachelor of Social Science (Community Health) [N068]

The Bachelor of Social Science (Community Health) offers students the opportunity to combine different disciplinary approaches to health and the environment. Students will be able to choose from a range of units of study that include core units in public and community health, health ethics, policy, law and sociology. These units of study all focus on understanding or improving the health status of individuals and communities in different social settings. The program encapsulates the principles of public and environmental health, including an understanding of the risk management aspects of maintaining good health and environment. It also familiarises students with a social model of health service provision and builds skills in social research design, statistics and research methods, policy, ethics and law.

Aims & Objectives

The Bachelor of Social Science (Community Health) aims to:

- Develop students' mastery of the basic theoretical and practical principles of public and environmental health and its relationship to human behaviour, social health and the environment.
- Develop students' insights into the distribution of health and illness in Australia.
- Appreciate the value of examining Australian health policy and health system in a global context.
- Evaluate the social context of ideas and experiences of health and illness.
- Understand the major recent shifts and trends in health policy and in the provision and management of health and environmental services in Australia and internationally.
- Critically evaluate the impact of policy changes in health and service delivery.
- Understand the political economy of health care in Australia.
- Examine social and cultural factors in public and community health and in the treatment of sick persons.

Campus

Hawthorn

Career Opportunities

There is a growing need to develop professionals who can contribute to government policy initiatives in the health field through their skills in, and understanding of, the key determinants of health. Graduates completing this degree will be able to identify and manage threats to the environment, as provided by the health science discipline, and apply the theory of working with individuals, families, groups and communities as provided by the social science discipline. Graduates are employable across a range of vocational areas such as community and public health promotion and planning, policy development, social and market research, risk management and health education.

Professional Recognition

Upon completion of the Bachelor of Social Science (Community Health) graduates may receive substantial credits towards the Bachelor of Health Science (Public and Environmental Health) program offered by Swinburne. On completion of the Bachelor of Health Science (Public and Environmental Health) graduates will be eligible for professional recognition by the Australian Institute of Environmental Health.

Course Duration

Three years full-time or equivalent part-time. An optional and additional year of Industry-Based Learning may also be available.
Course Structure
The Bachelor of Social Science (Community Health) is a three-year full-time or six-year part-time course requiring the successful completion of 24 units of study (300 credit points). All units of study in the degree are worth 12.5 credit points. A full-time load consists of eight units of study per year (four per semester) and four units of study per year (two per semester) for a part-time load.

Students will normally be enrolled in the Recommended Study Sequence (see Units of Study below). However, students will be able to choose units of study within each level in any order, subject to prerequisite studies being met. Students will also be able to take five elective units over the course of the degree in related areas of interest such as psychology, politics and the physical sciences.

CAREERS IN THE CURRICULUM
In addition to the above, students must complete HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of the course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students’ career skills.

Electives Plus Sequences
Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Enterprise: Marketing
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 183 for Electives Plus sequence details.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their program of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Recommended Study Sequence

**Stage 1**

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
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</thead>
<tbody>
<tr>
<td>HAC100 Sociology 1A (Introduction Sociology)</td>
<td>HES2715 Built and Sustainable Communities</td>
</tr>
<tr>
<td>HES1710 Philosophy and Practice of Public and Environmental Health</td>
<td>HES2735 Communicate Disease Control</td>
</tr>
<tr>
<td>HAM113 Professional Communication Practice</td>
<td>Elective</td>
</tr>
<tr>
<td>HMA103 Statistics and Research Methods A or HMA105 Practical Statistics</td>
<td>Elective</td>
</tr>
<tr>
<td>Elective</td>
<td>Semester 1</td>
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</tbody>
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<table>
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<tr>
<th>Semester 2</th>
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<tbody>
<tr>
<td>HES2716 Health Policy and Planning</td>
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<tr>
<td>HES2770 Health and Environmental Law 1</td>
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<tr>
<td>Elective</td>
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<tr>
<th>Semester 2</th>
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<tbody>
<tr>
<td>HES2716 Health Policy and Planning</td>
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<tr>
<td>HES2770 Health and Environmental Law 1</td>
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<td>Elective</td>
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<table>
<thead>
<tr>
<th>Semester 3</th>
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<tbody>
<tr>
<td>HAC0001 Elective</td>
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**Stage 4**

<table>
<thead>
<tr>
<th>Semester 1</th>
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</thead>
<tbody>
<tr>
<td>HES2715 Built and Sustainable Communities</td>
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<tr>
<td>HES2735 Communicate Disease Control</td>
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<td>Elective</td>
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<tr>
<th>Semester 2</th>
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<td>HES2716 Health Policy and Planning</td>
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<tr>
<th>Semester 3</th>
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<tbody>
<tr>
<td>HES2716 Health Policy and Planning</td>
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<tr>
<td>HES2770 Health and Environmental Law 1</td>
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<td>Elective</td>
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<table>
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<tr>
<th>Semester 4</th>
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</thead>
<tbody>
<tr>
<td>HES2716 Health Policy and Planning</td>
</tr>
<tr>
<td>HES2770 Health and Environmental Law 1</td>
</tr>
</tbody>
</table>

**Entry Requirements**
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification. 2008 VCE Prerequisites: Units 3 and 4 - a study score of at least 20 in English (any). 2007 Round 1 Clearly-in ENTER: new course for 2008

**Application Procedure**
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34261(CSP), 34262(Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
Part-time study is also available to Australian citizens and holders of Australian residency.

**Bachelor of Social Science (Psychology) (N063)**
Students of Swinburne’s Social Science (Psychology) degree acquire knowledge and skills in a variety of study areas which improve their ability to understand and explain human behaviour and to analyse and devise social policies. The Psychology major (APS accredited) provides a broad introduction to a range of relevant studies, with more specialised study in developmental psychology, cognition, social psychology, personality, design and measurement, psychological measurement and abnormal psychology. Social Science (Psychology) students acquire a range of ‘analytical and research skills’ - skills which are highly valued by employers in a range of industries. Course activities also develop skills such as independent thinking, conceptual analysis, theory development, writing clearly and effectively, planning research projects, attention to detail and time management. Other activities develop skills such as public speaking, interviewing, planning group projects and organising seminars. These activities and skills help prepare students for management and leadership positions.

Social Science students learn to use ideas and information stored in libraries and electronic databases and acquire computer skills. They develop a strong sense of personal integrity and an awareness of the role of ethics in private and public
life. These generic skills enhance students' abilities to solve problems and to make decisions. Consequently Swinburne Social Science (Psychology) graduates are well equipped to find work in a variety of areas, in both the public and private sectors.

Campus  
Hawthorn

Career Opportunities  
Graduates in psychology are highly sought after by a wide range of organisations to work in, for example, human services as research officers, as human resource managers, marketing and advertising personnel, in policy development, research, welfare, community and youth work. After completing a degree with a major in psychology, graduates can undertake a fourth year in psychology and further study in professional psychology such as Counselling, Health, Clinical, Organisational, and Sports Psychology.

Professional Recognition  
The three-year undergraduate sequence in Psychology at Swinburne is accredited by the Australian Psychological Society (APS). The Honours year in psychology is an APS accredited 4th year.

Course Duration  
Three years full-time or equivalent part-time. An optional and additional year of Industry Based Learning (IBL) may also be available.

Course Structure  
The Bachelor of Social Science (Psychology) is a three year full-time or six year part-time course requiring the successful completion of 24 units of study (300 credit points), of which 15 units of study must be Arts or Social Science units of study. All units of study in the degree are normally worth 12.5 credit points. A full-time load consists of eight units of study per year (four per semester) and four units of study per year (two per semester) for a part-time load. Students are required to complete twelve Psychology component units of study, a mandatory unit of study, an additional major or two minors, and electives.

Mandatory unit of study  
HMA103 Statistics and Research Methods A

Careers in the Curriculum (CIC)  
In addition to the above, students must complete a compulsory unit of study HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects  
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Psychology Component  
The Psychology Component is an approved grouping of twelve Psychology units of study. It consists of ten mandatory units of study and two approved electives.

Major  
A major is an approved grouping of eight units of study in an area of study. It consists of two Stage 1 units of study (eg: HAS100) and six post-Stage 1 units of study. At least three units of study must be taken at Stage 3 (eg: HAS303). The remaining post-Stage 1 units of study may be taken at Stage 2 or 3. Students wishing to undertake a Psychology major are required to complete ten units of study (refer to relevant area of study section).

Minor  
A minor is an approved grouping of five units of study in an area of study. It normally consists of one unit of study at Stage 1 and four post-Stage 1 units of study, at least one of which is normally at Stage 3. Students wishing to undertake a Japanese minor are required to complete six units of study (refer to relevant area of study section).

Elective  
An elective is a unit of study that is not taken as part of a major or minor. Students may include one of the three-subject Electives Plus Sequences as part of their elective choice (see below).

In addition to completing the mandatory units of study and Psychology component, students must choose one of the following options:

Option 1  
- Major
- 3 Electives

Option 2  
- Minor 1
- 1 Electives

Note: In addition students must complete a minimum of 19 Arts and Social Sciences units of study, regardless of which of the above options they choose.

Course requirements and restrictions  
The following course requirements and restrictions apply:

- A maximum of ten Stage 1 units of study can be completed in the degree.
- Students must complete a minimum of six Stage 3 units of study.
- Compulsory unit HAC0001 must be completed.
- A unit of study can only be counted once as part of a major, minor or elective.
- Students are not permitted to enrol in units of study where they have completed other units of study that are deemed to be equivalent, e.g. dual coded units of study such as HAH210/HAH310.
- Equivalent units of study cannot be used for credit at a level other than that which the student has enrolled, e.g. if a student has enrolled in a unit of study coded as a Stage 2 unit of study (HAH210), it cannot be counted as a Stage 3 unit of study.
- Students are permitted to include one non-Social Science or non-Arts minor as part of their course structure. If so, no further non-Social Science or non-Arts units of study will be counted towards the degree.
- Students must complete a minimum of 19 Arts or Social Science units of study.
- The maximum number of units of study that may be completed for the degree course is 26.

Prerequisites/Corequisites  
Students must ensure they have met prerequisite/corequisite requirements listed for each subject before enrolling.

Majors/Minors & Specialisations  
To qualify for the award of the Bachelor of Social Science (Psychology) degree, students must complete a Psychology component and one major or two minors, and elective(s).

Social Science majors/minors:  
- Politics
- Psychology
- Sociology

Arts majors/minors:  
- Australian Studies
- Cultural Studies
- Electronic Society
- Italian Studies
- Japanese
- Literature
- Media Studies
- Philosophy and Cultural Inquiry

See page 147 for Arts major/minor details.

Business minors:  
- Accounting
- Asian Business
- Business Law
- Economics
- eBusiness
- European Business
- Finance
- Human Resource Management / Organisation Behaviour
**Electives Plus Sequences**

Electives Plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students undertaking this course can choose to study Electives Plus sequences of up to three units from one of the following themes:

- Design: Process and Strategy
- Effective Communication
- Entrepreneurship Marketing
- Establishing and Running a Business
- Information Orientation and Knowledge Management
- Language Practice and Culture
- Multimedia & Web Development
- Sustainability
- The Networked Economy
- Undergraduate Research Skills

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing. See page 193 for Electives Plus sequence details.

**Units of Study**

Psychology component of the course consists of the following units of study:

- **Stage 1**
  - HAY100 Psychology 100
  - HAY101 Psychology 101

- **Stage 2**
  - HAY205 Cognitive and Human Performance
  - HAY206 Developmental Psychology
  - HMA278 Design and Measurement 2
  - HMA279 Design and Measurement 3

- **Stage 3**
  - HAY307 Social Psychology
  - HAY308 The Psychology of Personality
  - HAY309 Psychological Measurement
  - HAY321 Abnormal Psychology

And two of the following units of study:

- HAH100 Introduction to Philosophy
- HAH103 Critical Thinking
- HAS100 Sociology 1A (Introductory Sociology)
- HAS101 Sociology 1B (Social Institutions and Social Change)
- HAH219/HAH319 Psychological Psychology
- HAS216 The Family, Sex and Society
- HAS230 Sociology of the Body
- HASP207 Qualitative Research Methods

**Application Procedure**

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34341 (CSP), 34342 (Fee), 34343 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Part-time study is available to Australian citizens and holders of Australian residency.

**Double Degrees**

**Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Computer Science and Software Engineering)** (J370)

This double degree aims to provide students with a broad range of multimedia production skills combined with extensive skills in software engineering and development required to develop games and interactive applications. The degree is designed to combine theoretical and practical knowledge through a range of experiential teaching methods, and apply these to the development of 2D and 3D games. Students completing this degree will possess a highly-desirable combination of multimedia and information technology skills, enabling them to find work in a variety of positions in the games industry as well as in the broader information and communications technology sector.

**Aims & Objectives**

Graduates should have:

- A sound and broad knowledge of the design of multimedia and interactive applications and an appreciation of the various skills required;
- Skills in the application of learning and instructional design principles to structured multimedia and interactive applications;
- The ability to function effectively as an individual and in project teams, whether as manager, leader or team member;
- The communication and management skills required to successfully manage multimedia development projects;
- Been prepared for the rapidly evolving multimedia and games industries by developing their life-long learning skills and flexibility of mind;
- Knowledge of the computer networking and software technologies typical for multimedia production facilities, and skills in analysing, specifying and supporting those networking and software resources;
- An understanding of the process of multimedia and interactive application development, and the skills necessary for working in a development team on a large scale project, and
- An understanding of the changing face of multimedia and the current games industry, in relation to both acceleration in the use and development of technology, and its impact on society.
- An understanding of the process of software development;
- Skills in the object-oriented approach to systems analysis, design and implementation;
- High level skills in developing software in Java and C++;";
- An understanding of social, legal and ethical issues confronting the software engineering professional;
- An understanding of aspects of user-interaction;
- An immersive and experiential understanding of the interactive nature of game play;
- Knowledge of current aspects of game play including: terrain models, levels of detail, character and real-time animation, game architecture and user-interaction;
- An understanding of game-specific principles such as ludology and napbots and their application to wider games research;
- The skills to build large-scale graphical simulations and non-recreational games.

**Campus**

Hawthorn

**Career Opportunities**

Career outcomes for graduates of this program will lead to possible employment opportunities in the multimedia, information technology and electronic games-related areas. Graduates who possess multimedia skills are expected to be in high demand as the media industry progressively shifts its delivery to the newer multimedia platforms. Examples include: web authoring for electronic...
publications and news broadcasts, computer authoring and information architecture, 3D animation, non-linear video production and interactive television.

Professional Recognition
It is expected that the program will be accredited at Professional Level with the Australian Computer Society.

Course Duration
Four years full-time plus an optional and additional year of Industry-Based Learning (IBL).

Course Structure
The BMm (Games and Interactivity) / BSc (Computer Science and Software Engineering) double degree requires students to successfully complete 400 credit points of approved units of study equivalent to four years of full-time study, with an optional and additional year of Industry-Based Learning (IBL) normally taken after three years of study.

Note: The optional IBL program is not available to international students.

These courses operate under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed equivalent to one hour of student work per week for one semester whether in contact with staff or in private study. Usually, four units of study are taken per semester, each subject having a value of 12.5 credit points. The typical student's average weekly workload during semester is therefore expected to be 50 hours. Total student contact hours, including lectures, classes, tutorials, and laboratory sessions, will be approximately 16 hours/week during academic semesters.

Students choose units of study from three Study Groups, completing at least 400 credit points made up of:
• Core Games & Interactivity Studies (112.5 credit points)
• Core Multimedia & CSSE Studies (221.5 credit points)
• Elective Studies (50 credit points)

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit of study HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Units of Study

Core Games & Interactivity Studies (all 12.5 credit points)
HET120 Interactive Games Structures
HET321 Physics of Games
HET325 Principles of Game Design
HET433 Multimedia Interfaces
HET435 Games & Interactivity Project 1
HIT3046 Artificial Intelligence for Games
HIT3083 Digital Graphics
HIT243 Games Programming
HIT3158 Software Engineering Project A

Core Multimedia & CSSE Studies (all 12.5 credit points)
HDMD101 Design for Multimedia 1
HET104 LAN Principles
HET206 3D Animation and Special Effects
HET213 User Experience Design
HET222 Digital Video and Audio
HET233 Games & Interactivity Lab 1
HET234 Games & Interactivity Lab 2
HIT1307 Internet Technologies
HIT1402 Database Analysis and Design
HET2080 Introduction to Programming
HIT2308 Software Development Practices
HIT3037 Programming in Java
HIT3044 Professional Issues in Information Technology
HIT3172 Object-Oriented Programming in C++
HIT3181 Technical Software Development
HIT3309 Software Project Practices and Management
HIT3310 Software Architectures and Design
HIT3311 Software Deployment and Evolution
HMS111 Engineering Mathematics 1

Elective Studies (all 12.5 credit points)
HALM104 Media Literature Film: Texts and Contexts
HBGG200 New Venture Development and Management
HDMD102 Design for Multimedia 2
HET215 Multimedia Applications
HET217 Business of Games
HET324 Media Theory, DVD and Compositing
HET332 Interactive Multimedia
HET407 Multimedia Technology
HET412 Networking and Online Games
HIT2427 Object-Oriented Programming in .NET
HIT3087 Advanced Java
HIT2420 Database Management Systems

Recommended Study Sequence

Semester 1
HDMD101 Design for Multimedia 1
HET120 Interactive Games Structures
HET1402 Database Analysis and Design
HIT2080 Introduction to Programming

Semester 2
HDMD102 Design for Multimedia 2
HET222 Digital Video and Audio
HET3181 Technical Software Development
HMS111 Engineering Mathematics 1

Semester 3
HET208 3D Animation and Special Effects
HET215 Multimedia Applications
HIT2308 Software Development Practices
HIT3172 Object-Oriented Programming in C++

Semester 4
HET213 User Experience Design
HET325 Principles of Game Design
HIT1307 Internet Technologies
HIT3037 Programming in Java

Semester 5
HET321 Physics of Games
HET233 Games & Interactivity Lab 1
HIT3046 Artificial Intelligence for Games
Choose one of:
HALM104 Media Literature Film: Texts and Contexts
HET324 Media Theory, DVD and Compositing
HIT407 Multimedia Technology

Semester 6
HET234 Games & Interactivity Lab 2
HIT3083 Digital Graphics
HIT3343 Games Programming
HIT3309 Software Project Practices and Management
Optional IBL year
HIT3158 Industry-Based Learning
HISW050 Industry-Based Learning

Semester 7
HET104 LAN Principles
HIT433 Multimedia Interfaces
HIT3158 Software Engineering Project A
HIT3310 Software Architectures and Design

Semester 8
HET435 Games & Interactivity Project 2
HIT3044 Professional Issues in Information Technology
HIT3311 Software Deployment and Evolution

Choose one of:
HBSG200 New Venture Development and Management
HET217 Business of Games
HET332 Interactive Multimedia
HET412 Networking and Online Games

Note:
• In addition to the above, students must complete a compulsory unit of study HAC0001 Careers in the Curriculum to be awarded the degree.
• The optional Industry-Based Learning (IBL) program is not available to international students.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any) and a study score of at least 25 in Mathematical Methods (either) or Specialist Mathematics.
All Non-Year 12 students (NONY12) should refer to the VTAC website at: www.vtac.edu.au for further information.
2007 Round 1 Cut-off: 73.30 (CSP) n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34721 (CSP), 34722 (Fee), 34723 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au

Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems) [5040]

This double degree combines a solid grounding in the physical aspects of human physiology and the related technologies for clinical care and biomedical monitoring of Biomedical Sciences, with expertise in studies in computer hardware and software, telecommunications and electronics provided by computer systems engineering.

The program covers specialist theoretical and practical study of functional aspects of the human body and the study of modern instrumentation and technology required in clinical care and monitoring environments. Additionally, it is strengthened by the applied nature of the engineering, to bring the added skills and expertise in the computing, electronics and telecommunications.

This program offers career choices both in the specialised hospital and healthcare industry as well as instrumentation and computing.

Aims & Objectives
The course has the following objectives:
• Give students a sound knowledge of anatomy, physiology, the application of physics to biomedical systems, and the appropriate application of monitoring technology in the clinical environment;
• Develop in students a mastery of the application of physics and mathematical principles to the interpretation and study of human physiological processes;
• Develop an understanding of human pathophysiology and associated clinical techniques for identifying them;
• Develop in students a thorough understanding of the appropriate technology, instrumentation and techniques, and competence in their application, so that students are able to comprehend and analyse problems and obtain satisfactory design solutions which, where appropriate, show originality and resourcefulness;
• Introduce students to the skills necessary for working in a clinical environment as an effective team member;
• Develop in students an understanding of clinical evaluation and monitoring to assist the medical process;
• Develop students’ problem solving skills in complex human-machine systems;
• Develop in students the communication and management skills required to successfully manage medical technology projects;
• Develop students’ communication skills so that they can present their ideas clearly by verbal, written and graphical means;
• Give students an understanding of safety, social, legal and ethical issues confronting the paramedical professional, and knowledge and experience in human factors, knowledge-based systems, database systems and data communications;
• To develop in students a mastery of a wide spectrum of basic engineering principles underlying electronics and computer systems engineering;
• To develop in students a thorough understanding of a broad range of engineering methods and techniques, and competence in their application, so that students are able to comprehend and analyse problems and obtain satisfactory design solutions which, where appropriate, show originality and resourcefulness;
• To develop students’ communication skills so that they can present their ideas clearly by verbal, written and graphical means;
• To give students an appropriate introduction to the role of the professional engineer in the community and to explore the social effects of engineering decisions;
• To prepare students for the changing workplace and changing societal context of engineering by developing their life-long learning skills and flexibility of mind;
• To integrate the formal course of study with an optional one year period of industry based learning*; and
• To deliver a professionally recognized course of study which will enable graduates to join the Institution of Engineers Australia as graduate members.

* Please note that Industry-Based Learning is not available to international students.

Campus
Hawthorn

Career Opportunities
This course equips graduates for careers in either hospital departments as hospital scientists, research officers, technology specialists and technicians (including cardiologists, neurologists, anesthesiologists, intensive care, and medical electronics), or biological and medical research laboratories and industry. Graduates can also find employment in the industrial and scientific fields.

Professional Recognition
Graduates are eligible for membership of The Institution of Engineers, Australia. Graduates are eligible to apply for graduate membership of the Australasian College of Physical Scientists and Engineers in Medicine Engineering.

Course Duration
Five years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available or a minimum of 12 weeks professional engineering practice.

Course Structure
This course will operate under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed to be equivalent to one hour of student work per week over a semester, whether in contact with staff or in private study. Four units of study, each worth 12.5 credit points, will generally be taken each semester. The typical student's average weekly workload during semester is therefore expected to be fifty hours. Total student contact hours, including lectures, classes, tutorials, flexible learning and laboratory and field sessions will vary in different semesters.

Students choose units of study from five Study Groups:
• Engineering & Science (BMS) Core Studies
• Software Engineering Studies
• Technical (BMS) Studies
• Specialist Technical (BMS) Studies
• Management and Business Studies
According to the following rules, students complete at least 500 credit points made up of:

- Engineering & Science (BMS) Core Studies (350 credit points)
- 25 credit points chosen from Software Engineering Studies
- 25 credit points chosen from Technical (BMS) Studies
- 50 credit points chosen from Specialist Technical (BMS) Studies
- 37.5 credit points chosen from Management and Business Studies, and a further
- 12.5 credit points chosen from Software Engineering or Specialist Technical (BMS) studies.

**Careers in the Curriculum (CIC)**

In addition to the above, students must complete a compulsory unit of study HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

**Final Year Experience - Major Projects**

As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

**Units of Study**

**Engineering & Science (BMS) Core Studies (all 12.5 credit points)**
- HET1000 Professional Engineering
- HET102 Introductory Physiology
- HET124 Energy and Motion
- HET128 Physics 2
- HET133 Human Physiology
- HET162 Electronic Systems
- HET202 Digital Electronics Design
- HET214 Circuits and Electronics 1
- HET226 Sensory Systems
- HET230 Cardiovascular Biophysics
- HET232 Embedded Microcontrollers
- HET235 Biomedical Electronics
- HET240 Cellular Biophysics
- HET269 Renal and Respiratory Biophysics
- HET312 Control and Automation
- HET314 Communications Principles
- HET320 Digital Signal and Image Processing
- HET378 Integrated Circuit Design
- HET408 Biomedical Imaging and Emerging Technologies
- HET416 Computer Systems Engineering
- HET417 Photonics and Fibre Optics
- HET419 Physiological Modelling
- HET550 Design and Development Project 1
- HET556 Design & Development Project 2
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HMS213 Engineering Mathematics 3B
- HMS214 Engineering Mathematics 4B

**Technical (BMS) Studies (all 12.5 credit points)**
- HET308 Circuits and Electronics 2
- HET315 Communications Information Theory
- HET316 Electromagnetic Waves
- HET489 Robotic Control
- HET513 Design of DSP Architectures
- HET515 Advanced Embedded Systems
- HIT3138 Intelligent Systems

**Software Engineering Studies (all 12.5 credit points)**
- HT2080 Introduction to Programming
- HT3181 Technical Software Development
- HT3172 Object-Oriented Programming in C++

**Specialist Technical (BMS) Studies (all 12.5 credit points)**
- HES1510 Chemistry 1
- HES1525 Chemistry 2
- HET103 Photonics 1
- HET219 Neurological Monitoring
- HET227 Neurophysiology
- HET425 Nucleonics and Spectroscopy
- HET527 Sleep and Attention
- HET528 Higher Cortical Functions
- HMA103 Statistics and Research Methods A
- HMA278 Design and Measurement 2

**Management and Business Studies (all 12.5 credit points)**
- HBSG200 New Venture Development and Management
- HESS380 Engineering Management 1
- HESS380 Engineering Management 2

**Recommended Study Sequence**

**Semester 1**
- HETF1000 Professional Engineering
- HET102 Introductory Physiology
- HET124 Energy and Motion
- HMS111 Engineering Mathematics 1

**Semester 2**
- HET133 Human Physiology
- HET182 Electronic Systems
- HT2080 Introduction to Programming
- HMS112 Engineering Mathematics 2

**Semester 3**
- HET202 Digital Electronics Design
- HET240 Cellular Biophysics
- HT3181 Technical Software Development
- HMS213 Engineering Mathematics 3B

**Semester 4**
- HET230 Cardiovascular Biophysics
- HET235 Biomedical Electronics
- HET260 Renal and Respiratory Biophysics
- HMS214 Engineering Mathematics 4B

**Optional IBL year**
- HSW050 Industry-Based Learning
- HSW055 Industry-Based Learning

**Semester 5**
- HET128 Physics 2
- HET314 Communications Principles

**Choose one of:**
- HET219 Neurological Monitoring
- HET227 Neurophysiology
- HET425 Nucleonics and Spectroscopy

**Semester 6**
- HET214 Circuits and Electronics 1
- HET226 Sensory Systems
- HET232 Embedded Microcontrollers
- HET419 Physiological Modelling

**Semester 7**
- HET312 Control and Automation
- HET408 Biomedical Imaging and Emerging Technologies
HET550  Design and Development Project 1
Management and Business Studies (choose one)

Semester 8
HET339  Digital Signal and Image Processing
HET566  Design & Development Project 2
Management and Business Studies (choose one)
Specialist Technical (BMS) Studies (choose one)

Semester 9
HET378  Integrated Circuit Design
HET417  Photonics and Fibre Optics
HET515  Advanced Embedded Systems
Specialist Technical (BMS) Studies (choose one)

Semester 10
HET416  Computer Systems Engineering
Specialist Technical (BMS) Studies (choose two)
Choose one of:
HET315  Communications Information Theory
HIT3138  Intelligent Systems
HIT489  Robotic Control

Note:
• Not all units of study are offered all semesters. Electives will be offered subject to a sufficient number of enrolments.
• In addition to the above sequence, the successful completion of HED400 Professional Experience in Engineering is required for the award of the above degree and can be taken at any stage in the course.
• In addition to the above, students must complete compulsory units of study HAC0001 Careers in the Curriculum to be awarded the degree.
• The optional Industry-Based Learning Program (IBL) is not available to international students.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent. 2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any), and at study score of at least 25 in Mathematical Methods (either). Selection mode: CY12: ENTER and two-stage process with a middle-band of approximately 20%. Middle Band: Re-ranking based on study scores in chemistry, physics and specialist mathematics.
All Non-Year 12 students (NONY12) should refer to the VTAC website at: www.vtac.edu.au for further information.
2007 Round 1 Clear-in ENTER: 77.15 (CSP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34681 (CSP), 34682 (Fee), 34683 (Int. Fee). For further information, visit the VTAC website at: www.vtac.edu.au
Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swin.edu.au/ scholarships

Bachelor of Science (Biotechnology) / Bachelor of Arts (Media and Communications) [ESBA087]
This double degree course emphasises the skill sets of a biotechnologist whilst broadening the student's skills to include media and communication. The course is ideal for students who see the need to promote science in the media and allows students to pursue a career in either or both disciplines (including further study). Both degrees are hands-on and involve the student with practical reinforcement of their theory. Being "work ready" is a strength of this double degree.

Aims & Objectives
The course aims to develop:
• Mastery of the basic scientific principles that underpin biotechnology.
• A sound and practical knowledge laboratory techniques and practices through which biotechnological discoveries are made.

• An appreciation of the social context in which scientific work is undertaken and which scientific knowledge is applied.
• An appreciation of the legislation that regulates scientific activities, and particularly those that relate to biotechnology.
• Advanced communication and interpersonal skills, both verbal and written.
• An appreciation of the moral, ethical and social elements essential to a satisfying personal philosophy and a sound professional attitude.
• Skills in self education, evaluation of new information and encouragement in flexibility of thought, to prepare students for a world of ever accelerating technological change.

In addition this course aims to develop:
• An understanding of communications and media.
• An advanced understanding of the social context of technological developments.
• An ability to define and analyse social issues related to science and technology.
• Excellent skills for professional communication, scientific communication and lay communication.

Campus
Hawthorn

Career Opportunities
This double degree prepares graduates for careers in the media and communications industries, where their expert understanding of the sciences associated with biotechnology will allow them to deal critically with technological issues and enhance community understanding.

Professional Recognition
Graduates may apply for membership of the following professional societies:
• Australian Biotechnology Association
• The Australian Society for Biochemistry and Molecular Biology
• Australian Society for Microbiology

Course Duration
Four years full-time plus an optional and additional year of Industry-Based Learning (IBL).

Course Structure
• The program involves four equally-weighted units of study per semester over four years, plus one optional year of full-time, paid, Industry-Based Learning (normally undertaken after the fourth semester). Practical laboratory work is undertaken throughout the course. A research project is undertaken in final year.
• Note: The optional Industry-Based Learning (IBL) program is not available to international students.

To qualify for the award of Bachelor of Science, a student must complete 200 credit points of science units of study ie. units of study that would normally be regarded as contributing to the science component of a science degree.

To qualify for the award of Bachelor of Arts, a student must complete 200 credit points of arts units of study that are selected to fulfil the requirements for the major study in Media and Communications. Details of the requirements for the major in Media and Communications and specification of other arts electives are given under the single degree for arts (majoring in Media and Communications) Bachelor of Arts (Media and Communications).

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-
focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Units of Study

Stage 1

<table>
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<tr>
<th>Semester 1</th>
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<tbody>
<tr>
<td>HES1610</td>
<td>Concepts of Biology</td>
</tr>
<tr>
<td>HES1510</td>
<td>Chemistry 1*</td>
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<tr>
<td>HMS101</td>
<td>Foundation Mathematics **</td>
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<td>HALM104</td>
<td>Media Literature Film: Texts and Contexts</td>
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<tr>
<td>HES1616</td>
<td>Concepts of Biotechnology</td>
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<tr>
<td>HES1525</td>
<td>Chemistry 2</td>
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<td>HAM106</td>
<td>The Media in Australia</td>
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Stage 2

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<tr>
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<tbody>
<tr>
<td>HES2621</td>
<td>Introduction to Biochemistry</td>
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<td>HES2631</td>
<td>The Microbial World</td>
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<th>Elective 1</th>
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<td>Arts Media/Comm Unit</td>
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<td>HES2638</td>
<td>Microbes in the Environment</td>
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Stage 3

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<tr>
<td>HES4621</td>
<td>Advanced Biochemistry</td>
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<tr>
<td>HES4641</td>
<td>Practical Biochemistry</td>
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<tr>
<td>Arts Media/Comm Unit</td>
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<td>Arts Elective</td>
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<tbody>
<tr>
<td>HES4626</td>
<td>Biotechnology</td>
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<tr>
<td>HES4646</td>
<td>Biotechnology Research Project</td>
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<td>Arts Media/Comm Unit</td>
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<td>Arts Elective</td>
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Stage 4

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<td>Arts Media/Comm Unit</td>
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<td>Arts Elective</td>
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<td>Arts Media/Comm Unit</td>
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<td>Arts Elective</td>
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Elective 1 to 3

Choose two of the following:

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<tr>
<td>HES2540</td>
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<td>HES2541</td>
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<td>HES2520</td>
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<td>HES2526</td>
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<td>HES2510</td>
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HES2515  Investigative Chemistry Prac 2
HES2735  Communicable Disease Control
HES3470  Environmental Management
HBSG260  New Venture Development and Management

Note that credit cannot be obtained for both HES2541 and HES2510. Nor can credit be gained for both HES2526 and HES2515.

The third elective is a free elective.

IBL, if undertaken, is generally taken between Stages 2 and 3 and consists of:

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<td>HSW050</td>
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<td>HSW055</td>
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This optional IBL program is not available to international students.

Note: In addition to the above, students must complete a compulsory unit HAC0001 Careers in the Curriculum to be awarded the degree.

Entry Requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any) and in Mathematics (any).

All Non-Year 12 students (NONY12) should refer to the VTAC website at: www.vtac.edu.au for further information.

2007 Round 1 Clearly-In ENTER: 82.00 (CSP), n/a (Fee)

Application Procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

VTAC code: 34241 (CSP), 34242 (Fee), 34243 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au

Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor’s Scholarship Program. For further information visit the website at: www.swin.edu.au/ scholarships

Bachelor of Science (Biotechnology) / Bachelor of Business [EB88057]

This double degree course emphasises the skill sets of a biotechnologist whilst broadening the student’s skills to include a discipline of business. The course is ideal for students who want to study biotechnology with a view to using that knowledge in a business venture, or as an employee of a biotechnology company which requires business skills. Students may also continue to higher degree studies (honours) in either discipline.

Aims & Objectives

The course is designed to develop:

- Mastery of the basic scientific principles that underpin biotechnology.
- A sound and practical knowledge laboratory techniques and practices through which biotechnological discoveries are made.
- An appreciation of the social context in which scientific work is undertaken and which scientific knowledge is applied.
- An appreciation of the legislation that regulates scientific activities, and particularly those that relate to biotechnology.
- Advanced communication and interpersonal skills, both verbal and written.
- An appreciation of the moral, ethical and social elements essential to a satisfying personal philosophy and a sound professional attitude.
- Skills in self education, evaluation of new information and encouragement in flexibility of thought, to prepare students for a world of accelerating technological change.

In addition, this course aims to develop:

- An understanding of the local and global business environment.
- General business knowledge and skills, especially in the area of management.
- An advanced understanding of the roles of research and development in the development of business enterprises.
- An understanding of entrepreneurship and the management of entrepreneurship in business.
- An understanding of the processes of innovation.
- Excellent skills for professional communication, especially within the business environment.
Campus
Hawthorn

Career Opportunities
This double degree provides professional education in biotechnology and business that enables graduates to use scientific research and innovative skills to create new business enterprises or to contribute to existing businesses.

Professional Recognition
Graduates may apply for membership of the following professional societies:
- Australian Biotechnology Association
- The Australian Society for Biochemistry and Molecular Biology
- Australian Society for Microbiology

The following professional recognition applies to studies in the Bachelor of Business, although in some cases additional units to the minimum required for a Major may be needed.
- Australian Computer Society (ACS)
- Australian Human Resources Institute (AHRI)
- CPA Australia (CPA) and the Institute of Chartered Accountants in Australia (ICAA)
- Australian Institute of Banking and Finance
- Australian Marketing Institute (AMI)
- Institute of Corporate Managers, Secretaries and Administrators

Course Duration
Four years full-time plus an optional and additional year of Industry-Based Learning (IBL).

Course Structure
The program involves four equally-weighted units of study per semester over four years, plus one optional year of full-time, paid Industry-Based Learning (normally undertaken after the fourth semester). Practical laboratory work is undertaken throughout the course. A research project is undertaken in final year.

Note: The optional industry-Based Learning (IBL) program is not available to international students.

The normal study mode is full-time with the courses being completed in four years. However, subject to student demand and the availability of staff, the academic component of the course may be accelerated in calendar time by undertaking Summer School studies.

To qualify for the award of Bachelor of Science, a student must complete 200 credit points of science units of study. The units of study that would normally be regarded as contributing to the science component of a science degree.

To qualify for the award of Bachelor of Business, a student must complete at least 187.5 credit points of business units of study that are selected to fulfil the requirements for the business degree. The Business requirements of this course are as follows:

Students must choose five Core Business units of study from:
HBM110 The Marketing Concept
HBH110 Organisation and Management
HBE110 Microeconomics
HBC110 Accounting for Success
HBL111 Law in Global Business
HIT1401 Introduction to Business Information Systems

The above units of study are chosen to ensure pre-requisite study for later year studies has been completed and any professional body requirements that might apply.

As well as the core business units of study, students must undertake:
- One Business major (6 units of study), and
- One Business minor (4 units of study)

A major sequence consists of an approved grouping of six post-core units of study (75 credit points), at least two (25 credit points) at Stage 3.

A minor sequence consists of an approved grouping of four post-core units of study (50 credit points), at least one (12.5 credit points) at Stage 3.

The following Business majors/minors are available:
- Accounting
- Asian Business#
- Business Law#
- Economics#
- eBusiness#
- European Business#
- Finance
- Human Resource Management / Organisation Behaviour
- Information Systems
- International Business
- Management
- Manufacturing Management
- Marketing
- # Available as minor only

See page 32 for Business major/minor details.

Careers in the Curriculum (CIC)
In addition to the above, students must complete a compulsory unit HAC0001 Careers in the Curriculum to be awarded the degree. Careers in the Curriculum (CIC) is an innovative unit designed to assist Swinburne students to enhance their employability and career prospects. It is usually undertaken in the second year of your course and is compulsory for all undergraduate students who commence their course from 2007 onwards. Students studying CIC will not incur a HECS or fee debt as the cost will be met by the university as part of an initiative to enhance students' career skills.

Final Year Experience - Major Projects
As part of the Swinburne Model for Professional Learning, all incoming undergraduates from 2007 will undertake 25 credit points of professionally-focused final year major projects within their programs of study. Entry with advanced standing may require alternate study sequences to be undertaken.

Units of Study
Stage 1
Semester 1
HES1610 Concepts of Biology
HMS101 Foundation Mathematics **
HES1510 Chemistry 1*
Core Business Unit of Study #

Semester 2
HES1616 Concepts of Biotechnology
HES1525 Chemistry 2
HMS102 Introduction to Statistics
Core Business Unit of Study #

Stage 2
Semester 1
HES2621 Introduction to Biochemistry
HES2631 The Microbial World
Elective 1
Core Business Unit of Study #

Semester 2
HES2626 Biochemistry of Genes and Proteins
HES2636 Microbes in the Environment
Elective 2
Core Business Unit of Study #

Stage 3
Semester 1
HES34021 Advanced Biochemistry
HES34841 Practical Biochemistry
Core Business Unit of Study #
1st Unit of Study of Business Major

Semester 2
HES4626 Biotechnology
HES4646 Biotechnology Research Project
2nd Unit of Study of Business Major
3rd Unit of Study of Business Major
Stage 4
Semester 1
4th Unit of Study of Business Major
5th Unit of Study of Business Major
1st Unit of Study of Business Minor
2nd Unit of Study of Business Minor
Semester 2
6th Unit of Study of Business Major
3rd Unit of Study of Business Minor
4th Unit of Study of Business Minor
Elective 3
* May be replaced by HES1490 Introduction to Chemistry for students without Year 12 chemistry.
** May be replaced by HMS111 Engineering Mathematics 1 if student intends to continue studying mathematics at a higher level.
Electives 1 to 3
Choose two of the following:
HES2540 Forensic and Analytical Sciences or
HES2541 Analytical Chemistry
HES2520 Chemistry 3 or
HES2536 Organic Chemistry
HES2510 Investigative Chemistry Prac 1
HES2615 Investigative Chemistry Prac 2
HES2735 Communicable Disease Control
HES4720 Environmental Management
HBSG200 New Venture Development and Management
Note that credit cannot be obtained for both HES2541 and HES2510. Nor can credit be gained for both HES2526 and HES2515.
The third elective is a free elective.

# Students must choose five core business units of study from:
HBM110 The Marketing Concept
HBN110 Organisation and Management
HBE110 Microeconomics
HBC110 Accounting for Success
HBL111 Law in Global Business
HIT1401 Introduction to Business Information Systems

The above units of study are chosen to ensure pre-requisite study for later year studies has been completed and any professional body requirements that might apply.

Note: For pre-requisite purposes HMS102 Introduction to Statistics is equivalent to HMB110 Quantitative Analysis A and HMB111 Quantitative Analysis B and is completed as part of the Science degree.
IBL, if undertaken, is generally taken between Stages 2 and 3 and consists of:
HSW050 Industry-Based Learning and/or
HSM055 Industry-Based Learning
This optional IBL program is not available to international students.
Note: In addition to the above, students must complete a compulsory unit
HAC0001 Careers in the Curriculum to be awarded the degree.

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2008 VCE Prerequisites: Units 3 & 4 - a study score of at least 20 in English (any) and in Mathematics (any).
All Non-Year 12 students (NONY12) should refer to the VTAC website at: www.vtac.edu.au for further information.
2007 Round 1 Clearly-In ENTER: 82.00 (CSIP), n/a (Fee)

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34241 (CSIP), 34242 (Fee), 34243 (Int, Fee)
For further information, visit the VTAC website at: www.vtac.edu.au

Applicants who believe they will receive an ENTER of at least 85.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swin.edu.au/scholarships

Honours Year
Bachelor of Arts (Honours) [N052]
The Bachelor of Arts (Honours) program provides students with an opportunity to pursue their undergraduate studies to a high level in an additional year of research-oriented study. It gives students a strong base from which to pursue further study or to gain employment that requires high level conceptual, analytic, research and communication skills. Students undertaking the fourth year will expand their knowledge of an area of study to a degree not possible within a three year program.
The program is available to students who have completed all requirements for the three-year Bachelor degree with a relevant major at a high standard. A Bachelor of Arts (Honours) qualification denotes strong academic performance and provides the background required to pursue a range of postgraduate studies.
Most universities require a four-year undergraduate course as a prerequisite to enrolment in masters and doctoral programs. In many cases, an Honours degree is preferred to other forms of fourth year study (e.g., postgraduate diplomas).
For students seeking employment after their undergraduate study, an Honours degree can prove to be an advantage. The fourth year of study includes substantial independent study and skills development in the area of research and project management especially appropriate for students seeking employment in professional and administrative areas.
The Honours program aims to help students develop:
• General intellectual and academic knowledge
• An awareness of current intellectual debates
• Specific academic skills and knowledge appropriate to their discipline
• Ability to design and carry out a program of individual research which contributes to the advancement of knowledge
• Ability to write an extended and coherent academic thesis at a high standard
In contrast to the undergraduate program, the Honours course requires a high degree of initiative and self-direction from students. Students plan, carry out and monitor their studies more actively than in their undergraduate courses. The ability to do this, as evidenced by a Bachelor of Arts (Honours) degree, is one of the special qualities an Honours graduate can claim.

Campus
Hawthorn

Professional Recognition
The Psychology strand of the Bachelor of Arts (Honours) is accredited by the Australian Psychological Society as a fourth year of study in psychology.

Course Duration
One year full-time or equivalent part-time.
Students holding an international student visa are required to study full-time.

Course Structure
To achieve a Bachelor of Arts (Honours) students must complete a range of class requirements depending in which strand a candidate is enrolled. For the thesis units of study, students submit a thesis, which will normally be in the range of 10,000 to 15,000 words. This will be supervised by a member of staff in the area of study.
Final results are given for the year as a whole. Students will be graded as follows (effective 2007):
• First Class Honours (H1) 80%-100%
• Second Class Honours Division A (H2A) 70%-79%
• Second Class Honours Division B (H2B) 60%-69%
• Third Class Honours (H3) 50%-59%

Majors/Minors & Specialisations
• Cultural Studies
• Industry and Community Studies
• Social Science
• Media and Multimedia
• Languages
• Psychology

Units of Study

Cultural Studies strand
Available to students who have majored in Asian Studies, Literature, Media Studies, Philosophy and Cultural Inquiry or Politics.
HAC440 Media and Cultural Studies Seminar A
HAC441 Media and Cultural Studies Seminar B
HAC442 Media and Cultural Studies Thesis A
HAC443 Media and Cultural Studies Thesis B

Industry and Community Studies strand
Available to students who have majored in Australian Studies, Media Studies, Politics or Sociology.
HAI440 Industry and Community Studies Seminar A
HAI441 Industry and Community Studies Seminar B
HAI442 Honours Thesis A Industry & Community Studies
HAI443 Honours Thesis B Industry & Community Studies
HAF445 Issues in the Social Sciences

Social Science strand
Available to students who have majored in Media Studies, Asian Studies, Australian Studies, Politics or Sociology.
HAF440 Social Science Seminar A
HAF441 Social Science Seminar B
HAF442 Social Science Thesis A
HAF443 Social Science Thesis B
HAF445 Issues in the Social Sciences

Media and Multimedia strand
HAMM440 Media and Multimedia Research Seminar
HAMM442 Honours Thesis A (Media and Multimedia)
HAMM443 Honours Thesis B (Media and Multimedia)
plus two electives chosen from:
HET732 Multimedia Development
HET824 Media Theory, DVD and Compositing
HET748 Advanced 3D Animation and Rendering
HAM420 Online and Convergent Journalism
HAL401 Cultural Convergence
HAM422 Creative Writing and New Media

Languages strand
Available to students who have majored in Italian or Japanese.
HAA440 Italian Seminar A
HAA441 Italian Seminar B
HAA442 Italian Thesis A
HAA443 Italian Thesis B
HAA446 Languages Seminar A (Japanese)
HAA447 Languages Seminar B (Japanese)
HAA448 Honours Thesis A (Japanese)
HAA449 Honours Thesis B (Japanese)

Psychology strand
Available to students who have majored in Psychology.

First Semester
HAY453 Advanced Quantitative Methods (12.5 credit points)
HAY454 Psychological Assessment (12.5 credit points)
HAY470 Thesis A (12.5 credit points)
HAY472 Contemporary Psychology (12.5 credit points)

Second Semester
HAY457 Ethical and Professional Issues (12.5 credit points)
HAY456-HAY460 Thesis B (also available in first semester) (25 credit points)
plus one elective chosen from:
HAY473 Current Issues in Social Psychology (12.5 credit points) (subject to availability and demand)

HAY458 Counselling Psychology (12.5 credit points)
HET738 Neuropsychology Methods (12.5 credit points)

Entry Requirements
To be eligible for admission into the Bachelor of Arts (Honours) course, a student must have satisfied the requirements of an undergraduate pass degree with a relevant arts/social science major (normally completed within the last five years), from a university approved by Swinburne.

To be eligible for selection, the student must have achieved an average level of attainment of a credit or better, in an appropriate undergraduate course (and/or range of disciplines) considered by the Faculty of Life and Social Sciences Honours Committee to be acceptable for entry into the Bachelor of Arts (Honours) course. Students who achieve at least two distinctions or better in third year units of study may also be considered.

Please note that offers made are limited by the number of places available, and preference is given to students who have completed their undergraduate pass degree at Swinburne.

Application Procedure
Students interested in the honours program should complete an application form available from the Faculty of Life and Social Sciences (03) 9214 8859 or email lshinfo@swin.edu.au

Bachelor of Health Science (Public and Environmental Health)(Honours) [Z68]
For students seeking employment after their undergraduate study, an Honours degree can prove to be an advantage. The fourth year of academic study includes substantial independent study and skills development in the area of research and project management, and can further enhance student's knowledge and abilities to work effectively in the public and environmental health field, particularly from a research perspective.

Aims & Objectives
The honours year aims to:
• Provide high achieving students with an opportunity to deepen their intellectual understanding of public and environmental health.
• Enhance the research literacy of the environmental health workforce.
• Provide environmental and public health research assistance to government and private sectors.
• Provide a foundation for further studies to PhD level if desired.

Campus
Hawthorn

Career Opportunities
Enhanced employment opportunities in all areas of environmental health.

Professional Recognition
Graduates will be eligible to apply for membership of the Australian Institute of Environmental Health and the Public Health Association of Australia

Course Duration
One year full-time or part-time equivalent.

Course Structure
The course will operate under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed equivalent to one hour of student work per week (comprising classwork and private study/ coursework). The typical students average weekly workload during semesters is therefore deemed to be 50 hours.

Units of Study
Semester 1
HASP309 Social Research Design: Principles and Methods
HASP207 Qualitative Research Methods
HESS700 Honours Project

Semester 2
HESS705 Honours Seminars
HESS700 Honours Project
Entry Requirements
Acceptance into the Honours Program will require completion of a degree with an environmental or public health major from a recognised tertiary institution. A credit average or above in Stage 3 units of study will be required. International students are also eligible to apply.

Application Procedure
Application should be made to the Honours in Public and Environmental Health Co-ordinator or contact the Faculty of Life and Social Sciences on (+61 3) 9214 8859, or e-mail LSSINFO@swin.edu.au, to obtain a direct application form.

Bachelor of Science (Biomedical Sciences)(Honours) [S966]
This program provides an opportunity for selected students, who have achieved a high standard in their major area of study, to continue their undergraduate studies to an Honours level. This Honours course is a recognised point of entry into postgraduate research studies, with many previous Honours graduates, who have obtained higher degrees, being highly sought. Students concentrate on their chosen area, gaining a better understanding of the academic discipline which they study and research techniques specific to that discipline. The requirement to complete a substantial original piece of research for their thesis ensures that Honours graduates develop their abilities to conceptualise problems, devise research strategies and execute individual research work under the supervision of a member of staff with expertise in the area. Students develop their own project ideas, are involved in negotiating project directions with a range of internal and external supervisors and research organizations, and develop project management skills based on previous and current course content, with mentoring and facilitation from project supervisors. These projects ensure all students develop strong awareness and understanding of ethical and social issues associated with research. The involvement of external industry researchers provides an important link between industry and the student's learning and research environment.

The course's strong emphasis on original research prepares students for areas of professional employment in which conceptually, organisational and practical skills are in demand. Graduates have been employed in a variety of relevant areas including research in universities, hospitals and research institutes within the private and public sectors, nationally and internationally.

Aims & Objectives
• To prepare students for professional practice in their chosen area;
• To provide students with the research and analytical skills associated with high quality research;
• To prepare students for the changing workplace and the changing societal context of science by developing their life-long learning skills and flexibility in thought;
• To develop students' communication skills so that they can present their ideas clearly by verbal, written and graphic means;
• To provide students with experience in preparing scientific information for publication in peer-reviewed scientific journals; and
• To prepare students for a career in research.

Campus
Hawthorn

Course Duration
One year full-time.

Course Structure
The Honours course is based on a student workload model of 100 credit points for a full-time academic year. One credit point is deemed equivalent to one hour of student work per week for one semester whether in contact with staff or in private study. The typical student's average weekly workload during semester is therefore expected to be 50 hours.

Total student contact hours (lectures, classes, tutorials, laboratory and field sessions) will vary during academic semesters due to the alternative coursework subject loads. The intensity of the research programs will vary requiring different hours, but the minimum expected contact hours is 24 hours/week.

This program involves two academic semesters of study for one year.

Units of Study

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<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
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<tr>
<td>HET803</td>
<td>HET802</td>
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<tr>
<td>Honours Project 1 (25 credit points)</td>
<td>Honours Project 2(37.5 credit points)</td>
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<tr>
<td>HET707</td>
<td>Choose one of:</td>
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<tr>
<td>Neuroscience Methods (12.5 credit points)</td>
<td>HET738 Neuroendocrinology Methods(12.5 credit points)</td>
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<tr>
<td>HMS770</td>
<td>HET830 Biomedical Research Topics (12.5 credit points)</td>
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<tr>
<td>Statistical Practice (1/2.5 credit points)</td>
<td>HET704 Neuropsychology (12.5 credit points)</td>
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<td>HMS771 Statistical Practice 2 (12.5 credit points)</td>
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Entry Requirements
Entry to this course is available to academically prepared students. These students must have completed all the requirements of an undergraduate (pass) degree such as in Biomedical Sciences, Biomedical Engineering, Biomedical Sciences / Electrical Engineering double degree, or Psychology. A minimum of a credit average in the final year units of study is required.

Application Procedure
Contact the Faculty of Life and Social Sciences on (+61 3) 9214 8859, or e-mail LSSINFO@swin.edu.au, to obtain a direct application form.

Bachelor of Science (Biotechnology/Biochemistry) (Honours) [ESBH056]

The Honours course in Biotechnology at Swinburne is an example of an "add-on" fourth year offering including IBL year program which follows a three-year bachelor degree. The primary focus is on research skills with a mix of advanced theory, professional training, research training, and a research project leading to a thesis. Exceptional students may be able to complete the program in an "accelerated" mode enabling the inclusion of an IBL year in a four year program.

An Honours degree in Biotechnology provides a competitive advantage for employment in research positions and is a requirement for studying at PhD level. The Honours Year is composed of a Lecture Program and a Research Project. The Lecture Program is approximately 13 hours of lectures per semester for the two semesters. The lectures are scheduled within the Semesters of the HED division of the University. Assessment is by a mixture of exam and assignment. The Research Project is expected to be completed during the two semesters of the Honours year. Between 3 and 4 days of most semester weeks are expected to be devoted to the project. Assessment is based on seminar presentations and a final Honours Report.

An overall Honours Graduating is based on 60% of the Project and 40% of the Lecture component.

Aims & Objectives
The objectives of this course is to allow high achieving students to gain a degree with honours in biotechnology.

Students undertaking this course will also be prepared for higher degree studies.

Campus
Hawthorn

Career Opportunities
This course equips graduates for careers in biochemistry and biotechnology related to the medical, health, food and beverage, wine, agricultural, chemical and environmental industries. It is also specifically designed as a pathway into higher research degrees (Masters and PhD).

Professional Recognition
Graduates may apply for membership to the following professional societies:
• Australian Biotechnology Association
• The Australian Society of Biochemistry and Molecular Biology
• Australian Society for Microbiology
• Royal Australian Chemical Institute

Course Duration
One year full-time.
Course Structure
In most circumstances, the Honours course is completed in one year of full-time study after completion of a Bachelor of Applied Science or Bachelor of Science in biotechnology, biochemistry, or an equivalent degree. In this year, students will undertake honours lectures at an advanced level and a research project.

Units of Study
Semester 1
HES5640 Honours Lectures
HES5590 Biotechnology/Biochemistry Honours Project
HES4621 Advanced Biochemistry
HES4641 Practical Biochemistry

Semester 2
HES5640 Honours Lectures
HES5580 Biotechnology/Biochemistry Honours Project
HES4626 Biotechnology

* May be replaced by an approved elective.

Entry Requirements
For students to gain entry into the honours program, a weighted average mark of 65% or greater should have been achieved in the year of study prior to entry. In addition, a suitable honours research project must be identified.

Application Procedure
Application should be made to the Honours in Chemistry and Biotechnology/Chemistry Co-ordinator towards the conclusion of the final year of their course (or at the conclusion of second year for the accelerated program).

Bachelor of Science (Chemistry)(Honours) [2073Y]
The course provides an opportunity for students with a major in chemistry (eg. students who have studied the Bachelor of Science(Biochemistry)Chemistry course, or equivalent) who wish to pursue a chemistry career. The program is also useful for articulating students who have an undergraduate degree in chemistry from another institution and wish to further their career with an honours year at Swinburne. The honours year at Swinburne is well recognised as a pathway to a research career in chemistry, including analytical, colloid, environmental, organic, polymer or surface chemistry. It forms a particularly good stepping-stone to a PhD in chemistry research.

An overall Honours Grading is based on 60% of the Project and 40% of the Lecture component.

Aims & Objectives
The objective of this course is to allow high achieving students to gain a degree with honours in chemistry. Students undertaking this course will also be prepared for further degree studies.

Campus
Hawthorn

Course Duration
One year full-time.

Units of Study
Semester 1
HES5540 Chemistry Honours Lectures
HES5590 Honours Project

Semester 2
HES5540 Chemistry Honours Lectures
HES5590 Honours Project

Entry Requirements
For students to gain entry into the honours program, a weighted average mark of 65% or greater should have been achieved in the year of study prior to entry. In addition, a suitable honours research project must be identified.

Application Procedure
Application should be made to the Honours in Chemistry and Biotechnology Co-ordinator or contact the Faculty of Life and Social Sciences on (+61 3) 9214 8859, or e-mail LSS/INFO@swin.edu.au, to obtain a direct application form.

Bachelor of Science (Psychophysiology)(Honours) [2079Y]
This program provides an opportunity for selected students, who have achieved a high standard in the major area of study, to continue their undergraduate studies to an Honours level. The Honours course is a recognised point of entry into postgraduate research studies, with many previous Honours graduates, who have obtained higher degrees, being highly sought. Students concentrate on their chosen area, gaining a better understanding of the academic discipline which they study and research techniques specific to that discipline. The requirement to complete a substantial original piece of research for their thesis ensures that Honours graduates develop their abilities to conceptualise problems, devise research strategies and execute individual research work under the supervision of a member of staff with expertise in the area. Students develop their own project ideas, are involved in negotiating project directions with a range of internal and external supervisors and research organizations, and develop project management skills based on previous and current course content, with mentoring and facilitation from project supervisors. These projects ensure all students develop strong awareness and understanding of ethical and social issues associated with research.

The course's strong emphasis on original research prepares students for areas of professional employment in which conceptual, organisational and practical skills are in demand. Graduates have been employed in a variety of relevant areas including research in universities and research institutes within the private and public sectors, nationally and internationally.

Aims & Objectives
The course has the following objectives:

- To prepare students for professional practice in their chosen area;
- To provide students with the research and analytical skills associated with high quality research;
- To prepare students for the changing workplace and the changing societal context of science by developing their life-long learning skills and flexibility in thought;
- To develop students' communication skills so that they can present their ideas clearly by verbal, written and graphic means;
- To provide students with experience in preparing scientific information for publication in peer-reviewed scientific journals; and
- To prepare students for a career in research.

Campus
Hawthorn

Career Opportunities
The course's strong emphasis on original research prepares students for areas of professional employment in which conceptual, organisational and practical skills are in demand. Graduates have been employed in psychophysiological areas of hospitals and in research areas of universities and research institutes within the private and public sectors.

Course Duration
One year full-time. Part-time study over two years may be granted to students for reasons of health, financial support and family commitments.

Course Structure
The Honours course is based on a student workload model of 100 credit points for a full-time academic year. One credit point is deemed equivalent to one hour of student work per week for one semester whether in contact with staff or in private study. The typical student's average weekly workload during semester is therefore expected to be 50 hours.

Total student contact hours (lectures, classes, tutorials, laboratory and field sessions) will vary during academic semesters due to the alternative coursework subject loads. The intensity of the research programs will vary requiring different hours, but the minimum expected contact hours is 24 hours/week.

This program involves two academic semesters of study for one year.

Units of Study
Semester 1
HAY453 Advanced Quantitative Methods (12.5 credit points)
NET707 Neuroscience Methods (12.5 credit points)
HET803 Honours Project 1 (25 credit points)
**Semester 2**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Points</th>
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<tr>
<td>HET802</td>
<td>Honours Project 2 (37.5 credit points)</td>
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</tbody>
</table>

Choose one of:

- HET704  Neurophilosophy (12.5 credit points)
- HET738  Neuropsychology Methods (12.5 credit points)

**Entry Requirements**

Entry to this course is available to academically prepared students. These students must have completed all the requirements of an undergraduate (pass) degree such as in Biomedical Sciences, Biomedical Engineering, Biomedical Sciences / Electrical Engineering double degree, or Psychology / Psychophysiology, from Swinburne University of Technology or equivalent. A minimum of a credit average in the final year units of study is required.

**Application Procedure**

Contact the Faculty of Life and Social Sciences on (+61 3) 9214 8859, or e-mail LSSINFO@swin.edu.au, to obtain a direct application form.

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**Electives Plus Sequences**

Electives plus sequences provide Swinburne degree students with options to broaden their career skills and strengthen their employability by selecting from units of study outside their degree discipline.

Students can choose to study Electives Plus sequences of up to three units from one of the following themes:

- **Design: Process and Strategy**
- **Effective Communication**
- **Enterprising Marketing**
- **Establishing and Running a Business**
- **Information Orientation and Knowledge Management**
- **Language Practice and Culture**
- **Multimedia & Web Development**
- **Sustainability**
- **The Networked Economy**
- **Undergraduate Research Skills**

Electives Plus sequences are available in all Swinburne degree programs subject to timetabling constraints, with the exception of double degree programs, specialist double major degrees, and where entry has been approved with advanced standing.

**Design: Process and Strategy**

This sequence of units has been developed to introduce non-designers to the importance of design and design thinking in contemporary culture and business environments. Students will explore aspects of contemporary design practice, the process of making and communicating through digital media, and the development and articulation of innovation, with a focus on employing design in a wide business context. Students undertaking this elective sequence will engage in experiential project-based learning and workshops, and develop critical, practical and key transferable skills highly valued in the workplace.

- **HDC004**  Digital Design
- **HDC005**  Contemporary Design Issues
- **HDC006**  Managing Design

**Effective Communication**

This elective sequence is designed to develop students’ oral and written communication skills to a high level and foster teamwork skills.

- **HAM113**  Professional Communication Practice
- **HAAH103**  Critical Thinking
- **HAT201**  Writing Technical and Business Reports

**Enterprising Marketing**

This elective sequence is suitable for students wishing to grasp the basics of marketing, with an emphasis on being entrepreneurial.

- **HBM110**  The Marketing Concept
- **HBM222**  Marketing Planning
- and one of the following:
  - **HBM220**  Market Behaviour
  - **HBM331**  Services Marketing and Management
  - **HBM330**  Marketing Innovation Management
  - **HBM333**  Communications Strategy

**Establishing and Running a Business**

This elective sequence is proposed as being suitable to any student who wants an overview of business; who intends to start a business; or expects to work as a sole contractor.

- **HBSG200**  New Venture Development and Management
- **HBC110**  Accounting for Success
- **HBSG300**  Managing and Developing a Small Business
Information Orientation and Knowledge Management
This sequence introduces the basics of information systems in organisations and allows students to pursue, from either a technical or more analytical perspective, how information and knowledge resources can be exploited and directly contribute to increased efficiency and effectiveness in contemporary organisations, supported by developments in ICT.
HIT1401 Introduction to Business Information Systems
and two of:
HIT1402 Database Analysis and Design
HIT3413 Business Intelligence
HIT3078 Knowledge Management

Language Practice and Culture
The Italian and Japanese language sequences assist Swinburne students to become multilingual and international in outlook.
Italian Stream
HAA181 Italian and Its Language 1*, or
HAA184 Advanced Italian 1A**
HAA182 Italian and Its Language 2*, or
HAA165 Advanced Italian 1B**
HAA281 Italian 2A**, or
HAA284 Advanced Italian 2A**
Japanese Stream
HAJ107 Introductory Japanese 1A*, or
HAJ131 Advanced Japanese 1A**
HAJ108 Written Japanese 1B*, or
HAJ132 Advanced Written Japanese 1B**
and either:
HAJ109 Spoken Japanese 1B*, or
HAJ133 Advanced Spoken Japanese 1B**, or
HB1391 Pacific Rim Business Study Tour
* Beginner's level
** Advanced level

Multimedia & Web Development
This sequence provides the ability to develop dynamic websites via two alternative streams:
• The technically-focused Development stream introduces the technology of the Internet and World Wide Web in order to develop an understanding of the technologies and techniques required to develop usable data-aware websites.
• The Multimedia stream provides a general introduction to the practice of multimedia creation, and then focuses on web page development, before moving onto learning how to make websites more interactive using web scripting languages.
Multimedia stream
HET215 Multimedia Applications
HET113 Internet and WWW 1
HET123 Internet and WWW 2
OR
Development stream
Students whose programs include HIT1307 or HIT1403 must choose this option:
HIT1307 Internet Technologies
and two of:
HIT2092 Advanced Web Technologies
HIT2316 Usability
HIT3093 XML Technologies

Sustainability
The new Sustainability theme Elective Plus sequence will introduce the issues of sustainability from a number of perspectives and provide some basic scientific and technical principles to a complex and challenging issue.
Select three of the following units:
HE101 Climate Change
HES1115 Sustainable Design
HES2719 Built and Sustainable Communities
HES4720 Environmental Management
HDC008 Design Systems and Services

The Networked Economy
This sequence in business management is focused on enterprise design, people and commercial performance in the context of eCommerce and networked economy. Each unit takes a multi-disciplinary approach, while having a different disciplinary theme, and paying attention to building experience and skills that will enhance employment prospects.
LEB105 eCommerce Fundamentals
LEB213 Managing People in the Networked Economy
LEB313 eEnterprise Performance Measurement

Undergraduate Research Skills
Graduates from many disciplines need to understand the logic of research if they are to flourish in the workplace. Some of them will also need to be able to design and carry out research. This elective sequence is made up of two alternative streams:
• The social sciences stream is specifically designed for social researchers, nevertheless the underlying logic means that the sequence will be useful to a wide range of students.
• The physical science/technology stream allows high-performing students to participate in the creative and innovative application of basic science and engineering fundamentals to research and development, while working with an established Swinburne research group under individual expert guidance and mentoring.
Social Sciences stream
HASP300 Social Research Design: Principles and Methods
HASP307 Qualitative Research Methods
and one of:
HASP303 Research Project, or
HMA105 Practical Statistics
Physical Science/Technology stream
HET101 Research and Development Project 1
HET201 Research and Development Project 2
HET305 Research and Development Project 3
* Entry restricted to high performing students.
National Institute of Circus Arts (NICA)

The National Institute of Circus Arts (NICA) is a centre of teaching excellence for professional education and training in contemporary circus arts. NICA has been incorporated as an independent company of Swinburne University of Technology. The curriculum was developed following extensive consultation with the circus and physical theatre industries and has operated successfully for six years. The current Bachelor of Circus Arts is a specific agreement between the TAFE Division and Higher Education Division of Swinburne University of Technology and the Federal Government through the Department of Communications, Information Technology and the Arts (DOCITA).

Further Information

Telephone: +61 3 9214 6975
Fax: +61 3 9214 6574
Email: info@nica.com.au
Website: nica.com.au

Bachelor of Circus Arts [CA10]

The National Institute of Circus Arts (NICA) is a centre of teaching excellence for professional education and training in contemporary circus arts. NICA has been incorporated as an independent company of Swinburne University of Technology. The curriculum was developed following extensive consultation with the circus and physical theatre industries and has operated successfully for six years. The Bachelor of Circus Arts is a vocationally oriented degree aimed at providing talented performing artists with the skills, knowledge and creativity to take their place on a national and world stage in the field of contemporary circus and physical theatre. The degree also prepares artists to manage their own artistic careers in the world arena by providing: sound arts business knowledge, leadership skills for the arts arena, research and academic skills and opportunities for innovation and experimentation with style and form. Evidence of graduates’ destinations demonstrates that they are employed as professional circus artists.

The current Bachelor of Circus Arts is a specific agreement between the TAFE Division and Higher Education Division of Swinburne University of Technology and the Federal Government through the Department of Communications, Information Technology and the Arts (DOCITA).

Aims & Objectives

The Key Objectives of the Bachelor of Circus Arts are:

- To produce graduates who are professional artists prepared to take their places at a national and international level in professional circus and physical theatre industry in a range of contexts and become leaders in the next generation of circus professionals;
- To produce graduates who have a high level of academic understanding of circus both current and historic;
- To produce graduates who are able to integrate modern business plans and strategies into their own work in the circus industry;
- To produce graduates who can capitalise on the demand for circus performers locally and internationally.

Skills developed during the course will include:

- Basic training: flexibility, strength, conditioning.
- Circus skills: aerial, acrobatics, manipulation, balance.
- Performance skills: improvisation, clown, character, movement, dance, voice, act creation.
- History and culture of circus.
- Circus business and career management.
- Health and safety in the circus environment.

Campus

Prahran

Career Opportunities

Formal training in circus skills opens up exciting opportunities for a future career. Graduates are highly employable, knowledgeable and creative. They have found careers nationally and internationally. NICA training can lead to work in contemporary circus, traditional circus, social circus, stunt work, corporate entertainment, festivals, teaching and other sectors of the arts industry. New companies are emerging as NICA graduates find their place in Australia’s cultural landscape.

Professional Recognition

The National Institute of Circus Arts is recognised both nationally and internationally as a centre for excellence in training. NICA is a current member of the Australian Round Table for Arts Training Excellence (ARTATE).

NICA is accredited as a full member of the Fédération Européenne des Écoles de Cirque Professionnels (Federation of European Professional Circus Schools). NICA is a non-European participant in the Education and Culture, Leonardo da Vinci project. This is a European Commission funded three-year project which is conducting a pedagogical mapping exercise to establish standards of teaching practice for teachers in professional circus schools internationally.

NICA is the South East Asian training partner for Cirque du Soleil and has strategic alliances and training partnerships with: Namir Acrobatic Troupe, Shanghai Circus School, Belfast Community Circus and Taiwan National Academy of Performing Arts.

Course Duration

Three years full-time.

Course Structure

The course will operate under a student workload model based on 100 credit points for a full-time academic year. The contact hours in the Bachelor of Circus Arts are higher than other degrees because of the intensive education process. The acquisition and performance of circus skills require continual repeated practice in order to achieve and maintain the level of fitness, conditioning, strength and technical expertise required to meet international standards of excellence.

The degree is based on vertical integration of skills and methodology. These skills are introduced in the embedded two-year TAFE award then built on in the Bachelor year. Experiential learning is embedded throughout the program.

Students must complete all subjects to complete the degree.

Each subject has a study sequence of either 10, 12 or 20 weeks per semester. The number of weeks of duration is dependent on the level of intensity of contact hours required for the practice.

Units of Study

HNCA301 Circus Technique & Specialisation - Refining the Technique
HNCA302 Performance & Dance - The Performer and the Audience
HNCA303 Performance Practice - The Innovative Circus Ensemble
HNCA304 The Business of Circus - Strategic Planning & Entrepreneurship
HNCA305 Circus Techniques & Specialisation - Innovation & the Circus Specialty
HNCA306 Performance & Dance - Performance Techniques
HNCA307 Performance Practice - The Professional Circus Act
HNCA308 The Business of Circus - Marketing the Artist and the Act

Entry Requirements

Entry into NICA is by audition, interview and physiotherapy assessment. Students must apply to audition. International applicants and Australians who cannot reach audition venues should apply by video. Video application requirements may be downloaded at www.nica.com.au

Indigenous students are encouraged to apply and may contact the Indigenous Support Officer at Swinburne University, Vicki Armstrong (+613) 9214 6824 varmstrong@swin.edu.au for specific advice.

Application Procedure

Prospective students must complete an application form, attend an audition and interview. Details and application/audition registration forms can be obtained from the NICA website: http://nica.com.au
Unit of Study Details

All unit of study descriptions are contained in this chapter. All units of study are allocated an alphanumeric code and are listed here in code order.

The alpha code is made up of two or three letters, indicating the discipline area, followed by three or four numbers. The first digit of the numeric code indicates the academic level: Stage 1, Stage 2, Stage 3, Stage 4 and Stage 5.

Textbooks and recommended readings

Textbooks are material essential to the subject. Due to the frequency with which individual publications become outdated, and are superseded, textbooks and recommended readings are not listed for all units of study.

Students are advised not to purchase textbooks or recommended readings until classes commence, unless they have consulted the lecture in charge of the unit.

HAA119 Post-War Italy

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Language of Delivery: Italian; Lectures and Tutorials • Assessment: Class Assignment 25%; Final Exam 40%; Presentation 25%; Class Participation 10%

A unit of study in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

The aim of the unit is to make students aware of some of the influences - internal, European and international - that have shaped Italy into a modern industrial nation. It develops an understanding of contemporary Italy by tracing its social, political and economic history from the defeat of fascism through to its entry in the European Union and Monetary System and finally into the 21st century.

Content

The unit will explore the history as well as themes which delineate the turbulent political period following the defeat of fascism in 1943 through to the eve of the 21st century.

A brief historic background of the period includes:

• The founding of the new Italian Republic in 1948.
• Effects of the Cold War.
• The consolidation of the Christian Democracy in power.
• The ‘economic miracle’ of the 1950s and 1960s.
• The student protest and ‘Hot Autumn’ of the late 1960s.
• The rise (and fall) of terrorism.
• The crisis of the 1970s through to the stability of the late 1990s.
• Political and social developments into the 21st century like the rise of Berlusconi.

The themes explored include:

• The role of the church.
• The social issues that divided Italy (divorce and abortion).
• The role of women in modern Italy.
• The Mafia.
• The South.
• Youth culture and education.
• The System of corruption.
• The role of immigration.
• The current state of the economy.
• The current state of the economy will be covered.

References

Reading/tutorial guide for HAA119 Post-War Italy.

HAA181 Italy and Its Language 1

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil • Conquisite: Nil • Teaching methods: Language of Delivery: Italian with English explanations as necessary. Lecture and Tutorial • Assessment: Two class tests 30%, Civilisation examination 15%, Attendance 10%, Language homework 10%, Final examination 35%.

A unit of study in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

This unit is a practical introduction to the Italian language and culture for beginners. The unit will enable students to develop the ability to use basic Italian effectively, by developing proficiency in the following language skills: understanding spoken and written Italian, speaking and writing Italian. It will also enable students to acquire an insight into the culture and civilisation of Italy and the Italian way of life.

Content

The language program is based around the text In Giro per l'Italia, a language learning course which develops grammatical as well as oral and aural skills. The culture component will familiarise students with a general knowledge of facts about Italy and provide them with an understanding and an appreciation of the Italian way of life.

Textbooks

Hougazz, L, HAA181/HAA185 - Italy: A Cultural Experience (available from Swinburne Bookshop)

References


HAA182 Italy and Its Language 2

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HAA181 or approved equivalent. • Corequisite: Nil • Teaching methods: Language of Delivery: Italian with English explanations as necessary. Lecture and Tutorial • Assessment: One class test 20%, Oral test 10%, Final language examination 45%, Language homework 10%, Civilization examination 15%.

A unit of study in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

The unit extends the work carried out in HAA181. The unit aims to enable students to develop the ability to use basic Italian effectively, by developing proficiency in the following language skills: understanding spoken and written Italian, speaking and writing Italian. It will also enable students to acquire an historical perspective of the society and culture of modern Italy.

Content

The program is based on the text In Giro per l'Italia, a language learning course which develops grammatical as well as oral and aural skills and is structured to suit different learning needs. The aim of the culture component is to familiarise students with a general knowledge of Italian history and provide them with an understanding and an appreciation of Italian culture.

Textbooks

Hougazz, L, HAA181/HAA185 - Italy: A History in Brief (available from Swinburne Bookshop)

References


HAA184 Advanced Italian 1A

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: VCE Italian or an approved equivalent • Teaching methods: Language of Delivery: Italian with English explanations as necessary. Lecture and Tutorial • Assessment: Class Grammar Tests 40%, Applied Language Presentation 45%, Italian Culture Test 15%
Aims & Objectives

This unit aims to build on the skills which students already possess to develop their proficiency from VCE studies in the speaking, understanding and writing of standard Italian. It also aims to introduce students to an appreciation of Italian society and culture by exposing them to the contemporary Italian language and a general contemporary culture component. HAA184 builds on the skills which students already possess to develop their proficiency from their VCE studies in the speaking, understanding and writing of standard Italian. It also introduces students to an appreciation of Italian society and culture through the Applied Language component in addition to a general Italian Culture component.

Student should be able to:
- Read, write, understand and speak advanced Italian.
- Comprehend, communicate and apply grammatical rules in a written and oral form.
- Discriminate between the different components of the structure of the language.
- Identify and discuss briefly issues of a cultural nature.

Content

Two hours of grammar content will be shared between the treatment of the text Insieme. One lecture a week of the HAA181 and HAA184 courses will be devoted to the Italia: Our World Your World component. The course will be delivered in English and its aim is to familiarize students with a general knowledge of facts about Italy and provide them with an understanding and an appreciation of the Italian way of life. The following topics will be briefly covered during the semester: The land: geography; North/South issue; Standard language/Dialects; way of life, festivities; Italian education system; Italian Literature.

In addition two hours a week will be dedicated to the Applied Language component. This component aims to extend the student’s language competence by bringing him/her in contact with the contemporary Italian language as it is used by various media and in particular contexts. Students will be exposed to Italian written texts (short stories and poems), Italian films and music based around certain contemporary themes.

Textbooks

HAA184 Advanced Italian 1A Subject Reader (available from Swinburne Bookshop).
HAA181/HAA184 Course Guide: Italia: it's our world, it's your world. (available from Swinburne Bookshop).

References

Bryant, A (1968) The Italians: how they live and work, David and Charles.
Grindrod, M (1964) Italy, Oxford Univ. Press.

HAA185 Advanced Italian 1B

12.5 Credit Points • 1 Semester • 5 Hours per Week • Prerequisite: HAA184 Advanced Italian 1A • Corequisite: N/A • Teaching methods: Language of Delivery: Italian with English explanations as necessary. Lecture and Tutorial. • Assessment: Class test 15%, Oral test 10%, Culture test 15%, Contemporary Italian presentation 5%, Contemporary Italian test 20%, Final language examination 25%, Attendance and homework 10%.

A unit of study in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

The unit of study aims to further the students' knowledge of Italian and develop linguistic competence in the areas of pronunciation, morphology and syntax, vocabulary and idiom. The understanding of long and complex verbal structures is particularly emphasised, together with the acquisition of a wider vocabulary range. The study of short stories aims to enable students to become familiar with the thoughts and styles of different authors through which one acquires a better understanding of modern Italy. The course also provides a historical perspective to the society and culture of modern Italy.

Content

The program is based on the text Crescendo. The applied language program is on a selection of modern topics selected by lecturer. The aim of the culture component is to familiarise students with a general knowledge of Italian history and provide them with an understanding and an appreciation of Italian culture.

Textbooks

Italiano, F & Marchegiani Jones, I, Crescendo, Boston, Thomson Heinle, 1995. Hougaz, I, HAA181/HAA185 - Italy’s History in Brief (available from Swinburne Bookshop)

References


HAA281 Italian 2X

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HAA182 Italian and Its Language 2 • Corequisite: NIL • Teaching methods: Language of Delivery: Italian with English explanations as necessary. Lecture and Tutorial. • Assessment: Grammar test 15%, Final grammar test 25%; Exercises/ oral examination 10%; Language extension final assignment 40%; Presentation 10%.

A unit of study in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

The course is structured in two sections:
- The first section (2 hours) aims at consolidating and deepening students' proficiency through advanced grammatical exercises, analysis of texts and styles in Italian. The students' active and passive vocabulary is improved by exposing them to specific grammatical structures and exercises. This section will be flanked by a one-hour tutorial work.
- The second section (2 hours) will focus on Applied Language. Students will be exposed to four different language regimes consisting in reading texts & text analysis, spoken texts (video/audio), and written text (active self-production and presentation).

Content

The course involves 5 contact hours per week. Three hours will be devoted to grammar, conversation and language extension work emphasizing a variety of linguistic registers and specific languages using different texts and theories and will be based on the text Oxford. The remaining two hours will be allocated to an Applied Language component program and will focus on different language regimes by exposing students to authentic materials from different periods, in different linguistic registers and in different forms.

Students are expected to attend all scheduled classes for the unit.

Reading Materials

Grammar text to be advised.
A booklet for the Applied Language is available for purchase at the Swinburne Bookshop.

Recommended Reading

HAA282 Introductory Business Italian 2Y
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAA281 Italian 2X • Corequisite: Nil • Teaching methods: Language of Delivery: Italian with English explanations as necessary. Lecture and Tutorial. • Assessment: Class assignment 30%; Oral Reports 30%; Final Exam 40%.

A unit of study in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts and Bachelor of Social Science.

Aims & Objectives
The unit aims to expose students to introductory aspects of the Italian economy, and to basic Italian business situations and language as used in contemporary Italy.

Content
The unit provides background information on the Italian economy and its role within the European Union. The language tutorials develop the appropriate language required in basic Italian business communications.

Textbooks

References

HAA283 Italian ZZ
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HAA281 Italian 2X • Corequisite: Nil • Teaching methods: Language of Delivery: Italian with English explanations as necessary. Lecture and Tutorial. • Assessment: Grammar test 15%, Final grammar examination 25%, Homework/ oral examination 10%, Applied language final assignment 40%, Presentation 10%.

A unit of study in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
The unit is a sequence to HAA281 and aims to further the students' linguistic competence in the areas of pronunciation, morphology and syntax, vocabulary and idiom. The understanding of long and complex verbal structures is emphasised, together with the acquisition of a wider vocabulary range. The study of short stories aims to enable students to become familiar with the thoughts and styles of different authors, through which one acquires a better understanding of modern Italy.

Content
The first part of the program aims at consolidating and deepening students' proficiency in the Italian language. It relates to grammar and is based on the text In Giro per l'Italia. The course reinforces all fundamental Italian grammar structures, provides review exercises that combine structures and vocabulary. This section is flanked by a one-hour tutorial. The second part of the program focuses on a selection of applied language texts aimed at developing a high-level spoken and written style and encourages students to interact with each other, sharing opinions about today's Italy.

Textbooks

References

HAA284 Advanced Italian 2A
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HAA185 Advanced Italian 1B or approved equivalent • Corequisite: Nil • Teaching methods: Language of Delivery: Italian with English explanations as necessary. Lecture and Tutorial. • Assessment: Grammar Test 15%; Final Grammar Exam 35%; Applied Language Test 30%; Oral presentation 20%.
A Stage 2 unit of study in the Advanced stream of the major in Italian Studies.

Aims & Objectives
The unit aims to consolidate and deepen students' proficiency through advanced grammar exercises and to augment their active and passive vocabulary through conversation and the study of texts in various registers and styles.

Textbooks

References
Il Nuovo Dizionario Garzantini, Garzanti, Italy (1088 pages).

Recommended Reading

HAA284 Advanced Italian 2A - Applied Language (available in the Bookshop)

HAA285 Introductory Business Italian 2B
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAA284 Advanced Italian 2A • Corequisite: Nil • Teaching methods: Language of Delivery: Italian with English explanations as necessary. Lecture and Tutorial. • Assessment: Class assignments 30%; Oral Reports 30%; Final Exam 40%.

A unit of study in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
The unit aims to expose students to introductory aspects of the Italian economy, and to basic Italian business situations and language as used in contemporary Italy.

Content
The unit provides background information on the Italian economy and its role within the European Union. The language tutorials develop the appropriate language required in basic Italian business communications.

Textbooks

References
Aims & Objectives
The unit of study aims to consolidate and deepen students' proficiency through advanced grammar and grammatical exercises. The program also focuses on different language theories by exposing students to authentic materials from different periods, in different linguistic registers and in different styles and forms.

Content
Students' proficiency is extended through advanced grammatical competence and regular grammatical exercises. The program also focuses on different language theories by exposing students to authentic materials from different periods, in different linguistic registers and in different styles and forms.

Textbooks
HAA286 Advanced Italian 2B - Applied Language (available in the Bookshop).

Recommended Reading

Aims & Objectives
This unit aims to provide a comparison between the four major European nations (Germany, France and Britain and Italy) in their march towards European Union. The unit is designed to expose the issues, the politics and policies adopted and the points of reference of the countries mentioned in how they confront the issues of the 21st century.

Content
The unit will explore in a chronological as well as thematic basis the key events which have shaped four European countries into a modern industrial nation since the Second World War. The unit will begin tracing the turbulent political period following the Second World War through to the beginning of the 21st century. The significant events that will be touched on include:

• Post-War reconstruction.
• The Marshall Plan.
• The ‘Cold War’ and its manifestation in Europe.
• The economic growth of the 1950s and 1960s.
• The student and worker protests of the late 1960s.
• The crisis of the 1970s and the return to stability in the late 1980s.
• The growing European integration and the new challenges for the four countries is examined in this comparative study.

References

Aims & Objectives
The first part of the program aims to extend and consolidate students' proficiency through advanced grammatical exercises. The second part of the program aims to expose students to authentic texts, films and television programs in Italian.

Content
The course consists of grammar revision, conversation and language extension work emphasising a variety of linguistic registers and sectorial languages.

Textbooks
A booklet will be made available for the Applied Language component.

References
independently find a topic on which to work during the semester. The emphasis lies on the ability to conceptualize a project, underlining why the topic has been chosen and what are the main questions that the students want to see addressed. This object clearly targets the students’ ability to critically justify the choice of a topic asking them to give reasons for its importance. The emphasis here lies on manifesting confidence and being able to argue about a specific topic.

The structure of the unit is such that students will be exposed to tasks of data collection and analysis, writing a report or formulating and conducting interviews in Italian. The final result will illuminate some aspects of what it means being a researcher since the implications of this activity will enable student to develop a critical sense of responsibility.

The independence with which students will have to research a topic, write a final report and argue about their findings will prepare them for similar exercises and task in their professional carrier.

**Content**

Students will select and carry out a research project on a topic of Italian culture. The unit aims to promote student research skills in the Italian cultural, social, political, historic and economic environments. Students will be supported and supervised appropriately and they will be encouraged to research a topic in depth and present their findings in a written and oral form.

Students may spend time in a selected organisation. Students will be required to report regularly to the subject convenor and discuss their proposed topic with him/her.

**References**


**HAA387 Advanced Business Italian**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAA282 Introductory Business Italian 2Y or HAA285 Introductory Business Italian 2B • Corequisite: Nil • Teaching methods: Language of Instruction: Italian with English explanations as necessary. Seminars/Tutorials. • Assessment: Class test 20%, Final examination 40%. Three written reports 30%, Attendance and participation 10%.

A unit of study in the Bachelor of Business/Bachelor of Arts (Italian) , Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

**Aims & Objectives**

The unit of study aims to develop students’ proficiency in the use of Italian business language in contemporary Italy, increase students’ appreciation of the Italian business environment and raise their awareness of the Italian economic and business systems.

**Content**

The unit of study provides a wide range of authentic materials and business-related texts. Emphasis is placed on the development of speaking, reading and writing skills relevant in a business context. A wide range of authentic materials is used to expose students to different types of business language registers.

**Textbooks**


**References**


**HAA388 Contemporary Italy**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAA283 Italian Z or HAA286 Advanced Italian 2C • Corequisite: Nil • Teaching methods: A two-hour lecture every week and a tutorial of one hour. • Assessment: Newspaper oral or written Reports 20%; Final Oral Presentation 30%; Final Test 40%; Attendance and Participation 10%.

A unit of study in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

**Aims & Objectives**

The aim of the course is to gain greater understanding of contemporary Italian issues by exposing students to current articles drawn from the Italian media. Students will gain competence in useful vocabularies for analyzing and discussing the contemporary Italian society and they will be exposed to specific types of Italian sectoral language e.g. socio-economic, environmental phrasology, through work on texts taken from Italian newspapers, magazines, and journals. Students may also have the opportunity to hear guest speakers discuss their area of expertise and will be invited to contribute and participate to all classes. It is expected that all lectures, class discussions and seminar presentations will be conducted in Italian, limiting the use of English to the explanation of particularly difficult points.

At the completion of this unit students should be able to:

- Read Italian newspapers, comprehend the issues presented and formulate an opinion on the issues discussed.
- Be competent in understanding Italian sectoral language used in newspapers and magazines.
- Present a lengthy class seminar in Italian demonstrating competence in the Italian language and culture, analyzing and discussing issues relevant to contemporary Italian society (see assessment).
- Deliver orally, brief reports to the class, in Italian, on the content of newspaper articles.
- Write reports in Italian.
- Speak competently about and critique issues dealing with contemporary Italy.

**Content**

The unit concentrates on aspects of Italian society (the family, women, youth), Some of the issues raised include immigration, drugs and AIDS, the environment, the education system, the health system. All lectures, class discussions and seminar presentations are conducted in Italian.

**Textbooks**

Hougaz, L (ed), Course Guide: HAA388 Contemporary Italy • 2005 PART 1 and PART 2. (Available at Swinburne University Bookshop).

**References**


**HAA440 Italian Seminar A**

25 Credit Points • 1 Semester • 2 Hours per Week (plus up to 3 hours in supplementary session) • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Seminars, lectures • Assessment: Presentation, Written assignment, Research Methodology assessment. A unit of study in the Bachelor of Arts (Honours) - Languages Strand.

**Aims & Objectives**

To increase students’ proficiency in the Italian language; to equip students to undertake research for their thesis; to give students a greater understanding of the cultural, political and social aspects of Italy.

**Content**

Fortnightly seminar conducted in Italian. These sessions will provide students with oral language maintenance opportunities and a forum in which to explore aspects within Italian culture, politics and society. Students are to attend research methodology seminars in Social Science Seminar A, Media and Cultural Studies Seminar A, HASP309 Social Research Design; Principles and Methods or HASP307 Qualitative Research Methods, according to research proposal.

**Reading Materials**

Texts will be selected from the following, according to student’s research proposal:


HAA441 Italian Seminar B
25 Credit Points • 1 Semester • 2 Hours per Fortnight (plus up to 3 Hours per Week in Social Science or Media and Cultural Studies) • Hawthorn • Prerequisite: HAA440 • Corequisite: Nil • Teaching methods: Seminar discussions and language instructions • Assessment: Presentation in Italian, Major assignment

A unit of study in the Bachelor of Arts (Honours) - Languages Strand

Aims & Objectives
To increase students’ proficiency in the Italian language and to give students a greater understanding of the cultural, political and social aspects of Italy.

Content
Fortnightly seminars conducted in Italian. The sessions will provide students with oral language maintenance opportunities and a forum in which to explore aspects within the Italian culture, politics and society.

Students are to attend research methodology seminars; either HAF441 Social Science Seminar B or HAC441 Media and Cultural Studies Seminar B.

Reading Materials
Texts will be selected from the following, according to student’s research proposal:
- Benini, S. Bad, Feltrinelli, Milano, 1996.
- Belloccchio, M. L’Ora di Religione, (Film), 2002.
- Moravia, A. La Noia, Bompiani, Milano, 1966.
- Moretti, N. La Stanza del Figlio, (Film), 2002.
- Salvatore, G. Io Non Io Paura, (Film), 2003.

HAA442 Italian Thesis A
25 Credit Points • 1 Semester • 1 Hour per Week (consultation with supervisor) • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Consultation with supervisor • Assessment: Evidence that the student is working systematically on a thesis (12,000 - 15,000 words if written in Italian, 10,000 - 12,000 words if written in English). Work is not assessed until completion of Thesis B.

A unit of study in the Bachelor of Arts (Honours) Languages Strand

Aims & Objectives
The aim of Thesis A is to introduce students to research methods in their field of enquiry and to formulate a research project proposal for the final thesis. The proposal is developed in conjunction with a supervisor. The objective is that through development of their own research project the student develops the capacity to evaluate existing research and ideas and to develop meaningful research questions. The research project can take a number of forms depending on the student’s area of interest. Thus an additional objective is for the student to develop the capacity to plan their research.

Content
Students work with their thesis supervisors on their chosen research topics.

Reading Materials
Discipline specific reading as advised by thesis supervisor.

HAA443 Italian Thesis B
25 Credit Points • 1 Semester • 1 Hour per Week (consultation with supervisor) • Hawthorn • Prerequisite: HAA442 • Corequisite: Nil • Teaching methods: Consultation with supervisor • Assessment: Thesis 12,000 - 15,000 words if written in English or 10,000 - 12,000 words if written in Italian (continued from Thesis A).

A unit of study in the Bachelor of Arts (Honours) Languages Strand

Aims & Objectives
The aim of Thesis B is for the student to complete their research thesis. The main objective is to give the student practical training in research through execution of the project. The student carries out every phase of the project from initial planning and ethics approval to final analysis and interpretation of findings. An additional objective is for the student to develop skills in reporting their research in the form of a thesis. This deepens the student’s capacity for clear and concise communication in written form.

Content
Students work with their thesis supervisors on their chosen research topics.

Reading Materials
Discipline specific reading as advised by the thesis supervisor.

HAC0001 Careers in the Curriculum
0 Credit Points • 1 Semester • 1 Hour per week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Class • Assessment: Assignment (job application and introduction letter).

A unit of study in all courses within the Faculty of Life and Social Sciences.

Aims & Objectives
To introduce students to the techniques for successfully gaining desired employment and the skills necessary for effective career planning and career management.

Content
- Identification of skills and values.
- Writing a winning resume.
- Writing cover letters.
- Networking, graduate attributes, employer expectations.
- Interview theory.
- Interview practice.
- Topic selected in consultation with Faculty, guest speakers.
- Further selection processes.
- Career Action Plan.

Reading Materials

HAC440 Media and Cultural Studies Seminar A
25 Credit Points • 1 Semester • 3 Hours per Week (up to 3 additional hours per week in supplementary classes may be required) • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Seminars • Assessment: Two essays
A unit of study in the Bachelor of Arts (Honours) - Cultural Studies Strand

Aims & Objectives
The aim of this unit of study is to introduce students to the whole range of recent developments in cultural and social theory. It is integrated by taking the breakdown of modernism and the emergence of the postmodern condition as a unifying theme, and investigates the most significant developments in cultural and social theory as a means to make intelligible and to come to terms with and to respond to this breakdown.

Content
Theories of semiotics, language, narrative, texts, discourse and ideology will be examined, and structuralist, hermeneutic, post-structuralist, Marxist and neo-Marxist theories of culture will be looked at. The dislocations of representation, of recognition and of labour will be examined from these different theoretical frameworks. The main theorists whose work will be considered are Jameson, Harvey, Barthes, Sauassure, Peirce, Levi-Strauss, Ricoeur, Lacan, Althusser, Zizek, Bakhtin, Derrida, Bourdieu, Foucault, Gramsci, Lukacs, Adorno.
Benjamin, and Habermas. In the final week, postmodern science will examined as a cultural phenomenon.

Reading Materials


HAC441 Media and Cultural Studies Seminar B
25 Credit Points • 1 Semester • 3 Hours per Week (up to 3 additional hours per week in supplementary classes may be required) • Hawthorn • Prerequisite: HAC440 • Corequisite: Nil • Teaching methods: Seminars • Assessment: Essays, Seminar Presentation
A unit of study in the Bachelor of Arts (Honours) Cultural Studies Strand.

Aims & Objectives

The aim of this unit of study is to show how the cultural and social theories examined in HAC440 can illuminate the processes of globalisation and its consequences. Students will be introduced to the main range of recent developments in cultural and social theory deployed to make sense of globalisation, and in this way will be shown how to evaluate these theories as rival research programmes.

Content

The unit of study will focus on the spatial, global system of communications, of cultural hegemony and cultural resistance, of political and economic organisation, and of power. Of particular concern will be the relationship between European and non-European cultures, particularly Asian cultures, showing what is involved in people from one culture trying to characterise and understand people from a radically different culture. Analyses and critiques of Eurocentrism, theories and critiques of nationalism, critiques of ‘orientalism’, subaltern studies, theories of the global system of status, theories of power and efforts to develop new approaches to history and politics to deal with the complexities of social and cultural processes which have been revealed by the breakdown of Eurocentric grand narratives of progress will be looked at. To conclude, Australia will be examined within this context.

Reading Materials


HAC442 Media and Cultural Studies Thesis A
25 Credit Points • 1 Semester • 1 Hour per Week (consultation with supervisor) • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Consultation with a supervisor • Assessment: Evidence that the student is working systematically on their 12 000 - 15 000 word thesis (work not assessed until the completion of Thesis B).
A unit of study in the Bachelor of Arts (Honours) - Cultural Studies Strand.

Aims & Objectives

The aim of Thesis A is to introduce students to research methods in their field of enquiry and to formulate a research project proposal for the final thesis. The proposal is developed in conjunction with a supervisor. The objective is that through development of their own research project the student develops the capacity to evaluate existing research and ideas and to develop meaningful research questions. The research project can take a number of forms depending on the student’s area of interest. Thus an additional objective is for the student to develop the capacity to plan their research.

Content

Students work with their thesis supervisors on their chosen research topics.

Reading Materials

Discipline specific reading as advised by thesis supervisor.

HAC443 Media and Cultural Studies Thesis B
25 Credit Points • 1 Semester • 1 Hour per Week • Hawthorn • Prerequisite: HAC442 • Corequisite: Nil • Teaching methods: Consultation with thesis supervisor • Assessment: 12 000 - 15 000 word thesis (continued from Thesis A).
A unit of study in the Bachelor of Arts (Honours) - Cultural Studies Strand.

Aims & Objectives

The aim of Thesis B is for the student to complete their research thesis. The main objective is to give the student practical training in research through execution of the project. The student carries out every phase of the project from initial planning and ethics approval to final analysis and interpretation of findings. An additional objective is for the student to develop skills in reporting their research in the form of a thesis. This deepens the student’s capacity for clear and concise communication in written form.

Content

Students work with their thesis supervisors on their chosen research topics.

Reading Materials

Discipline specific reading material as advised by thesis supervisor.

HAF440 Social Science Seminar A
12.5 Credit Points • 1 Semester • 2 Hours per Week (plus up to 3 hours in other studies) • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Seminars, lectures, • Assessment: Research Proposal, Paper on epistemology, Draft literature review, Assessed work from other unit (or project).
A unit of study in the Bachelor of Arts (Honours) Social Sciences strand.

Aims & Objectives

This seminar is designed to help students:

• Understand key debates in the epistemology of Social Science.
• Design a piece of research and cope with the practical problems of carrying out this design.
• Understand what it means to develop an argument in a research project.
• Learn more about how practical problems of research methods and the research design itself relate to theoretical, ethno-theoretical and empirical debates in social research (for example, debates on epistemological questions and on ontological problems such as: the identification of basic concepts; assumptions about human nature; the agency/non-agency and structure/non-structure debates; and the problem of is and ought).

Content

There are two components to Social Science Seminar A:

• Honours Seminars (two hours per week): issues discussed include epistemology, the development of research questions, social theory in research, the role of pre-existing literature in the research process, sources of evidence and data, critical evaluation of sources, case studies of social research, and ethical and political issues in social research.
• Other Studies: a student is required to attend a number of other class sessions in one other subject of the University according to the student's own educational needs and thesis topic. A maximum of three hours of class attendance per week may be required. This requirement will be determined by the thesis supervisor in consultation with the student.

Reading Materials

Aims & Objectives

To develop the ability to articulate an argument a research question within a contemporary controversy, using a variety of research tools and resources.

To develop the ability to articulate an argument a research question within a succinct and informed account of an existing debate.

Content

This unit of study looks at contemporary debates in the social sciences. It has four three-week modules. Each module focuses on one contemporary controversy, exploring the role of the social sciences. Students will spend three weeks focusing on each theme and discussing how this theme informs research on various topics in sociology, politics, media, history or cultural studies, including their own chosen thesis topic. Issues for HAF445 may include:

- Being human (genetics and technology)
- Understanding technological revolutions
- Democracy and imperfect politics
- The use and abuse of community
- Rights, states and security

Reading Materials

Lecture handouts and material available from the library. There is no prescribed text for this unit of study.

HAF100 Introduction to Philosophy

This unit of study provides an introduction to several major themes and thinkers in the philosophical tradition. Issues discussed include: mind and body, personal identity, free will and determinism, reality, knowledge, ethics and morality.

In discussion, a primary aim is to apply what we learn from the study of these themes and thinkers to aspects of everyday experience, and on this basis come to a better understanding of who we are and of the possibilities for living open to us. The unit of study also fosters a range of analytical, critical and communication skills, valuable for both personal and professional development.

Content

Following an introduction to philosophical inquiry, we go on to discuss such issues as mind and body, relations, personal identity, free will and determinism, reality, knowledge, ethics and morality.

Recommended Reading

Please consult with lecturer before buying recommended readings.
HAH101 History of Ideas
12.5 Credit Points • 1 Semester • 2.5 Hours per Week • Hawthorn • Prerequisites: Nil • Corequisites: Nil • Teaching methods: Lectures and Tutorials • Assessment: Assignments, Tutorial participation.
A unit of study in the Bachelor of Arts; Bachelor of Arts (Media and Communications), Bachelor of Social Science (Psychology) and Bachelor of Social Science.

Aims & Objectives
This unit of study will examine the relationship between scientific ideas and society. Science will be shown to be a cultural phenomenon, as a sub-culture within the broader culture of society, interacting with and influencing the development of societies and their politics.

Content
The unit of study will focus on the emergence, development and permeation of the Darwinian concept of evolution and the emergence, development and permeation of the concept of ecological interdependence, showing the complex interrelations between society, politics and science. Through an examination of these ideas and how they conflict, an effort will be made to reveal to students the extent to which they themselves are the product of a particular culture, and to show the implications and significance of current debates within science for the future of humanity. Questions will be raised about how culture and science in particular can and should be studied, about the definition of science and culture, and about how societies transform themselves. The unit will conclude with an examination of the conflict between the dominant political forces in the world associated with neo-liberalism and founded on Social Darwinism, and the environment movement founded on an ecological view of nature.

Reading Materials

HAH103 Critical Thinking
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisites: Nil • Corequisites: Nil • Teaching methods: Lectures and Tutorials • Assessment: Class tests, essay
A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications); Bachelor of Arts (Psychology and Psychophysiology); Bachelor of Social Science, Bachelor of Social Science (Psychology); and Bachelor of Social Science (Psychology and Psychophysiology).

Aims & Objectives
The aim of this unit is the development of critical reasoning skills which students will find very useful in both academic and everyday contexts. The emphasis is on the study of argumentation.

Content
A variety of practical skills are taught, for example:

- How to distinguish claims from evidence and assess claims in the light of supporting evidence.
- Identifying fallacies.
- Organising material in logically coherent patterns.
- Identifying problematic uses of language.
- Critically evaluating extended arguments and writing evaluative essays.

Such skills are central to the effective completion of academic assignments, as well as to good reasoning in everyday life.

Reading Materials
Please consult with lecturer before buying recommended readings.

HOB219/HAH319Philosophical Psychology
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisites: Nil • Corequisites: Nil • Teaching methods: Seminars • Assessment: Attendance, Participation in seminars, Essay.
A unit of study in the Bachelor of Arts (Psychology), Bachelor of Social Science and Bachelor of Social Science (Psychology). This unit of study can be taken at Stage 2 or Stage 3.

Aims & Objectives
The aim of this unit of study is to provide students with the historical and philosophical background to understand current research in the study of culture, to examine the relationships between the different dimensions of culture revealed by different disciplines and research programs, to explore the practical implications of research on culture, and to consider the most promising lines of future research.

Content
The unit of study examines the concept of culture from its inception as a theoretical object, showing how different dimensions of culture have been opened up for research, and what have been the main advances and theoretical conflicts in this research. This historical and theoretical background is then used to show how present problems and confusions in cultural studies can be overcome and research into culture can be made more practically relevant. The unit concludes by looking at some recent research which has fulfilled the potential of cultural studies. The unit is designed to function as a core unit in a culture studies major.

Reading Materials

HOB219/HAH319Philosophical Psychology
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisites: Nil • Corequisites: Nil • Teaching methods: Seminars • Assessment: Essays, Seminar presentation, Attendance and participation
A unit of study in the Bachelor of Arts, Bachelor of Arts (Psychology and Psychophysiology); Bachelor of Arts (Media and Communications); Bachelor of Social Science (Psychology); and Bachelor of Social Science. This unit of study can be taken at Stage 2 or Stage 3.

Aims & Objectives
The unit of study examines the interconnection between philosophy and psychology with a view to advancing our understanding of the psychology of the person. To this end, we focus on several key themes at the interface of the two disciplines.

Content
The issues considered include: the changing face of scientific psychology; the scientific status of qualitative research in psychology; the complementarity of the quantitative and the qualitative; the need for a pluralistic approach to theory and
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research in psychology; an introduction to the philosophical background to, and psychological applications of, several influential non-reductionist approaches to the psychological study of the person, such as the phenomenological, hermeneutic, postmodern and critical. Our examination of these positions includes critical reflection on the conception of personhood that they embody; a critical appraisal of the prospects for sustained and constructive dialogue between the several approaches in contemporary psychology. Overall, the unit seeks to counterbalance an emphasis on explanation, prediction and quantitative description in psychology with a concern for understanding persons on a more holistic, yet rigorously grounded, basis.

**Recommended Reading**

Please consult with lecturer before buying recommended readings.


**HAH222/HAH322 Practical Ethics**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures and Seminars • Assessment: Essays, Seminar presentation.

A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science and Bachelor of Social Science (Psychology). This unit of study can be taken at Stage 2 or Stage 3.

**Aims & Objectives**

The aim of this unit of study is to provide students with the means to understand the ethical issues and dilemmas involved in making judgements about how to live and behave.

**Content**

The unit of study will introduce students to both modern and classical philosophies of ethics. It will examine the achievements and limitations of modern ethical philosophies and recent efforts to revive classical philosophies to overcome these limitations. Much of the course will be devoted to applying such thinking to various practical domains: to everyday life, to business, to medical practice, to issues raised by computers and the information society, to the environment, and so on.

**Reading Materials**


Elliott, R & Gare, A, Environmental Philosophy, University of Queensland Press, 1983.

**HAH223/HAH323 Environmental Philosophy**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures and Seminars • Assessment: Assignments, Tutorials.

A unit of study in the Bachelor of Arts; Bachelor of Arts (Media and Communications) Bachelor of Social Science; and Bachelor of Social Science (Psychology). This unit of study can be taken at Stage 2 or Stage 3. This unit of study is offered in alternate years and will be offered in 2005.

**Aims & Objectives**

The unit of study aims to provide students with a background understanding of mainstream ethics and economic theory, including an appreciation of the weaknesses of these disciplines. Advances in environmental economics and theories of environmental policy formation and assessment will also be covered.

**Content**

The global destruction of the environment is perhaps the most serious crisis humanity has ever had to confront. This unit examines the cultural, social and economic roots of this crisis, with specific reference to Australia, and considers what action is open to us. While ethics and political philosophy are considered, the major focus of the course is on economic theory and policy formation. The assumptions of prevailing economic thought and policy analysis are critically examined, and new approaches to economics and policy formation, designed to take into account energetic and ecological processes and provide the basis for an environmentally sustainable society, are investigated.

**Reading Materials**

Daly, H & Cobb, J, For the Common Good: Redirecting the Economy toward Community, the Environmental, and a Sustainable Future, 2nd edn, Beacon Press, Boston, 1994.


**HAH224/HAH324 Natural Philosophy and the Sciences**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Seminars, Assessment: Essays, Seminar presentations.

A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science and Bachelor of Social Science (Psychology). This unit of study is only offered in alternate years.

**Aims & Objectives**

The central question addressed in this unit is: What is science? Characterising science is not just a descriptive enterprise: it is also evaluative. It involves discriminating between genuine science and what purports to be science. The aim of this unit is to show that genuine science is research based on a coherent philosophy of nature, and to show that the issues raised by the present challenge to the classical philosophies of nature developed in the seventeenth century. In particular, it aims to explore the consequences of accepting the new philosophy of nature for the human sciences.

**Content**

Science is inaugurating one of the most radical revolutions in thought in the history of humanity, a revolution which had been disguised by logical positivist theories of knowledge. In this course, the breakdown of logical positivism and the development of new theories of knowledge adequate to the history and practice of science are examined. Developments in the theory of knowledge have revealed the foundations of science in the philosophy of nature, that is, the quest to characterise the nature of physical existence. The 'new physics', the 'new biology' and those social sciences being developed in accordance with advances in the natural sciences are shown to be not merely addenda to knowledge, but part of a transformation in our basic conception of physical existence, of what is life, and what it is to be human. These transformations are enabling us to understand how we, as both cultural beings and part of nature, are able to create science and to achieve this understanding of the world and ourselves. The course concludes by looking at science as a cultural process, as a major part of the process through which humans are creating and transforming themselves and their relationship to the rest of nature.

**Reading Materials**


**HAH225/HAH325 Philosophy, Politics, and Society**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures and Seminars, Assessment: Essays, Tutorial presentation, Attendance and participation.

A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science and Bachelor of Social Science (Psychology). This unit of study can be taken at Stage 2 or Stage 3.

**Aims & Objectives**

This unit of study provides an introduction to key issues and debates in contemporary social and political philosophy, with particular reference to the problem of sustaining a just, egalitarian and inclusive political order in the context of a multicultural, diversified and pluralist society.

**Content**

The issues considered include:
A critique of the dominant conception of liberal democracy in respect of its ability to meet the requirements of legitimisation, justice, and socio-political representation.

The development and critical appraisal of an alternative deliberative, or discursive, conception of democracy which promotes greater levels of participation, inclusiveness and accountability.

Exploration of the role of difference as a resource for, rather than an obstacle to, democratic communication and change.

An introduction to the postmodern problematic, with special reference to the problem of power as a potent catalyst in effecting political change.

The potential of the internet and of computer-mediated communication to facilitate political change. Inclusive dialogue and mutual learning as key factors in motivating socio-political transformation in our time.

**Recommended Reading**

Please consult with lecturer before buying recommended readings.


**HAH226/HAH326 Knowledge, Reason, and Society: Contemporary Issues and Perspectives**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Seminars, Assessment: Essays, Seminar presentation, Attendance and participation.

A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science and Bachelor of Social Science (Psychology). This unit of study can be taken at Stage 2 or Stage 3.

**Aims & Objectives**

This unit of study explores problems surrounding the traditional quest for knowledge, understanding and truth through reasoned inquiry following significant advances in our contemporary self-conception. In so doing, we consider implications for living as well as for theory.

**Content**

- What is rationality, and how can it be of value in our personal and social lives?
- Is reason universal or relative to culture? Can our (Western) conception of rationality provide the standard with reference to which the beliefs and practices of traditional cultures should be assessed? Does it make sense to talk of ‘alternative rationalities’?
- What is knowledge? Does the gender, or sex, of the knower influence the kinds of knowledge we can, or should, aspire to acquire? What role does gender play in scientific inquiry?
- What is truth? Is truth relative to us, or independent of the knower? Can we ever know truth? How does postmodernism affect our ability to acquire knowledge and truth?
- Are human rights universal or relative to culture? Should we attempt to impose our standards on other cultures even in the interests of improving their human rights record?
- In developing a response to such questions, this subject aims to meet the pressing need for an enhanced appreciation of key philosophical concepts pertaining to the traditional quest for knowledge, and thereby seeks to contribute to forging worthwhile individual and collective ways of life commensurate with our best contemporary self-understanding.

**Reading Materials**

Please consult with lecturer before buying recommended readings.


**HAI440 Industry and Community Studies Seminar A**

12.5 Credit Points • 1 Semester • 2 Hours per Week (plus up to 3 hours in supplementary study) • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Seminars, lectures • Assessment: Research proposal, Class presentation, Paper on epistemology, Draft literature review, Assessed work from supplementary unit of study (or project)

A unit of study in the Bachelor of Arts (Honours) Industry and Community Studies Strand.

**Aims & Objectives**

This seminar is designed to help students: design a piece of research that is relevant to the needs of an outside organisation and cope with the practical problems of carrying out this design; understand what it means to develop an argument in a research project; learn more about how practical problems of research methods and the research design itself relate to theoretical, metatheoretical and empirical debates in social research (for example, debates on epistemological questions and on ontological problems, such as: the identification of basic concepts; assumptions about human nature; the agency/ non-agency and structure/non-structure debates; and the problem of is and ought).

**Content**

There are two components to Industry and Community Studies Seminar A: Honours Seminars (two hours per week): Issues discussed include epistemology, the development of research questions, social theory in research, the role of pre-existing literature in the research process, sources of evidence and data, critical evaluation of sources, case studies of social research, and ethical and political issues in social research.

Other Studies: A student is required to attend a number of other class sessions in one other unit in the University according to the student's own educational needs and thesis topic. A maximum of three hours of class attendance per week may be required. This requirement will be determined by the thesis supervisor in consultation with the student.

**Reading Materials**


**HAI441 Industry and Community Studies Seminar B**

25 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: HAI440 • Corequisite: Nil • Teaching methods: Seminars, Assessment: Critical review of a thesis, draft chapter, paper evaluating research strategies.

A unit of study in the Bachelor of Arts (Honours) Industry and Community Studies Strand.

**Aims & Objectives**

To evaluate practices of data-gathering and analysis; to provide instruction in organisation and communication of findings; to foster discussion and interpretation of research results; to provide instruction and support for students in completing their research.
Aims & Objectives

The objectives of the unit are to introduce students to the history of Japan and its cultural heritage. Students of Japanese will gain a better understanding of the evolution of the language. Business students, as well as those undertaking an Asian Studies major, will gain the knowledge of events and cultural changes leading to the emergence of the contemporary society as well as its political and economic systems.

Content

This subject introduces historical and cultural topics of direct relevance to the development of Japanese art forms, culture and society. The recommended reading texts used in the unit are in English.

Textbooks


Recommended Reading


HAJ107 Introductory Japanese 1A

12.5 Credit Points • 1 Semester • 6 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Language of Instruction: Japanese with English explanations as necessary. Classwork and Computer Laboratory. • Assessment: Mid-semester test 40%; Final examination 50%; Class performance 10%.

A unit of study in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

To provide students with basic knowledge of the language, including basic literacy skills and an introduction to basic business etiquette. Emphasis is placed on correct pronunciation, acquisition of vocabulary and the fundamentals of grammar.

Content

The course includes four components: basic grammar, reading/writing of the kana scripts and kanji, oral comprehension and oral expression. Hiragana and katakana (the two syllabaries) and an introduction to kanji (Chinese characters).

Textbooks


Textbooks are subject to revision each year. Please refer to unit outline provided by your lecturer in class.

HAJ107 Written Japanese 1B

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ107 Introductory Japanese 1A or equivalent competence in written language. • Corequisite: HAJ109 Spoken Japanese 1B • Teaching methods: Language of Instruction: Japanese with English explanations as necessary. Grammar and reading and writing. Classwork and Computer Laboratory. • Assessment: Mid-semester test 40%; Final examination 50%; Class performance 10%.

A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts and Bachelor of Social Science.

Aims & Objectives

To continue extending students' basic knowledge of the written language through introduction of more complex grammar patterns and reading texts. Emphasis is placed on extension of literacy skills through introduction of a further 100 kanji (Chinese characters).

Content

This unit is a continuation of the HAJ107 Japanese language program. It extends the range of grammar patterns, kanji and reading texts. Study of these components is reinforced by computer-based exercises.
Reading Materials


Mizutani, N, Mizutani, O, NIHONGO Notes, Vols 1 - 2, The Japan Times.

Textbooks are subject to revision each year. Please refer to unit outline provided by your lecturer in class.

HAJ109 Spoken Japanese 1B
12.5 Credit Points • 1 Semester • 3 Hours per Week + Hawthorn • Prerequisite: HAJ107 Introductory Japanese 1A or equivalent competencies in spoken language.

Corequisite: HAJ108 Written Japanese 1B • Teaching methods: Language of Instruction: Japanese with English explanations as necessary. A combination of audiovisual work and Conversation classes.

• Assessment: 10% Class Performance, 2 Class Presentations 30%, Weekly Dictation 10%, Final Examination 50%.

A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
To extend students' basic knowledge of the spoken language through the introduction of more complex conversation topics and aural comprehension texts. Emphasis is placed on development of oral skills for a range of interpersonal interactions, including basic business interactions.

Content
In this unit, conversation classes are based on situational dialogues which reinforce grammar and teach interpersonal communication skills. The dialogues are supplemented with slides to allow more practice of new vocabulary and expressions.

Reading Materials


Textbooks are subject to revision. Please refer to unit outline provided by your lecturer in class.

HAJ131 Advanced Japanese 1A
12.5 Credit Points • 1 Semester • 6 Hours per Week + Hawthorn • Prerequisite: VCE Japanese or equivalent competency in written and spoken language.

Corequisite: NIL • Teaching methods: Language of Instruction: Japanese with English explanations as necessary. Classwork and Computer laboratory work.

• Assessment: Mid-semester test 30%, Final examination 40%, Class performance 10%, Weekly Class Tests 10%, Oral Presentation 10%.

A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
To consolidate students' knowledge of grammar and script acquired through prior study at the secondary level. To expand this knowledge through introduction of a wider range of basic grammar patterns and reading texts (including approximately 150 new kanji - Chinese characters) and more adult conversation topics including business situations.

Content
In HAJ131 students revise coursework covered in year 12 and learn some new grammar patterns and kanji. Conversation classes are based on situational dialogues which reinforce grammar and teach interpersonal communication skills. The dialogues are supplemented with slides to allow more practice of new vocabulary and expressions. Study of grammar, kanji and reading texts is reinforced by computer-based exercises.

Textbooks


Textbooks are subject to revision each year. Please refer to unit outline provided by your lecturer in class.

HAJ132 Advanced Written Japanese 1B
12.5 Credit Points • 1 Semester • 3 Hours per Week + Hawthorn • Prerequisite: HAJ131 Advanced Japanese 1A or equivalent competency in spoken language.

Corequisite: HAJ132 Advanced Written Japanese 1B • Teaching methods: Language of Instruction: Japanese with English explanations as necessary.

• Assessment: Mid-Semester Test 40%, Final Test 40%, Weekly Tests and Class Performance 20%.

A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
To continue extending students' competency in written language through introduction of more complex grammar patterns and reading texts. Literacy skills are expanded through introduction of a further 150 kanji (Chinese characters).

Content
The unit of study extends the range of grammar patterns, kanji and reading texts. Study of these components is reinforced by computer-based exercises.

Textbooks
Mizutani, N, Mizutani, O, NIHONGO Notes, Vols 2 - 3.


Textbooks are subject to revision each year. Please refer to unit outline provided by your lecturer in class.

HAJ133 Advanced Spoken Japanese 1B
12.5 Credit Points • 1 Semester • 3 Hours per Week + Hawthorn • Prerequisite: HAJ132 Advanced Japanese 1A or equivalent competency in spoken language.

Corequisite: HAJ133 Advanced Spoken Japanese 1B • Teaching methods: Language of Instruction: Japanese with English explanations as necessary. Aural comprehension and Conversation classes.

• Assessment: Mid-Semester Test 40%, Final Test 40%, Weekly Tests and Class Performance 20%.

A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
To extend students' competency in the spoken language through introduction of more complex conversation topics and aural comprehension texts. Emphasis is placed on development of oral skills for a range of everyday situations including business situations.

Content
The course includes 2 main components: aural comprehension and oral expression.

Textbooks

Textbooks are subject to revision each year. Please refer to the unit outline provided by your lecturer in class.

HAJ202 Communication in Japanese
12.5 Credit Points • 1 Semester • 3 Hours per Week + Hawthorn • Prerequisite: HAJ102 Introduction to Japan: A Cultural Overview or HAJ131 Advanced Japanese 1A or HAJ107 Introductory Japanese 1A • Corequisite: NIL • Teaching methods: Language of Instruction: English. A 1.5 hour lecture and 1.5 hour tutorial per week.

• Assessment: Presentation 15%, Essay 35%, Tests 40% and Attendance/Participation 10%.

A unit of study in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts and Bachelor of Social Science.

Aims & Objectives
The objectives of the subject are to equip students of Japanese with the skills of interpersonal communication in Japanese social and business environments. Study of the language provides students with linguistic skills. However, more is required to prepare them for participation in Japan-related employment. Thus the aim of this subject is to 'fill the gap' by supplementing the language with competence in Japanese communication patterns. For students to get the most out of this subject, it...
is highly advisable that they complete at least two semesters of Japanese Language or equivalent study prior to enrolling in this unit.

Content
This unit explores the linguistic and non-linguistic elements which characterise the Japanese communication patterns. A particular focus is on the difference between the Australian and the Japanese norms of interpersonal interaction in social and business environments. Study of the subject involves regular interaction with native speakers of Japanese for the purpose of obtaining empirical data on the contemporary usage of the language. The unit is organised as a series of seminars and involves active participation of all students.

Textbooks

HAJ215 Intermediate Japanese 2A
12.5 Credit Points • 1 Semester • 6 Hours per Week • Hawthorn • Prerequisite: HAJ108 Written Japanese 1B and HAJ109 Spoken Japanese 1B or equivalent competence in written and spoken Japanese. • Corequisite: HAJ217 Written Japanese 2B • Teaching methods: Language of Instruction: Japanese with English explanations as necessary. Classwork and Computer laboratory work. • Assessment: Mid-semester test 30%, Final examination 40%, Class performance 10%, Weekly Class Tests 10%, Oral Presentation 10%.
A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
To continue extending students' competence in the written and spoken language through the introduction of more complex grammar patterns, reading texts and aural comprehension texts.

Content
The course includes five main components: grammar, reading, writing, aural comprehension and oral expression. Literacy skills are expanded through introduction of a further 150 kanji (Chinese characters). Emphasis is placed on the development of oral skills for a range of everyday situations, including business situations.

References
Mizutani, N, Mizutani, O., Nihongo Notes, Vols 1 - 2.
Textbooks are subject to revision each year. Please refer to unit outline provided by your lecturer in class.

HAJ217 Written Japanese 2B
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ215 Intermediate Japanese 2A or equivalent competence in written Japanese. • Corequisite: HAJ218 Spoken Japanese 2B • Teaching methods: Language of Instruction: Japanese with English explanations as necessary. Classwork and Computer laboratory work. • Assessment: Mid-semester test 40%, Final examination 40%, Class performance 20%, Weekly class tests and performance 20%.
A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
The aim of this unit is to build on the reading and writing skills acquired in previous study by increasing knowledge of grammar patterns, vocabulary and kanji, in order to prepare students for language study at a more advanced level.

Content
The course includes three components: grammar, reading and writing. Literacy skills are expanded through introduction of a further 150 kanji (Chinese characters). Study of grammar and reading texts is reinforced by computer-based exercises.

Reading Materials

Textbooks are subject to revision each year. Please refer to unit outline provided by your lecturer in class.

HAJ218 Spoken Japanese 2B
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ215 Intermediate Japanese 2A or equivalent competence in spoken Japanese. • Corequisite: HAJ217 Written Japanese 2B • Teaching methods: Language of Instruction: Japanese. Classwork and Computer laboratory work. • Assessment: Mid-semester test 40%, Final examination 40%, Class performance 20%.
A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
To extend students' competence in the spoken language through introduction of unbridled aural comprehension texts. Emphasis is placed on development of oral skills for an extended range of communicative situations, including correct usage of honorifics in business situations.

Content
The course includes two main components: aural comprehension and oral expression.

References
Textbooks are subject to revision each year. Please refer to unit outline provided by your lecturer in class.

HAJ231 Advanced Written Japanese 2A
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ131 Advanced Japanese 1A, HAJ132 Advanced Written Japanese 1B, HAJ133 Advanced Spoken Japanese 1B or equivalent competence in Japanese. • Corequisite: HAJ222 Advanced Spoken Japanese 2A • Teaching methods: Language of Instruction: Japanese with English explanations as necessary. Classwork. • Assessment: Mid-semester test 40%, Final test 40%, Class performance and attendance 20%.
A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
The aim of this unit of study is to build on the skills acquired at the Stage One level by increasing knowledge of grammar patterns, vocabulary and kanji. Prepare students for language study at a more advanced level in general and in business situations.

Content
The course includes grammar, reading and writing. Literacy skills are expanded through introduction of a further 350 kanji (Chinese characters) on various topics. Emphasis is placed on development of written skills for an extended range of communicative situations and on summary making. Students also practice paraphrasing.

Textbooks
Textbooks are subject to revision each year. Please refer to unit outline provided by your lecturer in class.

References

HAJ232 Advanced Spoken Japanese 2A
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ132 Advanced Written Japanese 1B, HAJ133 Advanced Spoken Japanese 1B or equivalent competence in Japanese. • Corequisite: HAJ231 Advanced Written Japanese 2A • Teaching methods: Language of Instruction: Japanese. Classwork. • Assessment: Mid-semester Test 40%, Final Test 40%, Class performance and attendance 20%.
A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
The aim of this unit of study is to build on the skills acquired at the Stage One level by improving on existing speaking and listening skills in order to prepare students for language study at a more advanced level.
Content
The course includes aural comprehension and oral work. Emphasis is placed on development of oral skills for an extended range of communicative situations and on correct usage of honorifics in general.

Textbooks
Koyama, S., J. Bridge to Intermediate Japanese. Tokyo: Bonjinsha, 2002. Textbooks are subject to revision each year. Please refer to unit outline provided by your lecturer in class.

HAJ233 Advanced Written Japanese 2B
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ231 Advanced Written Japanese 2A & HAJ232 Advanced Spoken Japanese 2A or equivalent competence in written Japanese. • Corequisite: HAJ233 Advanced Spoken Japanese 2B • Teaching methods: Language of Instruction: Japanese with English explanations as necessary. Lecture, class work, pair work, discussion. • Assessment: Mid-semester Test 40%, Final Test 40%, Class performance and attendance 20%.
A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
This unit of study aims to continue introducing students to more advanced authentic Japanese texts, Japanese sentence structure and the Japanese writing system and also build up confidence solely in Japanese. Students will practice using more complex grammatical expressions, including complex and compound sentences. Students also will learn to paraphrase in Japanese, to summarize paragraphs in Japanese and to use translation software.

Content
This unit of study is designed to build skills in written Japanese and exposure to vocabulary on contemporary topics. The course is comprised of the components of reading, writing and grammar.

Textbooks
Textbooks are subject to revision each year. Please refer to unit outline provided by your lecturer in class.

References

HAJ234 Advanced Spoken Japanese 2B
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ231 Advanced Written Japanese 2A & HAJ232 Advanced Spoken Japanese 2A or equivalent competence in spoken Japanese. • Corequisite: HAJ233 Advanced Written Japanese 2B • Teaching methods: Language of Instruction: Japanese. A combination of a conversation/listening/drama production class. • Assessment: Mid-semester Test 40%, Final Test 40%, Minor Tests, Class performance and Attendance 20%.
A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
To extend students' competence in the spoken language through exposure to unabridged aural comprehension texts. Emphasis is placed on further development of oral skills for an extended range of communicative situations and on correct usage of different speech registers, including business situations.

Content
This unit of study is designed to build Japanese communication skills. The course is comprised of the components of slides, conversation and listening comprehension. Conversation classes are based on situational dialogues. The dialogues are supplemented with slides to allow more practice of new vocabulary and expressions. Listening is based on current topics.

Textbooks

HAJ318 Written Japanese 3A
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ217 Written Japanese 2B and HAJ218 or equivalent competence in written Japanese. • Corequisite: HAJ319 Spoken Japanese 3A • Teaching methods: Language of Instruction: Japanese with English explanations as necessary.
Classwork • Assessment: Mid-semester Test 40%, Final Test 40%, Class performance and attendance 20%.
A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts and Bachelor of Social Science.

Aims & Objectives
To continue extending students' competence in the written language through reading of unabridged texts. The writing component provides training in different writing styles and includes formal introduction of a further 200 kanji (Chinese characters), as well as exposure to an extensive range of kanji compounds.

Content
This unit is designed to build skills in written Japanese. The course is comprised of the components of reading, writing and grammar.

References
Toki, S. et al., Nihongo Chuukyu J501, 3-A Network (Publishers), Rev. Edn, 2000. Textbooks are subject to revision each year. Please refer to unit outline provided by your lecturer in class.

HAJ319 Spoken Japanese 3A
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ218 Spoken Japanese 2B or equivalent competence in spoken Japanese. • Corequisite: HAJ316 Written Japanese 3A • Teaching methods: Language of Instruction: Japanese. • Assessment: Mid-semester Test 40%, Final Test 40%, Class performance and Attendance 20%.
A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts and Bachelor of Social Science.

Aims & Objectives
To continue extending students' competence in the spoken language through exposure to unabridged aural comprehension texts. Emphasis is placed on further development of oral skills for an extended range of communicative and business situations.

Content
This unit is designed to build Japanese communication skills in spoken Japanese. The course is comprised of the components of slides, conversation and listening comprehension. Conversation classes are based on situational dialogues which reinforce grammar and teach interpersonal communication skills. The dialogues are supplemented with slides to allow more practice of new vocabulary and expressions.

References
Koyama, S. J. Bridge to Intermediate Japanese. Tokyo: Bonjinsha, 2002. Textbooks are subject to revision each year. Please refer to unit outline provided by your lecturer in class.

HAJ323 Written Japanese 3B
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ319 Spoken Japanese 3A & HAJ318 Written Japanese 3A or equivalent competence in written Japanese. • Corequisite: HAJ324 Spoken Japanese 3B • Teaching methods: Language of Instruction: Japanese with English explanations as necessary. Lecture, class work, pair work, discussion. • Assessment: Mid-semester Test 40%, Final Test 40%, Class performance and Attendance 20%.
A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts and Bachelor of Social Science.

Aims & Objectives
This unit aims to continue introducing students to more advanced authentic Japanese texts, Japanese sentence structure and the Japanese writing system and also build up confidence solely in Japanese. Students will practice using more complex grammatical expressions, including complex and compound sentences. Students also will learn to paraphrase in Japanese, to summarize paragraphs in Japanese and to use translation software.

Content
This unit is designed to build skills in written Japanese and exposure to vocabulary on contemporary topics. The course is comprised of the components of reading, writing and grammar.

Reading Materials
Toki, S. et al., Nihongo Chuukyu J501, Tokyo: 3A Network, 2001. Textbooks are subject to revision each year. Please refer to unit outline provided by your lecturer in class.
HAJ324  Spoken Japanese 3B
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ318 Written Japanese 3A or HAJ319 Spoken Japanese 3A equivalent competence in spoken Japanese • Corequisite: HAJ323 Written Japanese 3B • Teaching methods: Language of instruction: Japanese. A combination of a Conversation/Slide class and a Video class. • Assessment: Mid-semester Test 40%, Final Test 40%, Minor Test 10%, Class performance and Attendance 10%. A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts and Bachelor of Social Science.

Aims & Objectives
To continue extending students’ competence in the spoken language through introduction of a variety of unabridged aural comprehension test (video programs) and listening in oral expression with emphasis on correct use of the full range of speech registers.

Content
This unit is designed to build Japanese communication skills in spoken Japanese. The course is comprised of slides, conversation and listening comprehension. Conversation classes cover a wide range of topics and focus on correct use of the full range of speech registers for general and business situations. Slides are used to allow more practice of new vocabulary and expressions. Listening is based on contemporary video materials.

Textbooks
Nawar, T. Japan and Australia: Culture and Business. Melbourne: Swinburne University Press, 2002. Textbooks are subject to revision each year. Please refer to unit outline provided by your lecturer in class.

HAJ331  Advanced Written Business Japanese
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ223 Advanced Written Japanese 2B or HAJ222 Advanced Spoken Japanese 2A • Corequisite: HAJ332 Advanced Spoken Business Japanese • Teaching methods: Language of instruction: Japanese. Classwork. • Assessment: Mid-semester test 20%, Final test 30%, Weekly tests 10%, Projects 20%, Class performance 10%. A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese).

Aims & Objectives
This unit of study introduces students to a range of contemporary Japanese written documents relating to business communication.

Content
The study of this unit involves reading a wide range of business related documents and writing business letters, faxes and similar. Approximately 200 Kanji (Chinese characters) are also studied.

Textbooks

HAJ332  Advanced Spoken Business Japanese
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HAJ223 Advanced Written Japanese 2B and HAJ234 Advanced Spoken Japanese 3B • Corequisite: HAJ332 Advanced Spoken Business Japanese • Teaching methods: Language of instruction: Japanese. Classwork. • Assessment: Interview 20%, Debate 30%, Presentation 20%, Visitor session, Class Performance and Report 10%, Weekly tests 10%, Final test (Listening) 10%. A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese).

Aims & Objectives
This unit of study focuses on the enhancement of students’ oral skills relevant to a variety of business situations. Special emphasis is placed on correct use of appropriate speech registers and observance of business etiquette.

Content
This unit of study involves extensive practice in speaking in a variety of simulated business situations. Development of listening skills involves listening to tapes and viewing videos.

Textbooks

HAJ333  Advanced Business Readings and Communication
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HAJ331 Advanced Written Business Japanese and HAJ332 Advanced Written Japanese 1B or equivalent competence in Japanese • Teaching methods: Language of instruction: Japanese. Classwork. • Assessment: Mid Aural Test 15%, Mid Written Test 15%, Final Aural Test 15%, Final Written Test 15%, Oral Test 10%, Written Assignments 10%, Weekly Vocabulary Tests 10%, Class performance 10%. A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese) and Bachelor of Business (International Business) / Bachelor of Arts (Japanese).

Aims & Objectives
The aim of this unit is to fulfil the needs of individuals and organisations that require an evaluation of an individual’s level of understanding of Japanese language and culture for business situations. The subject focuses on skills used in daily situations within a Japanese business organisation, including reading and listening, rather than general lists of vocabulary, kanji or grammar.

The unit also aims to build skills for a high proficiency of Business Japanese, especially focusing on the JETRO Business Japanese Proficiency Test. The JETRO Test is a practical measure of a non-native Japanese speaker’s proficiency in business Japanese. The test will not be used simply as a measure of skill, but will be used to encourage non-native Japanese speakers to further their studies. It is also hoped that the test will bring to the attention of employers the value of students who not only speak Japanese but also understand the associated business values and culture.

Content
The course includes four components:
• Grammar
• Reading
• Aural comprehension
• Oral work

Reading Materials

Textbooks are subject to revision each year. Please refer to the unit outline provided in the first class.

HAJ440  Japanese Seminar A
25 Credit Points • 1 Semester • 3 Hours per Fortnight (plus up to 3 hours per week in supplementary classes) • Hawthorn • Prerequisite: HAJ440 Advanced Japanese Thesis A. • Teaching methods: Seminar discussions and language instruction. • Assessment: Presentation, Assignment, Assessed work in supplementary studies. A unit of study in the Bachelor of Arts (Honours) Languages Strand.

Aims & Objectives
To increase students’ proficiency in the Japanese language; to equip students to undertake research for their thesis; to give students a greater understanding of the cultural, political and social aspects of Japan.

Content
Forbiddingly seminar conducted in Japanese. These seminars will provide students with oral language maintenance opportunities and a forum in which to explore aspects within Japanese culture, politics and society. Students are to attend research methodology seminars: Social Science Seminar A or Media and Cultural Studies Seminar A, or HASP306 Qualitative Research Methods or HASP307 Qualitative Research Methods.

Reading Materials


HAJ441 Japanese Seminar B
25 Credit Points • 1 Semester • 3 Hours per Week in Social Science or Media and Cultural Studies • Hawthorn • Prerequisite: HAJ440 • Corequisite: HAJ443 Japanese Thesis B • Teaching methods: Seminar discussions and language instruction • Assessment: Presentation in target language, Major assignment. A unit of study in the Bachelor of Arts (Honours) Languages Strand.

Aims & Objectives
To increase students' proficiency in the language which they are studying; to give with oral language maintenance opportunities and a forum in which to explore Japan.

Content
Fortnightly seminars conducted in Japanese. The sessions will provide students with oral language maintenance opportunities and a forum in which to explore aspects within Japanese culture, politics and society. Students are to attend research methodology seminars; either HAJ441 Social Science Seminar B or HAC441 Media and Cultural Studies Seminar B.

Reading Materials


HAJ442 Japanese Thesis A
25 Credit Points • 1 Semester • 1 Hour per Week • Hawthorn • Prerequisite: (HAJ332 or HALM104) or HAJ337 • Corequisite: N/A • Teaching methods: Consultation with thesis supervisor • Assessment: Evidence that the student is working systematically on 12 000 - 15 000 word thesis, work is not assessed until completion of Thesis B. A unit of study in the Bachelor of Arts (Honours) Languages Strand.

Aims & Objectives
The aim of Thesis A is to introduce students to research methods in their field of enquiry and to formulate a research project proposal for the final thesis. The project is developed in conjunction with a supervisor. The objective is that through development of their own research project the student develops the capacity to evaluate existing research and ideas and to develop meaningful research questions. The research project can take a number of forms depending on the student's area of interest. Thus an additional objective is for the student to develop the capacity to plan their research.

Content
Students work with their thesis supervisors on their chosen research topics.

Reading Materials
Discipline specific reading as advised by thesis supervisor.

HAJ443 Japanese Thesis B
25 Credit Points • 1 Semester • 1 Hour per Week • Hawthorn • Prerequisite: HAJ442 Japanese Thesis A • Corequisite: HAJ443 Japanese Thesis B • Teaching methods: Consultation with thesis supervisor • Assessment: 12 000 - 15 000 word Thesis. A unit of study in the Bachelor of Arts (Honours) Languages Strand.

Aims & Objectives
The aim of Thesis B is for the student to complete their research thesis. The main objective is to give the student practical training in research through execution of the project. The student carries out every phase of the project from initial planning and ethics approval to final analysis and interpretation of findings. An additional objective is for the student to develop skills in reporting their research in the form of a thesis. This develops the student's capacity for clear and concise communication in written form.

Content
Students work with their thesis supervisors on their chosen research topics.

Reading Materials
Discipline specific reading as advised by thesis supervisor.

HAL103 Writing Fiction
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: N/A • Corequisite: N/A • Teaching methods: Lectures and Tutorials • Assessment: Journal, creative writing folio, participation. A unit of study in the Bachelor of Arts: Bachelor of Arts (Media and Communications), Bachelor of Social Science and Bachelor of Social Science (Psychology).

Aims & Objectives
This unit of study will introduce students to the range of skills required of the professional writer of fiction. A series of workshop exercises will develop skills in creating character, dialogue and dramatic tension. Point of view, voice, form, style, plot, tone, description, and their place in building a story will be explored. The importance of revision, listening to criticism and developing a self-critical stance will be emphasised, together with techniques for developing these personal skills.

Content
An introduction to techniques of critical and creative thinking will be provided; for example, by exploring both rational and irrational processes; the role of conjectural thinking, intuition and luck; the use of analogies, metaphors, and associative thinking; perceiving and creating relationships. Emphasis is placed on the participant as writer and critic.

Recommended Reading


HAL209 Australian Writing and Cultural Change
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HALM104 Media Literature Film: Texts and Contexts or approved equivalent, HAP100 Australian Politics (for students majoring in Australian Studies). • Corequisite: N/A • Teaching methods: Lectures and Tutorials • Assessment: Participation, research project, major project, class presentation.

A unit of study in the Bachelor of Arts: Bachelor of Arts (Media and Communications), Bachelor of Social Science and Bachelor of Social Science (Psychology).

Aims & Objectives
This unit of study is an examination of the changing face of Australian life and literary culture. It takes a contemporary issues approach to the study of social and cultural debates within Australian life, and how writing contributes to and reflects these debates.

Content
Issues concerned with the ‘theory wars’ of the 1980s, multiculturalism and indigenous politics, feminism and queer theory will be explored. The impact of information technology on the formation of new social spaces (such as the virtual community), as well as changing notions of identity and cultural politics will also be addressed.

Recommended Reading


HAL309 Renaissance Literary Culture
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Two Stage 2 Literature units, or approved equivalents. • Corequisite: N/A • Teaching methods: Lectures and Tutorials • Assessment: Participation, Research project, Major project, Class presentation.
Aims & Objectives
The principal aim of this unit of study is to critically investigate the ways in which we read and interpret the literature of the renaissance.

Content
Not losing sight of our position as late twentieth century readers, this unit explores the place that literature occupied within Renaissance culture as a whole. Drawing on contemporary theoretical models, it seeks to relate the historical phenomenon of the renaissance to the modern/postmodern debate.

Recommended Reading

HALM104 Media Literature Film: Texts and Contexts
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Essays, classwork, participation.

Aims & Objectives
Through the examination of texts drawn from literature, film, television, video and new media forms, this unit of study introduces students to key concepts that are central to both literary and media studies. Students will be encouraged to re-think assumptions about how we read and to scrutinise the 'common sense' critical methods we customarily use to assess what we watch and read. Students will acquire an insight into the notion of representation, a term that applies not only to works of art, but also to critical practice and to the formation of both texts and criticism into disciplines or objects of study.

Central to this theme are the following objectives:

- An understanding of basic concepts such as text, context, narrative, medium and image.
- Flexibility in discussing and analysing texts across different media and the ability to comment on their similarities and differences.
- An appreciation of oneself as a reader with an ability to think independently about texts and the variety of contexts in which it is possible to place them.
- An awareness of form and the conditions that make representations intelligible or otherwise.

As this unit of study is a core unit for both the Literature and Media majors, it is expected that students will acquire a solid grounding in analytical and theoretical skills and will develop the intellectually curious required of both courses of study.

Content
How do we represent ourselves in contemporary society? How do we make sense of these representations both in Australian and international contexts? In an age increasingly dominated by electronic art and global communications, how do we understand the complex interrelationships between traditional representational forms (such as novels and plays), mass-media forms (film, television and radio) and emergent new media (hypothesis and interactive multimedia)?

Recommended Reading

HALM200 Reading, Writing and Criticism
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HALM104 Media Literature Film: Texts and Contexts or approved equivalent. • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Essays, Folio Presentations, Participation.

Aims & Objectives
This unit of study is an exploration of the relationship between various theories and practices of writing.

Content
Combining modern literary and critical theories, practical workshop writing and the examination of a range of literary models, the unit explores the cultural practices of reading and writing, and evaluates their values and meanings in the face of the assumptions of postmodernism.

A central theme of the unit is the historical evolution of writing as a cultural technology. The course traces this evolution by looking principally at writing in its printed form, but in doing so seeks to anticipate what a practice of electronic writing might be like.

Recommended Reading

HALM202 Journalism: Processes and Practices
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HALM104 Media Literature Film: Texts and Contexts or HAM105 The Media in Australia • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Class presentation, feature story, class and online participation.

Aims & Objectives
This unit of study takes both a theoretical and practical approach to news writing by looking at the different reporting strategies and practices of newspapers, radio, television and on-line journalism.

Recommended Reading

HALM207 Network Cultures
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HALM104 Media Literature Film: Texts and Contexts or HAM105 The Media in Australia • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Participation/reading journal/discussion list, review of an electronic media event, major essay/project.

Aims & Objectives
This unit of study takes both a theoretical and practical approach to news writing by looking at the different reporting strategies and practices of newspapers, radio, television and on-line journalism.

Recommended Reading

White, S, Reporting in Australia, MacMillan, South Melbourne, 1996.
the skills to use new technologies effectively. The unit of study will be delivered using a combination of face to face teaching and all of the above technologies (hypertext, email, Internet Relay Chat, MUDs (multi-user domains), CD-ROM and VRML). Students will be required to submit work for assessment in a similar array of formats.

Reading Materials

HALM312 Cinema Studies
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HALM104 Media Literature Film: Texts and Contexts and any two Stage 2 Media studies units, or equivalent. • Corequisite: Nil • Teaching methods: Screenings, lectures and seminars • Assessment: Class work, essay
A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science, Bachelor of Social Science (Psychology) and Bachelor of Multimedia (Media Studies).

Aims & Objectives
This unit is designed to develop skills which are applicable to a wide range of disciplines and highly valued by most prospective employers. By the end of the semester, students will have gained the confidence and ability to use the technologies and methods implicit in the teaching of the course, they will have:
• Developed independent research skills.
• Enhanced an ability to develop and formulate a coherent argument.
• Developed analytical and conceptual skills.
• Increased problem-solving abilities.
• Extended their capacity to communicate both verbally and in writing.
• Acquired an awareness of form and of the conditions that make texts intelligible or otherwise.

Content
The viewing material for this unit of study is a selection of films arranged thematically (eg, romantic comedy, horror, or science-fiction), usually (the journey film, or the domestic drama), or stylistically. Using these texts, the ideas introduced during the previous two years of the course will be integrated into a systematic analysis of film.

The emphasis is on the practice of film criticism: attention is focused upon the usefulness of structuralist and semiological studies and their function in relation to the meaning of the discourse which dominates more traditional critical work. In this context, particular questions to do with the developing study of film will be considered throughout the course: for example, the ways in which ideology is inscribed into the works examined (as well as into the methods of examination), the usefulness of the work of the ‘frame-by-frame heretics’, the kinds of relationships constructed between a film and its viewer, the place of the ‘author’ in relation to the formal and thematic organisation of the works which bear his/her name, the usefulness of ‘genre’ studies, the function of the ‘star system’, and the relationship between the film, the industry and the cultures in which they exist.

Recommended Reading
Grant, BK (ed.), Film Genre Reader, University of Texas Press, Austin, 1986

HALM315 Network Literacies
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Two Stage 2 Literature units, one of which must be HALM200 Reading, Writing and Criticism, or two Stage 2 Media Studies units, one of which must be HALM202 Journalism: Processes and Practices • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Glossary exercise, major assignment, class participation/reading journal.
A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science, Bachelor of Social Science (Psychology) and Bachelor of Multimedia (Media Studies).

Note: This subject replaces HALM316 Electronic Writing in 2008.

Aims & Objectives
This unit of study aims to critically examine current theory relating to electronic writing and, in particular, hypertext. Does the embodiment of electronic writing in the form of stand-alone hypertext applications or in the form of the World Wide Web (through hypertext Markup Language - HTML) change our relationship, as readers, to the written word? Does electronic writing, as Mark Poster argues, represent a third stage in the mode of information in which ‘the self is decentred, dispersed, and multiplied in continuous instability?'

Alongside these questions, students will be introduced to HTML and asked to consider the experience of writing in an online, electronic environment (namely, the WWW). What are the rules (if any) which govern this new writing space and to what extent has a rhetoric of electronic writing been developed? Students will be encouraged to rethink the concept of writing and to ask themselves such elusive questions as ‘What is a medium?’

Content
Students will access the internet and will develop writing skills designed for the electronic environment, using authoring and graphics packages.

Recommended Reading

HALM317 Literature/Media Project
12.5 Credit Points • 15 days or equivalent • Hawthorn • Prerequisite: Five Literature/Media Studies units • Corequisite: Nil • Teaching methods: Supervised project • Assessment: Journal, workbook, weblog, project.
A unit of study in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Social Science and Bachelor of Social Science (Psychology).

Content
In this unit of study, students may undertake a literature project, a work placement in industry or a combination of both. Students undertaking a project are supervised in both the design and implementation of a product of their choice (eg, an electronic journal; a multimedia presentation; a research report). Students undertaking work attachment must independently approach a relevant institution and will be required to report on that institution as part of their assessment. Alternatively, students can negotiate a combination of work attachment and project with their supervisor.

The unit of study is designed to develop a work to completion, and prepare it for publication, or at least submit it for publication. This work can be of a critical nature, and students will be expected to work closely with a supervisor throughout the semester.

HAM105 The Media in Australia
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Major essay, journal, attendance, participation, tests, group assignment work.
A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science, Bachelor of Science (Biotechnology/Bachelor of Arts (Media & Communications), Bachelor of Social Science, Bachelor of Social Science (Psychology) and an elective unit of study in the Bachelor of Film and Television.

Aims & Objectives
This unit of study is an introduction to some of the major historical and
contemporary issues in broadcasting as a medium of mass communication, primarily in an Australian context.

Content
This unit of study examines the political context of broadcasting institutions, public and private, and their relationship with other social institutions. Key political, social and ethical issues associated with the media are canvassed, such as the ownership and control of radio, television stations, newspapers and Pay TV, the regulatory climate, accountability in programming, relationships to audiences and journalistic practices and ethics. Vexed issues, such as media freedom and reform, public participation in ownership and programming, regulatory changes in broadcasting, and professional journalistic standards are discussed from a range of perspectives.

Recommended Reading

HAM113 Professional Communication Practice
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures and Workshops • Assessment: Concept Proposal (30%), Communications Analysis (35%), Group Presentation (35%).
A unit of study in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Social Science Bachelor of Social Science (Psychology) and Bachelor of Multimedia

Aims & Objectives
With the advent of new communications technologies such as the Internet, the ability to communicate effectively is becoming a key competency across a wide range of professions. This is especially true of fields such as engineering, information technology and the biophysical sciences, whose increased profile now positions them as key strategic components in many business ventures. Practitioners from these fields often find themselves having to communicate highly technical information to people who have little or no expertise in their areas, meaning that clear and precise communications are vital if a productive information flow is to be established.

Professional Communication Practice is designed to equip students with the oral and written communication skills they require to compete in the contemporary marketplace. This is achieved through an exploration of both the theoretical and practical dimensions of modern communications, with an emphasis on developing the skills needed to deal with a wide variety of different communications environments. The content is designed to cater to students from all disciplines and provide them with techniques they can employ throughout their educational and professional careers. The unit is structured around three key areas: Researching, Writing and Presenting, with each designed to complement the others.

Content
The following topics are covered in this unit of study:
• Basic Research Techniques
• Information Acquisition and Organisation
• Resource Evaluation
• Academic Writing Skills
• Writing for a Corporate Audience
• Writing for the Digital Age
• Intercultural Communications
• Effective Presentation Techniques
• Analysing the Media
• Dealing with the Media
• Spin Doctoring

Reading Materials

HAM210 Popular Culture
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAML104 Media Literature Film: Texts and Contexts or HAM105 The Media in Australia • Teaching methods: Lectures and Tutorials • Assessment: Major essay, journal, attendance, participation, minor essay, test.
A unit of study in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Social Science Bachelor of Social Science (Psychology) and Bachelor of Multimedia (Media Studies).

Aims & Objectives
The central aim of the unit of study is to encourage students to engage in a critical analysis of the culture around them. Students will be able to draw on their own experiences of culture and critically examine their own constructions of meaning and the pleasures of involvement.

Content
This unit of study will introduce issues and debates in contemporary culture and cultural analysis. It will investigate the diversity of images, ideologies, meanings and practices which comprise popular culture. Issues such as shopping, fashion, advertising, drugs, pornography, gambling, music and sport will be analysed. Special emphasis will be placed on the role and significance of the media and its representations of popular culture. The unit will also consider the commercial and institutional imperatives shaping popular culture and its multiple relations to political processes. Major theoretical reference points in this unit of study will include marxist, feminist, postmodern and structuralist analysis of late capitalism. Consideration will be given to the ongoing debates which surround cultural meanings and practices in the current Australian context.

Recommended Reading

HAM211 New Media: The Telecommunications Revolution
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAML104 Media Literature Film: Texts and Contexts or HAM105 The Media in Australia • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Attendance, Media Diary, Essays, Exam
A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science Bachelor of Social Science (Psychology), Bachelor of Multimedia (Media Studies) and an elective unit of study in the Bachelor of Film and Television.

Aims & Objectives
This unit of study is designed to provide students with a broad understanding of the ways in which information and communications technologies (ICTs) are changing Australian society. In particular, it focuses on the way in which converged industries and technologies are reshaping the political and economic landscape, thereby impacting on the lives of all Australians. It examines who is driving these changes and who might benefit from them, using a range of techniques drawn from the broad field of political economy. New communications technologies and their applications, such as cable and pay television, interactive television, Web TV, and the internet, are discussed in terms of their challenges to established systems. The effects of new communications technologies on content, diversity and social needs in Australia are canvassed, as are the cultural implications of electronic communication.

Content
The following topics are covered in this unit of study:
• New Media and Convergence
• The Telecommunications Industry, History and Key Concepts
• Recasting Broadcasting: Broadcasting Models
• Public Broadcasting Sector: ABC on-line
• Digital Television
• Privacy in the Age of Information
• Australian and the Digital Divide
• Computer Games and 3G: New Media Versus Old Policy
• Electronic Culture and the Future
• The Smart Internet?

Recommended Reading
HAM313 Radio Production and Criticism A
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HAM105 The Media in Australia or HAM104 Media Literature Film: Texts and Contexts and any other Stage 2 Media Studies unit or equivalent • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Viva pop assignment, interview assignment, radio program proposal, radio program assignment, participation.
A unit of study in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Social Science; Bachelor of Social Science (Psychology) and Bachelor of Multimedia (Media Studies).

Aims & Objectives
This is a production course which aims to equip students with the skills necessary for successful participation in radio production. Sound recording, editing, panel operation, voice production and interviewing are all covered. While the acquisition of production skills is an essential part of the course, the broader context of how those skills can be applied is always kept in mind.

Content
As well as developing practical radio skills, this unit will cover areas such as radio news and current affairs, radio drama, indigenous radio, women's radio, scriptwriting and voice production.

Recommended Reading
Strauss, N. Radio(tage), Semiotext(e), Columbia University, New York, 1993.
Hicks, M. Radio on Radio (Audio tapes), Swinburne, 1985.

HAM314 Professional Attachment Program
12.5 Credit Points • 1 Semester (comprises 15 days of full-time work) • Nil • Hawthorn • Prerequisite: Six Media Studies units (this unit is only available to Bachelor of Arts (Media and Communications) students) • Corequisite: Nil • Teaching methods: Supervision • Assessment: Continuous (pass/fail only).
A unit of study in the Bachelor of Arts (Media and Communications). Selection by application only.

Aims & Objectives
The goal of the professional attachment placement is to provide students with an introduction to the media workplace, and the opportunity to test in practice the principles to which they have been introduced during the earlier parts of their course. The unit of study is also designed, via consultation with supervisors from the University and in the workplace, to offer students the opportunity to learn how to approach particular problems and to initiate the kinds of contacts which will be of use to them when they graduate from the university and attempt to set themselves up in their professional lives.

Content
This unit of study is available during semester two to a limited number of students. Those selected will be attached, after consultation, to a variety of media organisations. There they will be required, in the final year of their degree, to work under the direction of the supervising staff member. The program will be overseen by a member of the Media and Communications staff, and students will be required to keep a diary account of their attachment.

HAM315 Information Society: A Global Perspective
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAM104 Media Literature Film: Texts and Contexts or HAM105 The Media in Australia and two Stage 2 Media Studies units or equivalent. Note: there are no prerequisites for students who are required to undertake this unit of study in the BEng (Telecommunication and Internet Technologies) / BSc (Computer Science and Software Engineering) and BBlm (Networks and Computing) / BEng (Telecommunications and Internet Technologies). • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Attendance, media diary, essay, exam.
A unit of study in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Social Science; Bachelor of Social Science (Psychology); Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering); Bachelor of Multimedia (Media Studies); Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies).

Aims & Objectives
This unit of study is designed to give students a deeper understanding of the social, political, economic and cultural effects of the shift from an economy based on commodities to one based on information. Rather than focus on one nation in particular, the unit of study explores the impact of information and communications technologies (ICTs) at a global level.

Content
This unit of study is an examination of media and communications in the context of a post-industrial or information society. Key questions about the contemporary technological revolution are addressed, such as who decides about new technologies, and how, whose interests are served, how national policies are fashioned, and whose information needs will be met by these technologies of abundance. Crucial here is a variety of political, social and ethical issues, including vested territory such as ownership and control of information systems, privatisation and deregulation of broadcasting and telecommunications, corporate and community information systems and international information transfer. Considerable emphasis is placed on the methodology of investigation, analysis of reports and government inquiries, and the presentation of data and information. Students are encouraged to present their work in a form that will enable it to be available to the community.

Reading Materials

HAM316 Radio Production and Criticism B
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAM313 Radio Production and Criticism A • Corequisite: Nil • Teaching methods: Lectures and Laboratories • Assessment: Montage assignment, proposal assignment, radio documentary, participation.
A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science, Bachelor of Social Science (Psychology), Bachelor of Science (Biotechnology) / Bachelor of Arts (Media and Communications) and Bachelor of Multimedia (Media Studies).

Aims & Objectives
This course aims to extend the knowledge gained by students in HAM313 and allows students to apply and extend their production skills. Building on the skills developed in the previous semester's work, students are involved in the production of documentary and variety programs with the aim of securing broadcast airtime.

Content
The emphasis of this unit is on practical - students are encouraged to apply the theoretical knowledge of radio textual analysis to their own productions and are encouraged to constantly review their own and other's work with reference to the constructs examined in HAM313. They are also expected to keep abreast of changes and developments in the radio industry.

Recommended Reading
Strauss, N., Radio(tage), Semiotext(e), Columbia University, New York, 1993.
Hicks, M. Radio on Radio, (Audio tapes), Swinburne, 1985.
Ong, W., Orality and Literacy, Methuen, London, 1982.

HAMM440 Radio and Multimedia Research Seminar
25 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Seminars • Assessment: Class presentation 40%, Essay 60%
A unit in the Bachelor of Arts (Honours) - Media and Multimedia Strand.

Aims & Objectives
This seminar program consolidates and enhances research skills acquired during the three year undergraduate Bachelor of Arts degree. In particular, it will equip students with the critical and practical skills necessary for designing and implementing a research project at Honours level and will encourage students to situate their own research within wider academic and industry contexts.

Content
Media and Multimedia Research Seminar will operate as a series of guest lectures delivered by key Faculty academics and researchers within Media, Multimedia, Social Science and the Institute for Social Research. A schedule of proposed topics could include:
• Thesis design: What is a topic? What is a research question? What is an argument?
• Overview of key modes of media research: content analysis, discourse analysis.
• Data collection and interpretation.
• Qualitative vs quantitative methodologies.
• Approaches to web based research.
• What is research by project?
• What are the scholarly implications of thesis by project versus that by written exegesis?
• Doing policy analysis.
• The politics of social research.

Reading Materials

HAMM442 Honours Thesis A (Media and Multimedia)
25 Credit Points  • 1 Semester  • 1 Hour per Week (consultation with supervisor) • Hawthorn • Prerequisite: Nil • Teaching methods: Consultation with a supervisor • Assessment: Through the production of timelines, outlines and other project specific reports students are required to demonstrate the satisfactory progress in their ongoing development of their thesis.
A unit of study in the Bachelor of Arts (Honours) Media and Multimedia
Aims & Objectives
The aim of Thesis A is to implement and further develop skills acquired during the coursework components of the Honours program.

Content
Students work closely with their thesis supervisor on a research topic.

Reading Materials
Directed as required in liaison with supervisor.

HAP100 Australian Politics
12.5 Credit Points  • 1 Semester  • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures and tutorials • Assessment: Essays, tutorials
A unit of study in the Bachelor of Social Science, Bachelor of Social Science (Psychology), Bachelor of Arts, Bachelor of Arts (Media and Communications) and Bachelor of Arts (Psychology and Psychophysiology).

Aims & Objectives
This unit of study aims to provide a critical and analytical introduction to the Australian political system in an international context and the challenges it faces from globalisation, oppositional social movements and growing discontent among voters.

Content
Students will acquire a body of knowledge about the system of government in Australia in an international context. This will include the basic organising principles of the system, the institutions that express those principles and the processes by which voters elect representatives to transfer the people's will into responsible government.

As students move through the unit, it will be apparent that the organising principles of the system do not always deliver their intended outcomes. By examining some contemporary political issues such as citizenship and republicanism, industrial relations, the role of political parties in expressing voters' aspirations and the electoral system's ability to deliver workable parliamentary representation, the unit will test the effectiveness of those principles and assess in general terms how the system is working. It also explores the reasons many citizens have turned away from institutional politics and engaged in political activism through social movements and other organisations in civil society.

The unit will offer a broad, long-term perspective against which students can analyse and interpret not just current policy issues, but the effectiveness of the whole system.

Recommended Reading

HAP117 International Politics
12.5 Credit Points  • 1 Semester  • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Tests, Essays, Attendance
A unit of study in the Bachelor of Social Science, Bachelor of Social Science (Psychology); Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Arts (Psychology and Psychophysiology). 

Aims & Objectives
After completing this unit of study students should have developed an understanding of:
• The major institutions, events and issues in international politics.
• How political scientists analyse and explain international politics.
• The major concepts and theories used in th study of international politics.
• Students should also have developed their skills in:
  - Critically evaluating conflicting viewpoints.
  - Commencing their findings and ideas in a professional manner.

Content
The unit of study provides students with an overview of the development of world politics. It introduces analytical approaches to the subject and explores a broad range of contemporary issues. It deals with the politics of nation states, and the traditional diplomacy and security issues based on them. The unit of study also deals with the emerging structures of the global political economy and international organisations, and their impact on nation-states. While global in scope, the unit of study highlights many issues relevant to the conduct of Australian foreign affairs and trade policy.

Recommended Reading

HAP221/HAP321Modern Australia
12.5 Credit Points  • 1 Semester  • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Essays, Participation
A unit of study in the Bachelor of Social Science; Bachelor of Social Science (Psychology); Bachelor of Arts (Psychology and Psychophysiology); Bachelor of Arts (Media and Communications); and Bachelor of Arts. This unit of study may be taken at Stage 2 or Stage 3.
Aims & Objectives

This unit of study aims to provide an analytical assessment of the more dramatic developments in the Australian political system during the twentieth century.

Content

This unit of study explores the patterns of change that have shaped contemporary Australian politics. It begins by looking at the attempts to build a fairer society at the turn of the century, and at the modern social institutions which emerged from that process. It considers the impact of the Great War, of prosperity in the 1920s and depression in the 1930s and the manner in which wealth and power were shared. It then examines how the experience of these thirty years shaped the grand plans to establish a more just and secure nation after the Second World War. Through a survey of the long post-war boom, it analyses the effects of Australia’s relations with its major allies on domestic and foreign policies. The unit concludes with a study of the ways in which recent governments have tried to adapt national interests to a rapidly changing world.

Recommended Reading


HAP229/HAP329: Politics in Pacific Asia

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Politics major: HAP100 Australian Politics and HAP117 International Politics, HAP231/HAP331 Dictators, Democrats and Dynasties: Comparative Politics. As an elective: completed eight Level 1 units including HAP100 and HAP117 (recommended) • Teaching methods: One lecture (1.5 hours) and one tutorial (1.5 hours) per week • Assessment: Short essay (20%), Long essay (40%), Supervised test (30%), Tutorial attendance and participation (10%) A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science, Bachelor of Social Science (Psychology). This unit of study may be taken at Stage 2 or Stage 3. This unit of study will not be offered in 2004, but may be offered in subsequent years.

Aims & Objectives

This unit of study aims to provide students with an introduction to the politics of key Asian countries - China, Japan, India, and Indonesia - and to two key procedures in social science - hypothesis-testing and comparative analysis. After completing this unit of study, students should have:

• An understanding of key concepts of Political Science, in particular those relating to: government institutions, processes and policies; the political economy of development; political culture and ideology, including nationalism; development and democratisation.
• An understanding of the politics, economy and culture of China, Japan, India and Indonesia.
• An ability to formulate social science hypotheses and test them through appropriate and systematic country comparisons.

Content

This unit of study introduces students to four Asian countries, China, Japan, India, and Indonesia. All are of crucial importance to Australia, and are strikingly different to each other, and to Australia. The unit also introduces students to procedures of hypothesis testing and qualitative comparative analysis. Each of these countries is examined using a common framework to highlight similarities and differences and to explain them. For each country, the topics covered are: the making of the contemporary state; government institutions, processes and policies; the political economy of development; political culture and ideology, including nationalism; development and democratisation. While students are expected to gain a broad knowledge of all four countries, in their major assignment they will undertake a detailed study of one or two countries and place them in a comparative perspective.

Topics:

• Importance and diversity of Asia.
• Social science methods of analysis: hypothesis testing and the comparative analysis of states and governments.
• Chinese politics in comparative perspective.
• Japanese politics in comparative perspective.
• Indian politics in comparative perspective.
• Indonesian politics in comparative perspective.
• Four Asian states in a globalized world.

Reading Materials


Recommended Reading


HAP231/HAP331 Dictators, Democrats and Dynasties: Comparative Politics

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: For students majoring in Politics: HAP100 Australian Politics or HAP117 International Politics; other students with permission from the convenor. • Corequisite: Nil • Teaching methods: Lectures and tutorials • Assessment: Level 2 - Tests, Class presentations, 2500 word essay, Level 3 - Tests, Class presentation, 3000 word research report. A unit of study in the Bachelor of Arts, Bachelor of Social Science, Bachelor of Arts (Media and Communications), Bachelor of Social Science (Psychology). This subject can be taken at Stage 2 or 3.

Aims & Objectives

After completing this unit of study, students should have:

• An understanding of key concepts of Political Science, such as: democracy and authoritarianism; state institutions and processes; power and legitimacy; political participation, voting behaviour, and electoral systems; parties and interest groups; nationalism, political culture and ideology; dissent and revolution; political economy and political development.
• An understanding of the range of political systems and societies to be found around the world.
• A grasp of scientific method as applied to the study of political systems, namely focussed comparison, hypothesis-formation and testing.
• An understanding of how these concepts apply in detail to at least one particular case study.

Content

This unit of study provides an introduction to the comparative study of politics. It provides an overview of the world’s political systems and a conceptual framework which enables systematic analysis and comparison. The emphasis in the delivery of the unit of study is on concepts and theory, but it relates these to real-world situations through a variety of case studies.

Reading Materials


HAP233/HAP333 Comparative Asian Politics

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Politics major: HAP100 Australian Politics, HAP117 International Politics and HAP231/HAP331 Dictators, Democrats and Dynasties: Comparative Politics. Effective: completed eight Level 1 units including HAP100 Australian Politics and HAP117 International Politics (recommended) • Teaching methods: One lecture (1.5 hours) and one tutorial (1.5 hours) per week. • Assessment: Short essay (20%), major essay (40%), supervised test (30%), tutorial attendance and participation (10%) A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science, Bachelor of Social Science (Psychology). This unit of study may be taken at Stage 2 or Stage 3.

Aims & Objectives

This unit of study aims to provide students with an introduction to the politics of key Asian countries - China, Japan, India, and Indonesia - and to two key procedures in social science - hypothesis-testing and comparative analysis. After completing this unit of study, students should have:

• An understanding of key concepts of Political Science, in particular those
relating to: government institutions, processes and policies; the political economy of development; political culture and ideology, including nationalism; development and democratization.

• An understanding of the politics, economy and culture of China, Japan, India and Indonesia.

• An ability to formulate social science hypotheses and test them through appropriate and systematic country comparisons.

Content
The unit of study introduces students to four Asian countries, China, Japan, India, and Indonesia. All are of crucial importance to Australia, and are strikingly different to each other, and to Australia. The unit also introduces students to procedures of hypothesis testing and comparative analysis. Each of these countries is examined using a common framework to highlight similarities and differences and to explain them. For each country, the topics covered are: the making of the contemporary state; government institutions, processes and policies; the political economy of development; political culture and ideology, including nationalism; development and democratization. While students are expected to gain a broad knowledge of all four countries, in their major assignment they will undertake a detailed study of one or two countries and place them in a comparative perspective.

Topics:
• Importance and diversity of Asia.

• Social science methods of analysis: hypothesis testing and the comparative analysis of states and governments.

• Chinese politics in comparative perspective.

• Japanese politics in comparative perspective.

• Indian politics in comparative perspective.

• Indonesian politics in comparative perspective.

• Four Asian states in a globalized world.

Reading Materials

HAP234/HAP334 War and Peace in a Globalized World
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Politics major; HAP100 Australian Politics and HAP117 International Politics, or equivalents. Elective: completed eight Level 1 units including HAP100 Australian Politics and HAP117 International Politics (recommended) • Teaching methods: One Lecture (1.5 hours) and one tutorial (1.5 hours) • Assessment: Group project (30%), Final exam (35%), Supervisor research attendance and participation (15%) • A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science and Bachelor of Social Science (Psychology) • This unit of study may be taken at Stage 2 or Stage 3.

Aims & Objectives
This unit is intended to provide students with an understanding of the evolution of global politics since World War II and the background to contemporary issues in global politics. It focuses on conflict and conflict resolution during and after the Cold War, with particular attention to the global role of the US and to terrorism. It also aims to develop student skills in library and online research, working both individually and in groups, and in evidence-based assessment of theories of global politics.

After completing this unit of study, students should:
• Understand key concepts of Political Science, in particular those relating to world politics, globalization, and terrorism.

• Have an enhanced understanding of recent developments and contemporary issues in world politics.

• Develop their ability to undertake research using library and internet sources, and to evaluate the varied sources they find.

• Develop their ability to work in a small group on a joint research project.

• Develop their ability to evaluate theories of global politics using empirical research.

Content
This unit of study surveys global politics since 1945 to provide students with the background to contemporary issues and conflicts. It requires them to evaluate conflicting claims against empirical evidence.

Topics:
• Creating “One World”: The US plans the post-World War II world.

• One World divided: Cold War origins in retrospect.

• The collapse of the European empires and the emergence of the “Third World”.

• The course of the Cold War.

• US global power after the Cold War.

• The expansion of the global system: The turbulent transitions of post-communist countries.

• Asia’s Industrial Revolution and the changing balance of world power.

• Industry, energy and imperialism: The global politics of oil.

• The Middle East and the Arab-Israeli conflict.

• On a Mission from God: 9/11 and “war on terrorism”.

Reading Materials
McWilliams, W, & Karonowski, H, The World since 1945: A History of International Relations, 6th edn, Lynne Reinner, New York, 2005. Students who have not done HAP117 International Politics will be referred to relevant sections of the text for that unit.


References


HAPM220/HAPM326 Making News and Making Political: The Media and Politics
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Stage 2 - Exams, Class and tutorial presentations, 2500 word essay. Stage 3 - Exams, Class presentations, 3000 word research report.

A unit of study in the Bachelor of Social Science, Bachelor of Social Science (Psychology), Bachelor of Arts and Bachelor of Arts (Media and Communications). This unit of study may be taken at Stage 2 or Stage 3.

Aims & Objectives
After completing this unit of study students should have developed an understanding of:
• The role of the mass media in advanced industrial societies;

• How the media reports national and international politics;

• How contemporary political elites operate in media environments;

• The debate about the impact of the media on mass political attitudes;

• Students should also have developed their skills in research and communication.

Content
This unit of study explores the political influence of the media and political and economic elites through a critical examination of the “Propaganda Model” developed by Chomsky and Herman. This involves examining how news is produced, arguments about bias, and about the extent to which the media shape political attitudes. It includes case-studies of coverage of national Australian and international political events.

Reading Materials

HAS100 Sociology 1A (Introductory Sociology)
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Tutorial participation (10%); Tutorial presentation (5%); Study skill exercises (15%); Essays (35%); and Examination (35%).

A unit of study in the Bachelor of Social Science, Bachelor of Social Science (Psychology), Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Arts (Psychology and Psychophysiology), Bachelor of Health Science (Public and Environmental Health) and Bachelor of Science (Psychology and Psychophysiology).
### Aims & Objectives

- To introduce key theories, concepts and debates in Sociology.
- To introduce key principles of social behaviour, institutions and structure.
- To introduce the principles of sociological research.

### Content

Themes covered during the teaching period include: the sociological perspective and investigation; society; culture; socialisation; social interaction in everyday life; group and organisations; social stratification and social class; race and ethnicity; gender and sexuality; and age stratification.

### Textbooks


HAS101 Sociology 1B (Social Institutions and Social Change)

<table>
<thead>
<tr>
<th>Credit Points</th>
<th>12.5</th>
<th>Semester: 1</th>
<th>Hours per Week: Hawthorn</th>
<th>Prerequisite: HAS100 Sociology 1A (Introductory Sociology), or with permission from the unit coordinator</th>
<th>Corequisite: Nil</th>
<th>Teaching methods: Lectures and Tutorials</th>
<th>Assessment: Essay and Examination</th>
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A unit of study in the Bachelor of Social Science, Bachelor of Social Science (Psychology), Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Arts (Psychology and Psychophysiology) and Bachelor of Science (Psychology and Psychophysiology).

### Aims & Objectives

- To apply sociological theories and concepts to specific fields.
- To develop an understanding of principles of social policy.
- To develop an understanding of the comparative sociological approach.
- To understand key theories, concepts and debates in Sociology.

### Reading Materials


### Content

This course examines social institutions and social change, with particular reference to the economy, the state and families. The course focuses on Australian social institutions and social change in global perspective. It builds on the concepts and theories introduced in HAS100 Sociology 1A (Introductory Sociology).

### Aims & Objectives

- To understand the body in contemporary society as a key site of political, social, cultural and economic interventions.
- To understand issues around "excluded bodies" in struggles for citizenship and emancipation.
- To understand the role of medicine in governance and control of the body and bodies.
- To explore the experience of being in a body and the fragility of the human body.
- To examine the ways that modern technologies have altered ways of being a body and how they have transformed the way in which bodies relate to each other.
- To develop a sociological awareness of the body in society.
- To be able to understand and differentiate between different sociological theories used in the analysis of processes of social order and social control and surveillance of bodies at an individual and population level.
- To be able to analyse contemporary social issues in relation to the body.
- To have enhanced their ability to identify the social policy implications that stem from the application of a sociological perspective to this particular substantive area of study.

### Reading Materials


### HAS303 Genetics and Society

<table>
<thead>
<tr>
<th>Credit Points</th>
<th>12.5</th>
<th>Semester: 1</th>
<th>Hours per Week: Hawthorn</th>
<th>Prerequisite: HAS100 Sociology 1A (Introductory Sociology), HAS101 Sociology 1B (Social Institutions and Social Change) and at least one second year Sociology unit, or with permission from course convenor</th>
<th>Corequisite: Nil</th>
<th>Teaching methods: Lectures and Tutorials</th>
<th>Assessment: Tutorial participation, Essay, Examination</th>
</tr>
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</table>

A unit of study in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Social Science and Bachelor of Social Science (Psychology).
Aims & Objectives
As a result of studying this unit of study students can expect to develop the following:
• An understanding of the biotechnology revolution and its social implications.
• An understanding of the relevant theoretical perspectives on the social dimensions of the biotechnology revolution.
• An understanding of the policy implications of the biotechnology revolution.
• An appreciation of bioethics.

Content
• Theories of biotechnology and society.
• Dimensions of the biotechnology revolution.
• Emergent social issues: e.g. genetic paternity testing, designer babies, ageing
• Social policy
• Public attitudes
• Bioethics

Reading Materials

HAS308 Internship in Social Research
25 Credit Points • 1 Semester • 3 Hours per Week plus two days per week with employer • Hawthorn • Prerequisite: HASP308 Social Research Design: Principles and Methodology • Corequisite: N/A • Teaching methods: Weekly seminar and placement with an employer • Assessment: Seminar participation (5%), Oral Presentations (15%), Report from workplace supervisor (15%), and Research report (5000 words) (65%).

A unit of study in the Bachelor of Social Science, Bachelor of Arts, Bachelor of Social Science (Psychology) and Bachelor of Arts (Media and Communications)

Aims & Objectives
This unit aims to give students experience of social research in the workplace under the supervision of an employer. It should also help students understand the principles involved in designing and carrying out a social research project as well as providing them with practical experience in doing this.

Students will either learn, or improve their capacity to:
• Design a piece of social research.
• Identify clear research objectives.
• Consider ethical problems and gain approval from the ethics committee where appropriate.
• Set their research objectives in a context so that others can see the relevance of these objectives.
• Identify and define their key concepts.
• Operationalise these concepts in a valid and reliable manner.
• Complete a literature review.
• Develop a research argument (by posing a research question and answering it).
• Execute a sampling and data-gathering strategy.
• Execute a research plan and analyse their data.
• Write a clear and succinct research report.

Content
Research design, ethics, literature reviews, devising research questions, defining and operationalising key concepts, sampling, carrying out a research design, analysing data, writing a research report.

Recommended Reading

HASM201 eSociety: Sociology of the Electronic Age
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: One Stage 1 Sociology or Media unit • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Assignments, Examinations

A unit of study in the Bachelor of Social Science, Bachelor of Social Science (Psychology), Bachelor of Arts, Bachelor of Arts (Media and Communications) and Bachelor of Multimedia (Media Studies).

Aims & Objectives
• To develop understanding of the major effects of electronic technologies on social institutions from an international perspective.
• To develop understanding of the main sociological theories used to explain the development of electronic technologies and their social implications

Content
Major topics covered include:
• Technology and Society
• Identity
• Family and Sexuality
• Community
• Organisations
• Democracy
• Surveillance
• Social Theory

Reading Materials

HASM205/305Cultural Study Tour
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: Eight Stage 1 units (or equivalent of 100 credit points) • Teaching methods: A Winter Term unit consisting of 36 hours of face-to-face teaching over 6 weeks. Lectures will be held before the tour and upon return, with practical workshops constituting the primary teaching mode while away • Assessment: Pre-Departure Presentation (Group of 3-5): 20 minute presentation; 20%: Reflective Journal (written and/or video) and Report: During tour: 30% for Journal and 70% on Report; Final Presentation: 30% Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Multimedia (Media Studies) and Bachelor of Social Science

Aims & Objectives
HASM 205/305 Cultural Study Tour has been designed to equip students with a range of skills that will increase their employability in the increasingly globalised career market. In particular, they will develop skills and knowledge in the following areas:
• Theoretical and Practical exploration of Intercultural Communication:
• Students will critically engage with, experience and reflect upon the foundations of effective and culturally sensitive communication practices. These skills will be valuable for students wishing to pursue career paths where they will interact with individuals or organisations cross-culturally.
• Theoretical and Practical engagement with Cultural Analysis:
• As a method for real-world understanding, students will be immersed within the culture they are analysing.
• Theoretical and Practical engagement with Ethnographic Research:
• Students will learn and employ ethnographic research techniques in their analysis of the local culture. This research method not currently available to LSS, nor SUT students. This technique will require students to systematically and critically engage with the culture they are immersed within at all times. Students will develop competencies in the collection and management of material artifacts (newspapers, pamphlets, photographs where appropriate) for use in their cultural analysis.
• Team Building and Management:
• Students will be required to formally (though the assessment tasks) and informally as fellow travelers to establish and maintain effective team relations.
• Reconciling ethnographic experience with academic conventions of report:
• Students will be required to present the results of their analysis in both oral and written form. Instruction will be given as to the conventions required for utilising ethnographic data as evidence within these different forums.

In preparation for moving into current global employment markets, the skill sets developed through this multi-disciplinary approach will be entirely complementary, and will provide students with practical techniques for communicating across cultures, underpinned by a solid ethnographic understanding of how different cultures function.

Content
Students will be issued with a reading package compiled by the teaching staff. This material will provide the relevant theoretical context for the practical
activities and assessment tasks associated with this unit.

**HASP200/HASP300 Public Policy in Australia**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Tutorial Paper and Essay

A unit of study in the Bachelor of Social Science; Bachelor of Social Science (Psychology); Bachelor of Arts; Bachelor of Arts (Media and Communications); and Bachelor of Arts (Psychology/Psychophysiology). This unit of study can be taken at Stage 2 or Stage 3.

**Aims & Objectives**

To analyse public policy making processes in contemporary Australia.

**Content**

This unit of study examines how public policy is developed in Australia. After a broad, comparative overview of public policy making in the twentieth century, the unit explores some of the main theories that provide an intellectual framework for the policy making process in Australia. It considers the major players and the elaborate processes by which issues arise and are defined as public policy matters, how policies are developed, debated, implemented and finally evaluated. A number of contemporary case studies will be explored and students will be encouraged to examine an area of interest to them in the end-of-semester essay.

**Recommended Reading**


Fenna, A., Introduction to Australian Public Policy, Longman, Melbourne, 1996.

**HASP201/HASP301 Work in Australia**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Tutorial Paper and Essay

A unit of study in the Bachelor of Social Science; Bachelor of Social Science (Psychology); Bachelor of Arts; Bachelor of Arts (Media and Communications) and Bachelor of Arts (Psychology and Psychophysiology). This unit of study can be taken at Stage 2 or Stage 3.

**Aims & Objectives**

To analyse the politics of work in contemporary Australia.

**Content**

This unit of study examines the politics of work, labour markets and employment in Australia. It traces changing occupational patterns, the role of business, government and unions in the industrial relations system and how this interaction has shaped people’s experience of the workplace. It analyses the intersecting influences of gender, ethnicity, class and age on the labour market as well as the impact of globalisation, technological change and unemployment. A central theme throughout the unit is an exploration of the theories and associated political ideologies that have shaped recent labour market reform.

**Recommended Reading**


**HASP202 Social Theory**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAS100 and HAS101 (Sociology major), one Stage 1 Politics unit (Politics major), HAH100 or HAH101 (Cultural Studies major), HAS100 or HAS101 (Sociology minor) or other students to contact the convenor • Teaching methods: Lecture and Tutorials • Assessment: Tutorial participation (10%); Tutorial presentation (5%); Tutorial paper (15%); Essay (35%); and Examination (35%).

A unit of study in the Bachelor of Social Science; Bachelor of Social Science (Psychology); Bachelor of Arts and Bachelor of Arts (Media and Communications).

**Aims & Objectives**

Effective social research and policy development depend on social theory. This unit is designed to help students consolidate and extend their knowledge of social theory and to explore the ways in which it supports social policy and research.

**Content**

This unit examines the most influential schools of social thought, their sources in nineteenth century thought and their influence on present-day social thinking. The works of Marx, Weber and Durkheim and contemporary writings which build on their ideas are discussed. Feminist and postmodern theories are also examined, as are theories derived from the symbolic interactionists and the new environmental paradigm. These theoretical perspectives are analysed for their core assumptions, ideological foundations and approaches to knowledge. Class discussions are designed to enable students to link these theoretical debates to current social issues and to practical strategies of social research.

**Textbooks**


**Recommended Reading**


**HASP303 Research Project**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAS309 Social Research Design: Principles and Methodology, HAS307 Qualitative Research Methods: Corequisite: Nil • Teaching methods: Weekly seminar and independent research • Assessment: Seminar participation (10%); Oral Presentations (30%); and Research report (3000 words) (60%)

A unit of study in the Bachelor of Social Science; Bachelor of Social Science (Psychology); Bachelor of Arts and Bachelor of Arts (Media and Communications).

**Aims & Objectives**

Students will either learn, or improve their capacity to:

- Design a piece of social research.
- Identify clear research objectives.
- Consider ethical problems and gain approval from the ethics committee where appropriate.
- Set their research objectives in a context so that others can see the relevance of these objectives.
- Identify and define their key concepts.
- Operationalise these concepts in a valid and reliable manner.
- Complete a literature review.
- Develop a research argument (by posing a research question and answering it).
- Execute a sampling and data-gathering strategy.
- Execute a research plan and analyse their data.
- Write a clear and succinct research report.

**Contents**

Students will carry out the research project which they planned in either HAS308 or HAS307. Students selected for the Sociology internship program (HAS308) will conduct the research they are doing for their employer under the auspices of this unit.

**Recommended Reading**


**HASP307 Qualitative Research Methods**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: For students majoring in Sociology or Politics: HAS101 Sociology 1B (Social Institutions and Social Change); two Stage 1 and two Stage 2 units, or with permission from the unit convenor • Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Practical exercises and research proposal

A unit of study in the Bachelor of Social Science, Bachelor of Social Science.
Aims & Objectives
- To develop an appreciation of qualitative research.
- To gain a working familiarity with a range of qualitative research methods used in social research.
- To design a qualitative research project.

Content
- The foundation of qualitative research
- The ethics, politics and design of qualitative research
- The in-depth interview
- Focus groups
- Unobtrusive methods
- Ethnographic fieldwork
- Writing a research proposal
- Analysing qualitative data
- Action research

Recommended Reading

HASP309 Social Research Design: Principles and Methods
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: For students majoring in Sociology HAS100 Sociology 1A (Introductory Sociology), and two Stage 2 Sociology units. Students taking a minor in Sociology should have either HAS100 or HAS101 and two Stage 2 Sociology units. Students taking this unit as part of a Politics major should have one Stage 1 Politics unit and two Stage 2 Politics units. Students may take this unit as an elective with the approval of the convenor. Corequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Research proposal, Seminar participation, Test and Examination
A unit of study in the Bachelor of Social Science, Bachelor of Social Science (Psychology), Bachelor of Arts and Bachelor of Arts (Media and Communications). This unit replaces HASP306 Quantitative Research Methods.

Aims & Objectives
- To develop understanding of quantitative research techniques.
- To develop an understanding of research design.
- To develop understanding of the links between existing research and new research.

Content
- Objectivity and social research
- Research design and ethics
- Problems of measurement
- Questionnaires and structured interview schedules
- Computer assisted Telephone interviewing (CATI)
- Non-random samples
- Random samples
- Secondary data
- Content analysis
- Evaluation research
- Analysing data
- Writing research proposals and research reports

Reading Materials

HASP314 Sociology of Health
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAS100 Sociology 1A (Introductory Sociology) or HASH100 Australian Politics, otherwise with special permission from the unit coordinator • Teaching methods: One lecture (1.5 hours) and one tutorial (1.5 hours) • Assessment: Major essay 40%, Examination 50%, Tutorial participation 10%
A unit of study in the Bachelor of Social Science, Bachelor of Social Science (Psychology), Bachelor of Arts, and Bachelor of Arts (Media and Communications).

Aims & Objectives
- To understand both the materialist and social-constructionist theories of health and illness.
- To gain insight from epidemiological research on the unequal distribution of health, illness and death in Australia.
- To appreciate the value of examining Australian health policy and health care system in a global context.
- To analyse the social production of unhealthy bodies and develop interpretations of the nature of connections among mind, body and society.
- To evaluate the social context of ideas and experiences of health and illness.
- To understand the major recent shifts and trends in health policy and in the provision and management of health care services in Australia and elsewhere.
- To critically evaluate the impact of policy changes on health care delivery in hospitals and in the community.
- To examine social and cultural factors in the medical system's treatment of sick persons.
- To understand the political economy of health care in Australia.

On successful completion of this subject, students should have further developed their sociological awareness and their ability to analyse contemporary social, health and health-related issues. As a result of studying this unit students can expect to develop the following:
- An understanding and critical awareness of policy issues in the health care system.
- An ability to review major theoretical and ideological approaches to health policy.
- An understanding of the impact of social, political and economic factors on health and the development and implementation of health policy.
- An ability to contextualise individual health problems in a broader social framework.

Content
This unit will give students a framework for the analysis of health, health care systems and health policy. It introduces students to different sociological perspectives as well as to the meaning of social action, the experience of illness and the importance of understanding that health and illness may be as much the result of social processes as of biological ones. The social relations of health care are examined, with a particular focus on health care as it occurs in community organisations. The unit also covers an introduction to epidemiology and the measurement of mortality and morbidity, as well as occupational health and safety, and the debates surrounding deinstitutionalization. It examines the technological imperative of modern medicine and the moral and ethical issues arising from the use of advance technology. The unit will also provide a brief overview of the political economy of health care in Australia.

Reading Materials

HAT110 Australia: A Global Context
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures and tutorials and Assessment: Presentation, essay, examination
An elective unit of study available to non-local students across the Higher Education Division.

Aims & Objectives
Australia: A Global Context is a general elective unit aimed at meeting the needs of international students from across the university as well as Study Abroad students. It is designed to offer a concise introduction to Australia's history, culture and politics, with particular emphasis placed on examining Australia's changing place within the global community.

Content
Australian History: the first block provides students with a basic overview of Australian history, covering topics such as the geography and climate of Australia, Aboriginal society and its fate, the Colonial period, Federation and developments in the 20th Century. The block concludes with an overview of Australia today, focusing on population, economy and society.

Australian Culture: using historical and contemporary media representations as case studies, the second block of the unit attempts to identify some of the key
Australian Politics: The last block explores the issues, parties and personalities that combine to shape the contemporary Australian political scene. The block concludes with an overview of Australia's foreign relations today, including patterns of trade and investment, security relations and diplomacy.

Reading Materials

HAT116 Linguistics
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lecture and Tutorial (Attendance at lectures is mandatory). • Assessment: 3 Assignments 80%, Topics Report 15%, Participation 5%.

A unit of study in the Bachelor of Business and Bachelor of Arts.

Aims & Objectives
This unit introduces some of the basic concepts involved in the study of language. It is essentially concerned with the nature of language and how language makes meaning. Many languages are examined, particularly those with which students in the unit are familiar. Knowledge of another language is not required.

Content
In this unit, basic linguistic concepts are introduced which are necessary to the understanding of the mechanics of language. The topics studied include sound systems of human speech, the combination of sounds into words, the rules for combining words into sentences, the study of meaning, the role of discourse and language usage within a social system. Although most of the examples are taken from the English language, their applicability to Japanese, Korean, Italian and other languages is also explained. Students undertaking foreign language majors are highly recommended to include this unit in their course. It is also available to students not studying languages.

Textbooks

HAT119 Academic Communication Skills
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, workshops and tutorials. • Assessment: Essays, journal, classwork.

A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science and Bachelor of Social Science (Psychology).

Aims & Objectives
This unit of study is designed specifically for international students, focusing on academic skills which aid the transition to Australian tertiary academic life.

Content
The unit incorporates classes in advanced reading, research techniques, essay writing, discussion skills, analysis and criticism. These skills are taught within a framework of English as a second language. The unit examines cultural issues and values in an Australian setting. It also seeks to orient students to different disciplinary thinking by viewing these themes from different unit perspectives. It incorporates guest lecturers, language support, and a forum for problem solving for students new to Australian academic expectations.

Recommended Reading

HAT201 Writing Technical and Business Reports
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Students taking this unit of study as part of an approved elective sequence should have completed HAM113 Professional Communication Practice. • Corequisite: Nil • Teaching methods: Lectures, seminars, self-study exercises, group discussions • Assessment: Participation, Assignments, Examination.

A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science and Bachelor of Social Science (Psychology).

Aims & Objectives
This unit of study builds on the foundations of communication theory developed in HAM113 but with particular emphasis on written and verbal skills related to technical material in the work environment. The unit of study aims to help students:

- Understand the principles of writing, including plain English, grammar and punctuation.
- Organise the content of documents.
- Write for a specific audience.
- Understand the principles of usability.
- Acquire the ability to speak and write in different registers.
- Interview subject-matter experts.
- Research, plan, write and present technical and business reports in a workplace setting.

On successful completion of this unit of study, students will be able to:

- Communicate effectively using different methods, including e-mail, reports, telephone, face-to-face, and briefing.
- Analyse and write different types of documents for a specific audience.
- Understand the important differences between written and spoken English.
- Demonstrate the techniques for communicating effectively in a business context, including the ability to research, plan, organise and write a technical or business report.
- Participate effectively in meetings.
- Present information to a live audience.

Content
This unit of study focuses on research, planning, writing and presenting technical and business reports in a workplace setting. Thus it builds on the foundations of the theory of communication developed in HAM113 by giving particular emphasis to written and verbal skills relevant to technical material in the work environment. It also enhances students' understanding of the principles of writing, including plain English, grammar and punctuation. Students learn how to organise the content of documents, write for a specific audience and understand the principles of usability. They also acquire the ability to speak and write in different registers. They learn how to interview subject-matter experts, participate in meetings, and present their work orally as well as in writing.

The unit provides students with the skills to go into the workplace proficient in researching, organising and delivering information in the most appropriate manner for their content.

Reading Materials


HAY100 Psychology 100
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: HMA103 Statistics and Research Methods A • Teaching methods: Lectures and Tutorials. • Assessment: Examinations, Laboratory reports & Critical evaluation.

A unit of study in the Bachelor of Social Sciences (Psychology); Bachelor of Social Science; Bachelor of Arts (Psychology and Psychophysiology); Bachelor of Arts, Bachelor of Arts (Media and Communications); Bachelor of Science (Psychology and Psychophysiology) and Bachelor of Science (Psychology and Biochemistry).

Aims & Objectives
Psychology 101 and Psychology 102 are designed to introduce students to the content and method of psychology.

Content
Topics include:

- Psychology as a science
- Ethics in research
- Biological foundations of behaviour
- Sensation
- Perception
- Consciousness
- Learning
- Memory
- Language.
Reading Materials
Students wishing to familiarise themselves with concepts in psychology could read any recent introductory psychology text available from most regional libraries.

The text for assignments: How to Write Psychology Laboratory Reports and Essays, by Dr Bruce Freiday is highly recommended. Further details will be provided in the first lecture.

HAY101 Psychology 101
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAY100 Psychology 100, HMA103 Statistics and Research Methods A • Corequisite: Nil, unless previously unsuccessfully attempted HMA103 Statistics and Research Methods A, whereupon this unit becomes a co-requisite. • Teaching methods: Lectures and Tutorials • Assessment: Examinations, Laboratory reports.

A unit of study in the Bachelor of Social Science (Psychology) Bachelor of Social Science; Bachelor of Arts (Psychology and Psychophysiology); Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Science (Psychology and Psychophysiology) and Bachelor of Science (Psychology and Biochemistry).

Content
This unit of study concentrates on intelligence, motivation and emotion. Other topics covered include personality, sexuality, stress and coping, and psychopathology. Students are also introduced to social and developmental psychology.

Reading Materials
Students wishing to familiarise themselves with concepts in psychology could read any recent introductory psychology text available from most regional libraries.

HAY206 Developmental Psychology
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAY100 Psychology 100, HAY101 Psychology 101 and HMA103 Statistics and Research Methods A • Corequisite: HMA270 Design and Measurement 2 • Teaching methods: A two hour Lecture, and a one hour Laboratory Session each week • Assessment: Examinations, Reports

A unit of study in the Bachelor of Social Science (Psychology); Bachelor of Social Science; Bachelor of Arts (Psychology and Psychophysiology) Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Sciences (Psychology and Psychophysiology); and Bachelor of Science (Psychology and Biochemistry).

Aims & Objectives
Developmental Psychology aims to understand the processes involved in psychological growth and change with age. The focus is on social, emotional, cognitive and language development during the early periods of life from infancy and childhood through to adolescence.

Content
Topics include: biological foundations of the person, prenatal influences on development, the birth process, and children’s earliest behaviour; examination of interactions between children and their caregivers and the development of their perceptual, social and emotional abilities, development of cognitive and language skills, and their powerful influence on all aspects of children’s behaviour, development of personality and gender identity and the role played by the family, school, the media and peers in the socialisation of children. Throughout the course, the focus is on theoretical approaches to child development, with a thematic approach as opposed to a chronological approach.

Recommended Reading

HAY309 Human Information Processing
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: HAY206 • Teaching methods: Lectures, tutorial/practical sessions and project work • Assessment: Practical examination

A unit of study in the Bachelor of Social Science; Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Science (Psychology and Psychophysiology) Note: This unit of study is only available to students completing the Electronic Society major.

Aims & Objectives
This unit of study examines theories of cognitive functioning and processes, including perception, attention, memory, problem-solving, decision-making, language and aspects of learning. The aim is to provide up-to-date coverage of recent theoretical and methodological advancements in cognitive psychology.

Content
Students will be introduced to the major perspectives that define current cognitive psychology: experimental cognitive psychology, cognitive science and cognitive neuropsychology. In addition, some contemporary issues and applications of the theories will be considered.

Reading Materials

HAY303 Psychology Project A
12.5 Credit Points • 1 Semester • 14 Hours • Hawthorn • Prerequisite: Students must have completed at least 175 GU excluding IBL, and cannot be taken during IBL • Corequisite: Nil • Teaching methods: Introductory meeting (2 hrs) Regular Contact with Supervisor via Project Team meetings (1 hour per Week) Regular project work with other members of the team • Assessment: Project Management (assessed by supervisor)/Final Report

A unit of study in the Bachelor of Science

Aims & Objectives
Students who successfully complete this unit will be able to:
• Plan a complete project where time, availability of hardware and money are realistic constraints.
• Develop skills in planning and executing a major project in a relevant discipline.
• Apply knowledge acquired during the course to planning and design of a project.
• Develop their research skills.
• Conduct a literature search.
• Write a comprehensive report to detail all initial research, literature survey and the work performed.

Content
Students are expected to work on group projects in a typical group size of five (although other group sizes will be considered). The project itself must be continued and completed in second semester.

Students are expected to select a project from a list prepared by academic staff or students may suggest (for approval) their own topic based on an individual interest. Projects should be based around a psychology field (eg social psychology, developmental psychology, personality abnormal psychology etc.) but may be multidisciplinary in nature.

The project may be university or community based. It may take various forms in which technology, research and development, experimental work, computer analysis, and community liaison vary in relative significance. It is expected that the project will involve a substantial issue relevant to psychological science. Students are expected to conduct literature surveys, to investigate probable solutions, prepare designs, and analyse data in consultation with the supervisor.

Reading Materials
As recommended by the supervisor to support the students’ project.

HAY305 Psychology Project B
12.5 Credit Points • 1 Semester • 14 Hours • Hawthorn • Prerequisite: HAY303. Except in exceptional circumstances, HAY303 and HAY305 must be completed in one 12-month period • Corequisite: Nil • Teaching methods: Introductory meeting (2 hrs) Regular Contact with Supervisor via Project Team meetings (1 hour per Week) Regular project work with other members of the team • Assessment: Project Management (assessed by supervisor) The assessment of the unit is based on completion of the project, a poster presentation and a written report detailing all the work undertaken in the Psychology Project units A and B.

A unit of study in the Bachelor of Science

Aims & Objectives
• To develop skills in planning and completing a major project in a psychological field (eg social psychology, developmental psychology, personality abnormal psychology etc.). This project may be interdisciplinary in nature.
• To develop skills in preparing a major project report.
• To apply knowledge acquired during the course.
• To prepare and present a professional seminar on the project.
Content
Students are expected to continue with the project selected during HAYXXX. The project may be university- or community-based. It may take various forms in which technology, research and development, experimental work, computer analysis, and community liaison vary in relative significance. It is expected that the project will address a substantial issue relevant to psychological sciences. Students are expected to, to investigate probable solutions, prepare designs, and analyse data in consultation with the supervisor.

Reading Materials As recommended by the supervisor to support the students' project.

HAY307 Social Psychology
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HMA279 Design and Measurement 3, HAY206 Cognition and Human Performance or HAY206 Developmental Psychology • Corequisite: Nil • Teaching methods: Lectures and Tutorial/Practical Sessions • Assessment: Examination, Practical report
A unit of study in the Bachelor of Social Science; Bachelor of Social Science (Psychology); Bachelor of Arts (Psychology and Psychophysiology); Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Science (Psychology/Psychophysiology) and Bachelor of Science (Psychology and Biochemistry).

Aims & Objectives
This unit of study involves the scientific study of behaviour in a social context. The aim is to introduce students to the key theories and research methods used by social scientists to explain peoples' thoughts, feelings and actions in social situations.

Content
The unit covers the history, methods and ethics of social psychology and the areas of social cognition, attributions, attitudes, prejudice and stereotypes, social influence, attraction and relationships, and group processes. Some areas to which social psychological knowledge is often applied, such as culture, health and law, are also covered.

Recommended Reading

HAY308 The Psychology of Personality
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HMA279 Design and Measurement 3, HAY206 Cognition and Human Performance or HAY206 Developmental Psychology • Corequisite: Nil, unless previously unsuccessfully attempted HMA279 Design and Measurement 3 • Teaching methods: Lectures and Tutorials • Assessment: Examinations, Practical report
A unit of study in the Bachelor of Social Science (Psychology); Bachelor of Social Science; Bachelor of Arts; Bachelor of Arts (Psychology and Psychophysiology); Bachelor of Arts (Media and Communications); and Bachelor of Science (Psychology and Biochemistry).

Aims & Objectives
Having completed this unit, students should be able to do the following:
- Explain the main features of some of the major approaches to the psychology of personality (psychodynamic - i.e. psychoanalytic/neurolanalysis; the trait approach, the social - learning and social - cognitive approaches, and the motivational and narrative approaches)
- Be able to describe basic elements of historically important theories within each perspective.
- Be able to discuss some major elements of contemporary theories within each perspective.
- Be able to critically evaluate how various approaches to personality explain specific issues such as the unconscious, the self, personality change, the effect of early childhood experiences, the effect of motivation on personality.

Content
Four major perspectives on personality are examined:
- Psychodynamic
- Dispositional
- Environmental
- Representational

Issues such as methods of personality assessment and research strategies are also considered. Selected contemporary issues are also examined, including developments in areas such as psychodynamic theory and cognitive, social and narrative views of self.

Recommended Reading

HAY309 Psychological Measurement
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HMA279 Design and Measurement 3, HAY206 Cognition and Human Performance or HAY206 Developmental Psychology • Teaching methods: Lectures and Laboratory Work • Assessment: Research project, Examinations.
A unit of study in the Bachelor of Social Science (Psychology); Bachelor of Social Science (Psychology and Psychophysiology); Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Science (Psychology and Psychophysiology); and Bachelor of Science (Psychology and Biochemistry).

Aims & Objectives
The aim of this unit of study is to provide students with an understanding of the theories and methods of psychological testing.

Content
Theories and methods of assessing psychometric properties of psychological tests; test construction; administration and scoring of tests; evaluating the reliability and validity of tests; how to interpret test results according to norms and standard scores.

Recommended Reading

HAY310 Social and Personal Relationships
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures and Tutorial/Practical Sessions • Assessment: Examination, Essays, Critical review
A unit of study in the Bachelor of Social Science and Bachelor of Arts.

Aims & Objectives
This unit of study involves the scientific study of behaviour in a social context. The aim is to introduce students to the key theories and research methods used by social scientists to explain peoples' thoughts, feelings and actions in social situations.

Content
The course covers the history, methods and ethics of social psychology and the areas of social cognition, attributions, attitudes, prejudice and stereotypes, social influence, attraction and relationships, and group processes. Some areas to which social psychological knowledge is often applied, such as culture, health and law, are also covered.

Recommended Reading

HAY321 Abnormal Psychology
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HMA279 Design and Measurement 2, HAY205 Cognition and Human Performance or HAY206 Developmental Psychology • Teaching methods: Lectures and Tutorials • Assessment: Essays, examinations, class presentations
A unit of study in the Bachelor of Social Science; Bachelor of Social Science (Psychology); Bachelor of Arts (Psychology/Psychophysiology); Bachelor of Arts; Bachelor of Arts (Media and Communications); and Bachelor of Science (Psychology and Psychophysiology).

Aims & Objectives
The unit of study is designed to introduce students to the ways in which human behavioural patterns have been conceptualised as 'abnormal' or dysfunctional. In examining such abnormal behaviours, students are introduced to major systems of classifying mental disorders, in particular the multiaxial system adopted in DSM-IV-TR. The unit focuses on major examples of psychological disorders in terms of their phenomenology and nosology, as well as theories
about aetiology.

Content
The general approach taken to understanding disorders is multidimensional, seeking to integrate information from biological, sociocultural and psychological research. Specific disorders examined may include: schizophrenia; affective disorders; anxiety disorders; eating disorders; substance-related disorders; disorders first diagnosed in childhood and adolescence; dissociative disorders; intellectual disability and personality disorders. Additional topics covered may include suicide, violent behaviours, mental disorders and the law.

Reading Materials

HAY470 Thesis A
12.5 Credit Points • 1 Semester • 1 supervised hour per week, 2 x 2 hour sessions • Hawthorn: Prerequisite: An APS accredited three year undergraduate major in psychology or its equivalent. • Teaching methods: Face to face supervision meetings and two 2/3 hour sessions. • Assessment: Students must submit a satisfactory literature survey assignment, thesis outline with research aims/hypotheses and pass their thesis proposal presentation. A unit of study in the Bachelor of Arts (Honours) - Psychology stream.

Aims & Objectives
The unit of study aims to facilitate students to design and develop their fourth year thesis project. They will become familiar with the steps necessary and issues to consider when obtaining ethics clearance for their project. They will prepare and deliver their thesis research proposal.

Content
An introductory lecture/seminar that provides an overview of research processes and different research paradigms. A workshop will familiarise students with practicalities relating to their thesis research such as obtaining ethics approval for their project and the format of the thesis. In order to pass the unit, students are required to participate and attend both workshops. They are also required to present their thesis project at the mini-conference to a satisfactory standard, complete a brief summary of their research proposal, and complete a literature review of key references.

Recommended Reading

HBC110 Accounting for Success
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Class participation 5%, Tests 30%, Examination 65% A unit of study in the Bachelor of Business, Bachelor of Engineering (Civil Engineering) / Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business, Bachelor of Technology (Aviation) / Bachelor of Business, Bachelor of Technology (Air Transportation Management) / Bachelor of Business and Bachelor of Science (Biotechnology) / Bachelor of Business.

Aims & Objectives
A basic introduction to accounting concepts, financial accounting, management accounting and finance.

Content
Accounting theory and practice are examined in an historical cost accounting system. This unit of study includes the following topics:

- An introduction to accounting and financial statements.
- Revenue and expenses, cost classification.
- Cash flow statements.
- Internal performance evaluation.
- Working capital management.
- Capital structure and leverage.
- Cost, volume, profit analysis.

Where appropriate, ethical considerations will be addressed.

References

HBC220 Financial Information Systems
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBC110 Accounting for Success • Corequisite: Nil • Teaching methods: Lecture, Tutorial & Computer Laboratory. • Assessment: Practice set 25%, Mid Semester Test 20%, Examination 50%, Tutorial participation 5%. A unit of study in the Bachelor of Business.

Aims & Objectives
To enable students to design, operate and control a simple accounting system, whether manual or computer-based, that provides an efficient and effective flow of financial information. To reinforce the theoretical concepts and to provide a practical demonstration of their mastery of the concepts, students are required to prepare a set of accounting records and financial statements for a small business, using both manual and computer-based systems. The computerised processing of information is examined with a student version of the accounting package QuickBooks.

Content
The main topics covered in this unit are:

- Double entry accounting: Manual recording; Computerised recording using QuickBooks.
- Balance day adjustments.
- General and special journals.
- Internal control of working capital.
- Ethical considerations of business.
- Receivables and Liabilities.
- Internal control of non-current assets.
- Revaluation and disposal of non-current assets.
- Cash control.
- Accounting for manufacturing businesses.
- Inventory recording and valuation.
- Business ownership, profit distribution for companies.

References

HBC221 Corporate Accounting
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBC110 Accounting for Success and HBC220 Financial Information Systems. HBL221 Company Law is Highly recommended • Corequisite: HBL221 Company Law is highly recommended • Teaching methods: Lecture and Tutorial • Assessment: Assignment 15%; Tests 30%; Examination 60%. A unit of study in the Bachelor of Business.

Aims & Objectives
The overall objective of the unit is to develop an ability to think through corporate accounting issues, specifically:

- To develop an awareness of the financial accounting function within a company.
- To develop students' problem-solving abilities in the application of the principles of corporate accounting.
- To develop students' awareness of contemporary issues in the practice of financial accounting, by reference to actual situations where appropriate.
- To develop students' independent research skills with the assignment of research areas within the course.
• To develop students' awareness of the interrelationship between corporate accounting and corporate law.

Content
The unit covers the following areas:
• Share capital and other forms of finance.
• Business combinations, including amalgamations, mergers and takeovers.
• Group accounting (Particular emphasis is placed on this topic. It includes the preparation of consolidated accounts, equity accounting and joint ventures).
• Availability of profits for distribution.
• Presentation of financial reports.
• Reconstruction and Company liquidation.
• Tax Effect Accounting.

References
Australian Corporations Legislation, Current edn.
Australian Accounting Standards, Current edn.

HBC222 Management Decision Making
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak
Prerequisite: HBC110 Accounting for Success • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Tutorial participation 5%; Assignment 20%, Test 25%, Examination 50%.
A unit of study in the Bachelor of Business, and an elective in the Bachelor of Technology (Aviation)/Bachelor of Business and Bachelor of Technology (Air Transportation Management)/Bachelor of Business.

Aims & Objectives
To introduce students to the role of accounting in the planning and decision-making functions of the management process.

Content
Topics covered include basic cost concepts, cost-volume-profit analysis, cost allocation issues, in both manufacturing and services, budgeting, profitability analysis and the analysis of costs for decision-making.

Students will be encouraged to:
• Utilise micro-computer-based techniques for solving problems.
• Focus on the relevance of accounting information to management information needs.
• Critically evaluate traditional management accounting theory and practice against the contemporary literature on activity-based costing and the new technologies.

References
Hansen, DR & Mowen, MM 2000, Management Accounting, 5th edn, Cincinnatti, South Western.

HBC223 Analysis for Competitive Advantage
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak
Prerequisite: HBC110 Accounting for Success and HBC222 Management Decision Making • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Tutorial participation 10%, Assignment 20%, Test 20%, Examination 50%.
A unit of study in the Bachelor of Business.

Aims & Objectives
Students will understand the nature of competitive strategy and the management accounting tools and techniques to assist in formulating and evaluating business strategy. The emphasis will be on developing analytical skills and focusing on performance evaluation.

Content
Topics covered include:
• Introduction to business strategy.
• Quality and theory of constraints.
• Cost systems.
• Functional performance evaluation.
• Strategic performance evaluation.

References
Australian Corporations Legislation, Current edn.
Australian Accounting Standards, Current edn.

HBC224 Financial Management
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak
Prerequisite: HBC110 Accounting for Success and HMB110 Quantitative Analysis for HMB111 Quantitative Analysis B or HMB141 or equivalent. This unit must be attempted as a second year unit. • Teaching methods: Lecture and Tutorial • Assessment: Class participation 5%; Tests 30%, Examinations 65%.
A unit of study in the Bachelor of Business, and an elective in the Bachelor of Technology (Aviation)/Bachelor of Business and Bachelor of Technology (Air Transportation Management)/Bachelor of Business.

Aims & Objectives
The objectives of this unit are:
• To provide students with an understanding of the concepts of corporate finance.
• To develop in students the skills of analysis and evaluation needed to apply the concepts of corporate finance to financial management.

Content
The unit is structured from the point of view of orientating the student to the fundamentals of managing the financing and investment aspects of a business and covers the following specific topics:
• Concepts of valuation.
• Evaluation and selection of investment projects.
• Cost of capital.
• Sources of finance and financial intermediaries.
• Dividend policy.
• Financing methods and impact on capital structure.

References

HBC225 Auditing and Assurance
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak
Prerequisite: HBC110 Accounting for Success and HBC221 Corporate Accounting • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Tests 20%, Assignments 20%, Examination 60%.
A unit of study in the Bachelor of Business.

Aims & Objectives
The broad objective of this unit is to familiarise students with the underlying concepts, objectives and reporting function of the auditor. The unit deals with both theoretical and practical aspects of auditing. The aim is to integrate the concepts of auditing with practical approaches taken by the auditor to ensure students gain a complete picture of the audit process.

Content
Theoretical topics studied include auditing methodology and the formulation of auditing standards, audit independence, the rights, duties and legal liability of auditors; ethical considerations; the audit report and the concept of risk, materiality and audit evidence, encompassing a review of internal control structures and the attendant control risk. Consideration is given to the impact of auditing in a CIS environment and different sampling methodologies. Students are given a hands-on appreciation of the use of generalised audit software in a case-study assignment. Students are also introduced to the area of public sector auditing.
Aims & Objectives

The purpose of this unit is to help participants learn how to manage their money and develop skills to be better able to advise others in managing their investments. To achieve this purpose it is necessary to learn about the investment alternatives available today and, more importantly, to develop a way of thinking about investments that will remain in the years ahead when new investment opportunities arise as a result of changes to our financial system.

More specifically, the unit objectives are:

- To acquaint participants with the various avenues for the investment of funds, including shares, fixed-interest securities and property.
- To review the impact of taxation on investment planning.
- To consider the fundamental principles of modern portfolio theory.
- To consider the process of portfolio selection and ongoing investment strategies.
- To review the characteristics of financial futures and options and how they may be used to modify the risk-return profile of investment portfolios.

Content

- Taxation and the investor.
- Portfolio theory.
- Efficient markets.
- Fundamental and technical analysis.
- Interest-bearing investments.
- Managed investments and performance evaluations.
- Real estate.
- Warrants, rights and convertible securities.
- Options and futures.
- Superannuation.
- Financial planning and investment advice.

References


Aims & Objectives

The objectives of this unit are:

- To examine the development of accounting theory and the methodology used by accounting theorists.
- To describe and critically analyse a framework of accounting concepts, including assets, liabilities and income.
- To use the methodology and framework developed in the subject to study specific issues in financial accounting, including the development of accounting standards, measurement issues, enterprise governance and corporate social reporting.
- To consider the impact of accounting theories on the implementation and use of a range of accounting standards.

Although the unit is concerned with theory, considerable use is made of practical problems to illustrate the application of theory.

Content

Topics include:

- The nature and development of accounting theories.
- The standard-setting process.
- The conceptual framework.
- Income theory and measurement issues.
- Several specific standards are also to highlight the application of theory.
- Enterprise governance and Corporate social reporting.

References


Textbooks


HBC230 Personal Investment

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn
Prerequisite: HBC224 Financial Management recommended • Corequisite: HBC224 Financial Management • Teaching methods: Lecture and Tutorial • Assessment: Assignments 20%; Exams 20%; Participation 10%; Examination 50%.

A unit of study in the Bachelor of Business.

Note: Students should not undertake this unit if they have completed HBC338.

Aims & Objectives

The purpose of this unit is to help participants learn how to manage their money and develop skills to be better able to advise others in managing their investments. To achieve this purpose it is necessary to learn about the investment alternatives available today and, more importantly, to develop a way of thinking about investments that will remain in the years ahead when new investment opportunities arise as a result of changes to our financial system.

More specifically, the unit objectives are:

- To acquaint participants with the various avenues for the investment of funds, including shares, fixed-interest securities and property.
- To review the impact of taxation on investment planning.
- To consider the fundamental principles of modern portfolio theory.
- To consider the process of portfolio selection and ongoing investment strategies.
- To review the characteristics of financial futures and options and how they may be used to modify the risk-return profile of investment portfolios.

Content

- Taxation and the investor.
- Portfolio theory.
- Efficient markets.
- Fundamental and technical analysis.
- Interest-bearing investments.
- Managed investments and performance evaluations.
- Real estate.
- Warrants, rights and convertible securities.
- Options and futures.
- Superannuation.
- Financial planning and investment advice.

References


HBC330 Current Issues in Accounting

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn
Prerequisite: HBC227 Corporate Accounting, HBC222 Management Decision Making, and HBC225 Auditing and Assurance. HBL220 Contract Law and HBL221 Company Law are also highly recommended • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Essay 20%; Exams 20%; Examination 60%.

A unit of study in the Bachelor of Business.

Note: As a capstone unit in the Accounting major, students must study this unit in their final semester of the course.

Aims & Objectives

The objectives of this unit are:

- To examine the development of accounting theory and the methodology used by accounting theorists.
- To describe and critically analyse a framework of accounting concepts, including assets, liabilities and income.
- To use the methodology and framework developed in the subject to study specific issues in financial accounting, including the development of accounting standards, measurement issues, enterprise governance and corporate social reporting.
- To consider the impact of accounting theories on the implementation and use of a range of accounting standards.

Although the unit is concerned with theory, considerable use is made of practical problems to illustrate the application of theory.

Content

Topics include:

- The nature and development of accounting theories.
- The standard-setting process.
- The conceptual framework.
- Income theory and measurement issues.
- Several specific standards are also to highlight the application of theory.
- Enterprise governance and Corporate social reporting.

References

Barkoczy, S, Australian Tax Casebook, Current edn, CCH Aust Ltd.
Barkoczy, S, Australian Tax Casebook, Current edn, CCH Aust Ltd.

HBC339 Financial Risk Management

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn
Prerequisite: HBC224 Financial Management • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Tests 30%; Examination 70%.

A unit of study in the Bachelor of Business.

Note: Students should not undertake this unit if they have completed HBC227 Financial Risk Management.

Aims & Objectives

The unit examines the nature of risk in the context of financial decisions and the techniques used by management to identify and manage the risks.

Content

Specific topics include project risk analysis, options, futures and forwards, credit risk in financial institutions, swaps. Managing interest rate risk, foreign exchange risk, and portfolio risk.

Textbooks

References
Educational Publishers.

HBC410 Accounting Honours Dissertation
60 Credit Points • 1 Semester (full-time) • Consultation with supervisor • Hawthorn • Prerequisite: HBC415 Research Methodology and HBC411 Accounting Advanced Reading Unit • Teaching methods: Supervision • Assessment: Written Dissertation
A unit of study in the Bachelor of Business (Honours).

Aims & Objectives
Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this subject is a dissertation based on an original theoretical or applied problem. The dissertation will demonstrate the candidate’s ability to conceptualise, undertake and present a research project, based on published theory, in a scholarly and independent manner. The dissertation will provide a coherent explanation of the research study and follow an ordered sequence in which the research objectives, relationship to other scholarly work, methodology and strategies employed, and the results obtained are identified, analysed and evaluated. The topic of the dissertation, while being set by the student, must be consistent with the broad content of the discipline within which the research has been taken and the student's capacity to complete research into the topic in the prescribed time.

Content
Normally, a student will produce a written, minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBC411 Advanced Reading Unit and with the quality expectations that are carried with a work of this kind. The dissertation will include:
- A statement of the research topic and background to the study.
- A current literature review.
- Research questions or hypotheses.
- Cogent argument.
- Clear conclusions and, if necessary, appropriate recommendations.

References
References will be discipline specific

HBC411 Accounting Advanced Reading Unit
20 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn • Prerequisite: Nil • Teaching methods: Regular meetings with supervisor • Assessment: Literature review 100%. Seminar presentation of the Honours dissertation proposal and written Honours dissertation proposal are hurdle requirements.
A unit of study in the Bachelor of Business (Honours).

Aims & Objectives
This unit of study is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks. The aims of this unit are to provide students with an opportunity:
- To explore the breadth and depth of their chosen area of study.
- To use an exploratory approach as a means of arriving at a viable topic for their dissertation.

Students undertaking the language component will be required to read part of the prescribed reading in the chosen language.

Content
Students will be expected to read widely in their area of study from a variety of sources including texts and journal articles. The purpose of the readings is to engage the student in a critical appraisal of the material and to develop further their research instincts, as well as providing a foundation for the dissertation.

References
References will be discipline specific

HBE110 Microeconomics
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn; Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Assignments 20%, Test 20%, Final examination 60%. A unit of study in the Bachelor of Business, Bachelor of Engineering (Civil Engineering) / Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business, Bachelor of Science (Biotechnology) / Bachelor of Business, Bachelor of Technology (Aviation) / Bachelor of Business of Engineering, Bachelor of Science, Bachelor of Technology.

Aims & Objectives
To introduce key microeconomic concepts and to encourage and assist students to apply effective economic reasoning to issues facing business, government and consumers.

Content
The unit commences with an examination of the methodology of economics, the nature of the economising problem, and the facilitating role of markets. The tools of analysis developed in the early part of the unit are applied to a number of economic and social questions, such as pricing and output decisions of firms and the role of government in a market economy.

References
McTaggart, D, Findlay, C & Parkin, M 2002, Microeconomics, 4th edn, Sydney, Addison Wesley.

HBE220 Macroeconomics
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBE110 Microeconomics • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Multiple-choice test 20%, Tutorial workshops 10%; Class test 20%; Final examination 50%. A subject in the Bachelor of Business.

Aims & Objectives
To provide business students with an understanding and appreciation of macroeconomic concepts, issues and policies pertaining to Australian and global economies.

Content
This unit introduces students to key macroeconomic concepts, issues and policies. Emphasis is on current issues and policies. A basic macroeconomic model is developed and applied to issues such as inflation, unemployment and external imbalance and is used to demonstrate the impact of government macroeconomic policies (fiscal, monetary and microeconomic reform) on Australian business and the economy. Students are introduced to the financial market, financial deregulation and Australia’s international business environment.
Hatch, J., Smelling, J & Cowie, J 2005, Reading between the lines, Issue 8, Pearson Education Australia

HBE228 Banking and Financial Markets
12.5 Credit Points • 1 Semester • 2.5 Hours per Week • Hawthorn • Prerequisite: HBE110 Microeconomics and HBE220 Macroeconomics • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Test and presentation 20%, Assignment and presentation 20%, Final Exam 60% • A unit of study in the Bachelor of Business.

Aims & Objectives
The intention of this unit is to provide students with a basic financial vocabulary and skills to enable analysis of financial data and text. The unit offers students foundation skills prior to taking more specialised finance units.

Content
The Australian Financial Market:
• The Payment System
• Its workings and performance
Regulation of Australia’s Financial Markets:
• ARRA’s role and performance
• ASIC’s role and performance
Debt Markets:
• Direct and indirect financing
• Short- and long-term securities
Retail Banking
Wholesale Banking
Equity Markets:
• The ASX and role of the stockmarket
• Listing on the ASX
• Trading on the ASX
• Analysis of share prices and other financial data

Reading Materials
Hunt, B & Terry, C. 2005, Financial Institutions and Markets, Thomson Australia
Useful websites:
http://www.asx.com.au
http://www.sbs.gov.au
http://www.sff.com
http://www.bwr.com
http://www.tba.gov.au
http://www.treasury.gov.au
http://www.comnsec.com.au

HBE333 Financial Institutions and Monetary Policy
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBE110 Microeconomics and HBE220 Macroeconomics, HBE228 Banking and Financial Markets • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Test 40%, Final examination 60% • A unit of study in the Bachelor of Business.

Aims & Objectives
To provide students with:
• An up-to-date view of Australian financial intermediaries, their nature, evolution and operation in a changing regulatory and business environment.
• An appreciation and understanding of the application of monetary policy, its origins and current controversies.

Content
The unit covers:
• The development, regulation, deregulation and performance of the Australian financial system.
• Correlation with changes in economic ideas and theories from neo-classicism, through to economic rationalism.
• The arguments for laissez-faire are analysed and compared (theoretically and historically) with those for controls.
• Controversies in theory and practice (e.g. Keynesianism versus monetarism; and the Cambridge Capital controversy).
• Demand for and supply of money, its creation, velocity and stability.
• The roles of the private and public sectors in relation to the money supply.
• Future trends, prospects and performance.

References
Bruce, R. 2003, Handbook of Australian Corporate Finance, 5th edn, Sydney, Butterworths.

HBE335 International Finance
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBE110 Microeconomics and HBE220 Macroeconomics or their equivalent • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Tutorial presentations 10%, Tests 30%, Final examination 60% • A unit of study in the Bachelor of Business, Bachelor of Economics, Bachelor of Business (International Business). An elective unit of study for Engineering and Arts students.

Aims & Objectives
The intention in this unit is to provide students with the theoretical and analytical skills necessary to understand and evaluate international financial issues of importance to the Australian business community and government.

At completion of this unit, students should be able to:
• Understand the workings of foreign exchange markets and international finance markets.
• Demonstrate skills involving collection, interpretation and critical analysis of international financial data.
• Express an understanding of key economic concepts essential for successful international operations.
• Evaluate and analyse the risks for businesses operating in the global environment.
• Demonstrate analytical and research skills to enhance problem solving abilities.

Content
International finance issues are examined from both theoretical and practical perspectives. Topics covered include:
• The international financial environment.
• Exchange rate systems and theories.
• The operation of foreign exchange markets.
• Foreign exchange risk management.
• International portfolio theory.
• International debt and equity markets.

Textbooks

References
Shapiro, A.C., 2006, Multinational Financial Management, 8th edn, Wiley.

HBF410 Finance Honours Dissertation
60 Credit Points • 1 Semester (full-time) • Consultation with supervisor • Hawthorn • Prerequisite: HBF415 Research Methodology and HBE220 Microeconomics • Corequisite: Nil • Teaching methods: Supervision • Assessment: Written Dissertation • A unit of study in the Bachelor of Business (Honours).

Aims & Objectives
Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this subject is a dissertation based on an original theoretical or applied problem.

The dissertation will demonstrate the candidate’s ability to conceptualise, undertake and present a research project, based on published theory, in a scholarly and independent manner.
The dissertation will provide a coherent explanation of the research study and follow an ordered sequence in which the research objectives, relationship to other scholarly work, methodology and strategies employed, and the results obtained are identified, analysed and evaluated. The topic of the dissertation, while being set by the student, must be consistent with the broad content of the discipline within which the research has been taken and the student’s capacity to complete research into the topic in the prescribed time.

After completing this unit students will have developed the ability to:
- Formulate a manageable and realistic research topic and plan.
- Undertake various forms of primary and secondary research.
- Analyse the literature and/or data collected.
- Compose a comprehensive and concise report that relates research findings to the research topic and previous published research, if appropriate.
- Formulate conclusion and recommendations and provide directions for future research.

Content
Normally, a student will produce a written minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBF411 Advanced Reading Unit and with the quality expectations that are carried with a work of this kind.

The dissertation will include:
- A statement of the research topic and background to the study.
- A current literature review.
- Research questions or hypotheses.
- Cogent argument.
- Clear conclusions and, if necessary, appropriate recommendations.

Reading Materials
References will be discipline specific.

HBF411 Finance Advanced Reading Unit
20 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Literature review 100%. Seminar presentation of the Honours dissertation proposal and written Honours dissertation proposal are handle requirements.

Aims & Objectives
This unit is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks.

The aims of this unit are to provide students with an opportunity:
- To explore the breadth and depth of their chosen area of study.
- To use an exploratory approach as a means of arriving at a viable topic for their dissertation.
- Students undertaking the language component will be required to read part of the prescribed reading in the chosen language.

Content
Students will be expected to read widely in their area of study from a variety of sources, including texts and journal articles. The purpose of the readings is to engage the student in a critical appraisal of the material and to develop further their research instincts, as well as providing a foundation for the dissertation.

References
References will be discipline specific.

HBBG004 Careers in the Curriculum
0 Credit Points • 1 Semester • 1 Hour per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Class • Assessment: Assignments
A unit of study in the Bachelor of Business, Bachelor of Business / Bachelor of Arts (Japanese) and Bachelor of Business / Bachelor of Arts (Italian).

Aims & Objectives
To introduce career planning and career management skills to students.

Content
- Self Awareness: Identification of employment-related skills, interests and values.
- Opportunity Awareness: Research and understand significant aspects of work such as the range of jobs available, further training options.
- Job Hunting: Develop and implement skills in resumes and cover letter writing, interviews, networking and Assessment Centre participation.

Reading Materials

HBBG200 Business Communication
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Classes and Workshops • Assessment: Academic journal 20%, Student meeting 10%, Library Resource Guide 20%, Project presentation 40%, Project and class participation 10%
A unit of study in the Bachelor of Business.
Note: Students should not undertake this unit if they have completed HBBG100 Business Communication.

Aims & Objectives
- To introduce students to the concept of a discourse community and their voice within that community.
- To provide second-language speakers with an opportunity to increase their skills, motivation, independence and confidence in using English by participating in a student-centred developmental program. The central focus will be a project where they will be encouraged to gain control of the English-speaking environment around them in order to produce an authentic product.
- To make strategic use of critical thinking activities, communicative language tasks and student-organised meetings to build decision-making confidence.
- To guide students to recognise and aim for culturally based practices and standards that they have decided they need to fulfill both their short-term and long-term goals.
- To lead the students to develop appropriate criteria for evaluating themselves in the project and the subject as a whole.

Content
Students are required to work in syndicates to design a project which showcases the richness of the cultural mix and the talents of the students in the Faculty of Business at Swinburne University. The project will be based on an authentic business or social problem and will be presented in the form of a proposal.

References
Readings taken from core unit texts.

HBBG270 eBusiness
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBBG110 The Marketing Concept and HIT1041 /HET113 The Internet and World Wide Web 1 • Corequisite: Nil • Teaching methods: Lecture, Computer Lab, Online Interaction • Assessment: Take-home examination 60%; Online participation 40%
A unit of study in the Bachelor of Business and the Bachelor of Multimedia (Business Marketing).
Note: Students should not undertake this unit if they have completed HBBG230 Electronic Marketing or HMB270 eBusiness.

Aims & Objectives
To facilitate understanding of the broad spectrum of eBusiness, specifically, to examine the changes made possible in business practice and procedures brought about by the diffusion of powerful micro-computers, the extensive software applications they run and the extensive and pervasive networks, such as the Internet, that connect them. To develop an appreciation of how these end-to-end enterprise-wide technologies have, or may, change the way business is conducted.

Content
- Overview of eBusiness and Trend Spotting
- eBusiness Architecture
- Enterprise Resource Planning
- Supply Chain Management
eProcurement
Knowledge Discovery and Knowledge Management
Customer Relationship Management and Sales Chain Management
The eBusiness Design
Translation and Implementation

Textbooks

References

HGB300 IBL Integrating Project
12.5 Credit Points • 1 Semester • 2 x 3 hour workshops and regular meetings • Hawthorn • Prerequisite: Commencement of first semester of degree preferred or final year acceptable. Completion of HGB300 Industry Placement or its equivalent. • Corequisite: Nil • Teaching methods: Workshops; Meetings with academic mentor and employer supervisor; Class materials with web support. • Assessment: 8,000 word report, supported by presentation, Progress report at mid-semester a hurdle requirement.
A unit of study in the Bachelor of Business.

Aims & Objectives
The unit aims to build on workplace experience. The objective is to develop a project, in liaison with the employer and academic mentor, that will address a real issue identified by the student and facing the employer.

Content
Integrating project is individual in design. Content will vary from project to project.

Textbooks

References

HBBH110 Organisation and Management
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: The teaching approach in this subject consists of lectures followed by active learning in project teams • Assessment: Individual paper (25%), Group Presentation (25%), Exam (50%)
A unit of study in the Bachelor of Business, Bachelor of Engineering (Civil Engineering) / Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business and Bachelor of Science (Biototechnology) / Bachelor of Business.

Aims & Objectives
The unit aims to give experience and understanding of the issues facing managers in organisations and the contexts in which they operate. By the end of the program, students will understand and appreciate the dynamic interrelationship between organisational structure, strategy, culture, team development and external environment.

Content
The unit introduces students to the concepts of organisational structure, strategy, culture, team development and external environment and the dynamic interrelationship between these concepts

Textbooks
To be advised.

References
Selected journal articles and readings as recommended during the program.


HBBH220 Organisational Behaviour and Change
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBBH110 Organisation and Management • Corequisite: Nil • Teaching methods: Presentation of theoretical material, discussions, activities and experiential exercises during the first 2 hours. The third hour is spent with students engaging in group work. • Assessment: Individual KOLB Paper 25%; Participation & Attendance 10%; Learning journal - hurdle requirement; group presentation 30%; and Final essay 35%.
A unit of study in the Bachelor of Business.

Aims & Objectives
This unit builds on the learning from HBBH110 and complements other units by focusing on the personal and interpersonal skills involved in working with people in all organisations.
Increasingly graduates are being asked to demonstrate their learning of key competencies, and ability to apply these to the workplace. The concept of 'competence' is defined as "the ability to transfer and apply skills and knowledge to new situations and environments" (Mayer Committee, 1992:10). These competencies often cross traditional discipline areas and are generic in nature. Within the context of this unit students will be able to focus on their own development of generic competencies that will be learned and applied within the Organisational Behaviour framework.
At the completion of this unit students should be able to:
• build on, and reflect on, the experiences in Organisation and Management (HBBH110);
• develop understanding of themselves, their impact on other people, and the way others influence their behaviour by linking theory to personal experience;
• experience the satisfaction and difficulties of working in semi-autonomous work groups and to improve their skills as team members and team leaders;
• explain the nature of their experiences as individuals and in groups in terms of current theories and concepts;
• enhance problem solving and critical thinking skills through the experiential learning method;
• increase awareness and understanding of diversity through class discussion and other interactive exercises; and
• explore aspects of change at both the individual and group level; and
• build on fundamental academic skills including research, analysis, written and verbal communication, planning and time management.

Content
The unit gives students sound knowledge and personal understanding of the impact of human behaviour on work in groups and organisations and builds on the learning from 'Organisation and Man/Management'. It is designed to develop skills appropriate to diverse and changing workplaces. Class/experiential activities and assessment tasks require students to be creative and innovative while working collaboratively in small groups. Students are encouraged to draw on their own experiences to learn about their own behaviour, and are challenged to understand the diverse conceptions, attitudes and beliefs underlying people's behaviour.

Textbooks

Students are encouraged to read widely in the content areas of the unit. Each concept/lecture has references which students are encouraged to consult before class. These references are available on course reserve.

References
Aims & Objectives
The aim of this unit is to create an understanding of appropriate organisational design for different types of institutions, which operate within contrasting economic, social, political and cultural settings. The objectives are to enable students to identify the design choices that can be made and the considerations relevant to these choices, to understand the problems that arise in designing structures and jobs, and to develop analytical skills for dealing with design problems.

Content
- To introduce students to the organisational life-cycle.
- To recognise existing design knowledge.
- Familiarise themselves with different approaches to design as described in relevant scholarly literature.
- Develop ways of appreciating the tensions between differing designs and the various purposes and needs of differing organisation members and groups.
- Investigate an existing case of organisation design and develop a judgement of its strengths and weaknesses.
- Apply models for measuring organisational effectiveness (OE), including Balanced Score Card Approach, through case study analysis.
- To consider the impact of strategic business planning, technological change and global competition on the design and structure of organisations.
- Investigate key determinants such as strategy, environment, culture, entrepreneurial orientation, technology, change, size from an internal and external analysis, and propose measures to improve organisational performance.

Textbooks
To be advised.

References

Aims & Objectives
- To introduce students to the context and changing nature of business and work and the implications for people in organisations.
- To introduce students to models and frameworks of HRM.
- To develop an understanding of the impact of strategy, structure, culture and external environment on HR practices.
- To build students' research skills to enable self-directed learning and the application of research skills to project work.
- To increase students' ability to critically analyse the current literature and issues relevant to the topics covered.

Content
- To explore and understand the value of diversity.
- To develop an understanding of national, regional and organisational cultures and how they impact on international human resources management.
- To understand and apply theoretical models that will develop understanding of national cultures.
- To identify and explore issues of social responsibility and ethics and the implications for human resource management policies and practices.
- To develop cross-cultural competencies and a 'global mindset'.
- To build on research knowledge and skills.

References

Aims & Objectives
- To develop an understanding of the critical links between strategic change, people and performance in achieving organisational success.
- To identify the importance of the integration of business, HRM and functional strategies.
- To consider the impact of strategic business decisions, such as outsourcing, telecommuting etc., on HRM and individual performance.
- To consider the HRM strategic choices available to an organisation in meeting its performance objectives.
- To study the traditional HRM activities from a strategic perspective.
- To explore some of the above issues through a workplace project that focuses on the issues of maintaining competitive advantage through people while meeting organisational requirements for continuous improvement.

Reading Materials

Aims & Objectives
- To explore and understand the value of diversity.
- To develop an understanding of national, regional and organisational cultures and how they impact on international human resources management.
- To understand and apply theoretical models that will develop understanding of national cultures.
- To identify and explore issues of social responsibility and ethics and the implications for human resource management policies and practices.
- To develop cross-cultural competencies and a 'global mindset'.
- To build on research knowledge and skills.
Content
This unit develops an understanding of national, corporate and regional cultures as they impact on cross-cultural management and considers the issues for Human Resource Managers when they work across national boundaries. The unit takes the position that to value difference is central to successful human resource management. International Human Resource Management will build on the knowledge and skills developed in HBH110 and HBH225, and will complement work being undertaken in other units through the application of material to the international context.

Reading Materials

HBH324 Managing Workplace Relations
12.5 Credit Points • 2 Hours per Week • Hawthorn, Sarawak • Prerequisites: HBH110 Organisation and Management • Corequisites: Nil • Teaching methods: Presentation of theoretical material, Experiential exercises, Student group presentations, Experiential learning. • Assessment: Individual essay 60%, Case study analysis/presentation 20%, Group IR audit 20%.
A unit of study in the Bachelor of Business.

Aims & Objectives
• Overview current Australian developments in workplace reform. Explores industrial relations changes that have occurred at both the macro level and micro level.
• Overview Work Choices Legislation and its implications.
• Understand the current Work Place Relations Act and the impact the Act will have on the enterprise bargaining process and the key stakeholders.
• Explore and understand the major industrial relations theories to assess the nature of the employment relationship: behaviour of employees, management associations, and trade unions at the workplace.
• Explore enterprise bargaining and the changing nature of work.
• A comparative analysis: global trends and labour market flexibility.
• Understand and utilise negotiation models: develop a step-by-step, problem-solving model for negotiating an enterprise agreement.
• Allows students to undertake research into organisations and investigate changes at the workplace level on collective agreements through an Industrial Relations Audit.

Textbooks
To be announced.

References
To be advised.

HBH325 Human Resource Management and Entrepreneurship
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisites: HBH110 Organisation and Management, HBH225 Human Resource Management in Contemporary Organisations • Corequisite: Nil • Teaching methods: Mini-lectures; Experiential activities; Presentations; Case studies and Class discussions. • Assessment: Individual assignment 50%; Group assignment 40%; Presentation 10%.
A unit of study in the Bachelor of Business, and an elective in the Bachelor of Technology (Aviation)/Bachelor of Business, and Bachelor of Technology (Air Transportation Management)/Bachelor of Business.

Aims & Objectives
The aims of this unit are:
• To develop an appreciation and understanding of entrepreneurship and its role in human resource management.
• To understand, foster and maintain creativity and innovation in individuals and organisations.
• To identify and understand the role of the HRM function in support of entrepreneurship and creativity in organisations.
• To develop an understanding of the manager's role in the management of small businesses.
• To explore change management models and tools in consideration of meeting entrepreneurial challenges of managing new venture.

Content
Understanding the concept of entrepreneurship and intrapreneurship in relation to individuals and organisations; developing creativity and understanding innovation; small business management; the challenges of managing new venture start-ups; social and ethical responsibility.

Textbooks

HBH330 Leadership and Organisation Dynamics
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak • Prerequisites: HBH110 Organisation and Management and HBH220 Organisational Behaviour and Change • Corequisite: Nil • Teaching methods: Large and small group experiential events, Didactic inputs with related readings and research, Observation of and reflection on the behaviour of the class itself as a temporary learning organisation. • Assessment: Learning Contract 50%; Analytical essay 50%.
A unit of study in the Bachelor of Business, and an elective in Bachelor of Technology (Aviation)/Bachelor of Business and Technology (Air Transportation Management)/Bachelor of Business.

Aims & Objectives
• To build on the learning gained in HBH110 Organisation and Management and HBH220 Organisational Behaviour and Change by providing further opportunities to deepen awareness, extend knowledge and develop competencies while operating as members of differently sized work teams.
• To encourage students to take the initiative in designing, implementing and evaluating a personalised learning program in the field of organisation behaviour.
• To enable students to explore, practise and test those behaviours relevant to their current life situation or future career via the challenge of creating an effective learning group.
• To provide a vehicle for in-depth personal reflection on managing self and others in conventional and entrepreneurial work settings characterised by high levels of diversity, uncertainty and change.

Content
• Group development: developmental stages/themes, role differentiation.
• Leadership, followership, communication, decision-making, conflict management.
• Conscious and unconscious processes in relation to the group’s primary task.
• Any leadership topic within the field of OB as described and approved in each student’s Learning Contract.

References
Other references will be recommended in class depending on the experienced dynamics of the class as a whole (for the analytical essay) and on the students' choice of leadership topic (for the Learning Contract).

**HBH410  Human Resource Management/Organisation Behaviour Honours Dissertation**

60 Credit Points • 1 Semester (full-time) • Consultation with supervisor • Hawthorn • Prerequisite: HBG415 Research Methodology/ HBH411 Human Resource Management/Organisation Behaviour Advanced Reading Unit • Teaching methods: Supervisor • Assessment: Written Dissertation

A unit of study in the Bachelor of Business (Honours).

**Aims & Objectives**

Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this subject is a dissertation based on an original theoretical or applied problem. The dissertation will demonstrate the candidate's ability to conceptualise, undertake and present a research project, based on published theory, in a scholarly and independent manner.

The dissertation will provide a coherent explanation of the research study and follow an ordered sequence in which the research objectives, relationship to the student, must be consistent with the broad content of the discipline within which the research has been taken and the student's capacity to complete research into the topic in the prescribed time.

After completing this unit students will have developed the ability to:
- Formulate a manageable and realistic research topic and plan.
- Undertake various forms of primary and secondary research.
- Analyse the literature and/or data collected.
- Compose a comprehensive and concise report that relates research findings to the research topic and previous published research, if appropriate.
- Formulate conclusion and recommendations and provide directions for future research.

**Content**

Normally, a student will produce a written minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBH411 Advanced Reading Unit and with the quality expectations that are carried with a work of this kind.

The dissertation will include:
- A statement of the research topic and background to the study.
- A current literature review.
- Research questions or hypotheses.
- Cogent argument.
- Clear conclusions and, if necessary, appropriate recommendations.

**Reading Materials**

References will be discipline specific.

**HBH411  Human Resource Management/Organisation Behaviour Advanced Reading Unit**

20 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn • Prerequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Literature review 100%. Seminar presentation of the Honours dissertation proposal and written Honours dissertation proposal are hurdle requirements.

A unit of study in the Bachelor of Business (Honours).

**Aims & Objectives**

This unit is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks.

The aims of this unit are to provide students with an opportunity:
- To explore the breadth and depth of their chosen area of study.
- To use an exploratory approach as a means of arriving at a viable topic for their dissertation.
- Students undertaking the language component will be required to read part of the prescribed reading in the chosen language.

**Content**

Students will be expected to read widely in their area of study from a variety of sources, including texts and journal articles. The purpose of the readings is to engage the student in a critical appraisal of the material and to develop further their research instincts, as well as providing a foundation for the dissertation.

**Reading Materials**

References will be discipline specific.

**HBI231  Foundations of International Business**

12.5 Credit Points • 1 Semester • 2.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBE110 Microeconomics • Corequisite: Nil • Teaching methods: Lectures and Tutorial • Assessment: Class Presentation 20%; Short Test 20%; Class Participation 10%; Final Exam 50%.

A unit of study in the Bachelor of Business.

Note: Students should not undertake this unit if they have completed HBE334 International Trade.

**Aims & Objectives**

To encourage students to understand the historical and macroeconomic foundation of international business, the nature and significance of international trade and the options for improving Australia's trade performance.

**Content**

This unit introduces key macroeconomic concepts, issues and policies, with a particular focus on international trade. It combines an examination of the nature of economic theory relating to international trade, trade restrictions and trade liberalisation, with discussion of key international trade issues of importance to the Australian business community and government.

Other topics considered include:
- International trade theory, international business culture, international political and business systems, international trade institutions.
- International foreign investment, international money and financial markets.
- The unit will also examine the composition and direction of Australia's trade.
- The effects and implications of globalisation for Australian business and society.
- The determinants of a nation's international competitiveness and the importance of regional trade blocs.

**References**


**HBI288  European Union**

12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: Any Stage 1 Business or Arts unit. • Corequisite: Nil • Teaching methods: Lectures, Tutorials and Online modules • Assessment: Class Presentation 20%; Short Test 20%; Presence and Participation 10%; Final Exam 50%.

A unit of study in the Bachelor of Business, Bachelor of Business and Bachelor of Arts (Italian) and Bachelor of Business (International Business)/Bachelor of Arts (Italian).

**Aims & Objectives**

The aim of this unit is for students to acquire an understanding of the process of economic integration in Western Europe. The unit analyses the social, political and economic changes in Europe, particularly since the mid-1980s. The unit aims to analyse the structure, operation and policies of the institutions of the European Union (EU) and discusses the significance of the Single European Act and the Maastricht and Amsterdam Treaties for European unity. The subject also considers the unique structure of the EU as a regional trading block.

**Content**

Particular topics for study will be: institutions and negotiation process of the EU and the development and implementation of European industrial, economic and social policy. These will be examined in the context of the European market and the changes taking place in Europe today. Other issues to be explored include the deepening of the institutions of the European Union, regionalism versus the nation-state and EU accession negotiations with Mediterranean, Central and Eastern European countries.

**Textbooks**

References

HBI289 European Union: Central and Eastern Transition Countries
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: First year business unit. • Corequisite: Nil • Teaching methods: One hour lecture and one hour tutorial • Assessment: Presentation (25%); Mid semester test (25%); Class Participation (10%); Final Test (40%).
A unit of study in the Bachelor of Business/Bachelor of Arts (Italian) and Bachelor of Business (International Business/Bachelor of Arts (Italian)).

Aims & Objectives
This unit introduces students to the new group of Central and Eastern European countries which have joined the European Union, making the European Union 25 nations. The unit will look at the Central and Eastern European countries from a social, political and economic viewpoint. Specifically, the unit will familiarise students with the legacy of the former centrally planned economies in Eastern Europe, the progress achieved so far and the need for further reforms.

The different approaches to transition in Central and Eastern Europe will be explored as well as the process of transition to European Union integration. Students will become aware of the role of the disintegration of the Soviet Union for the political and economic changes, which have taken place in Central and Eastern Europe in the late 80’s and early 90’s. Issues related to the further enlargement of the EU in the Balkans will be discussed. The unit also will examine the benefits and disadvantages that Central and Eastern European countries expect from their membership of the European Union.

Content
This unit offers a study of social, historical, economic aspects of each of the eight new Central and Eastern European entrant countries into the enlarged European Union of 25 countries. Students will be able to examine the process of change since the fall of communism in the late 1980s and how each of these countries has grappled with this change.

In addition students will be provided with an overview of Australia’s relations with each of these nations including the cultural, political and trade relations between Australia and the specific Eastern/Central European country.

Textbooks

References

HBI300 Industry Placement
0 Credit Points • 6 or 12 Months • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Supervision by the employer and an academic staff member • Assessment: Written Report
A unit of study in the Bachelor of Business
Note: This program is available to 2nd year Bachelor of Business students and 3rd year Double Degree students who have achieved a credit average. Placements are undertaken either halfway through 2nd year or at the beginning of 3rd year for a Bachelor of Business student, and halfway through 3rd year or at the beginning of 4th year for a Double Degree student. Acceptance into the program does not guarantee an industry placement. Currently this program is only available to students with Australian citizenship and Australian permanent residency.

Aims & Objectives
The objective of industry placement is for students to integrate theoretical knowledge with the practical applications and experiences in a commercial environment. It also aims to assist the student by providing opportunities for personal growth and developing both technical and interpersonal skills.

Benefits to the student:
- Academic performance is often seen to improve following the industry experience.
- Opportunity to experience particular areas of their chosen profession before graduation.
- Ability to earn while they learn.
- A head start to a successful future. As students with industry experience already have a point of comparison, career decisions are more informed and students have more to offer employers when they seek graduate employment.

HBI340 International Trade Strategies
12.5 Credit Points • 1 Semester • 2.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBE110 Microeconomics and HBI231 Foundations of International Business • Corequisite: Nil • Teaching methods: Lecture and Tutorial. • Assessment: Test 15%; Case Study Assignment 35%; Final Examination 50%. A unit of study in the Bachelor of Business.
Note: As a capstone unit in the International Business major, this unit must be studied by students in the final semester of their course. Students should not undertake this unit if they have completed HBE340 International Business Strategies.

Aims & Objectives
To enable students to prepare an international trade strategy plan through a case study assignment drawing together the principles of various business-oriented disciplines.

Content
- A broad review of the theory and practice of international trade/business.
- An analytical and strategic perspective to the study of international trade issues.
- Strategies for producing sustainably competitive goods and services.
- Competitive and cooperative strategies required to engage successfully in international trade.

References

HBI341 Asia - Business Context
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: Two Stage 2 Business units, including HBI231 Foundations of International Business (HBI231 Not applicable if the student is enrolled in A057) • Corequisite: Nil • Teaching methods: Lecture, Class Discussion • Assessment: Group presentation and report 30%, Team assessment 10%, Presentation of current media 5%, Participation 5%, Examination 50%.
A unit of study in the Bachelor of Business/Bachelor of Arts (Japanese).

Aims & Objectives
This unit examines the business environment in Asia from the perspective of Australian business, and provides an overview of Australia’s trade and investment relations with Asia. The unit aims to embrace broader issues relevant to international business through Japan and other Asian nations, such as the proposed single currency for Asia. It will also consider the transitional ‘socialist market’ economies of China and Vietnam.

This unit is designed to:
- Develop in students an understanding of the business environment in the Asian region and an ability to recognise and analyse the factors unique to Asia which impact on Australian business.
- Develop in students technical skills related to online international business research and a competency in tasks related to formulating business strategies for the market in Asia.

Content
The structure of the unit will consist of a number of modules. Specific modules will be compulsory components of the unit, other modules will be optional to be negotiated with the subject convenor. Sample topics to be included are:
- Relationship between Australia and Asia
- The Ailing Tigers - from ‘Miracle’ to Crisis
- Globalisation and the Crisis in Asia - Pacific
- The Business Environment of Asia - Pacific, Post-Crisis
- Country Reviews
- Culture and Business in Asia - Pacific
- Management Styles
- The Strategic Process
- Post-Crisis Strategies for Asia - Pacific
Textbooks

References

HBI342 International Investment and Taxation
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBL111 Law in Global Business, HBC110 Accounting for Success and two Stage 2 Business units. No previous knowledge of taxation is expected. • Corequisite: NIL • Teaching methods: Classroom lecture 10%, Synoptic research project 30%, Individual essay assignment 30%, Individual case study 30%.
A unit of study in the Bachelor of Business.
Note: Students should not undertake this unit if they have completed HBI229 International Investment and Taxation or HBI342 International Investment and Development.

Aims & Objectives
This unit is aimed at the needs of any business person or professional adviser operating in an international business environment. It is focused on three aspects of foreign investment: legal aspects, ethical and corporate governance aspects and taxation aspects.

Content
- Economic development, Economic Growth and Globalisation.
- International investment as a factor of economic development.
- Contemporary issues in global trade and investment environment.
- Recent trends in Regional Economic Integration.
- Introduction to National and International Laws and Agreements.
- Domestic regulation of International Investment.
- International regulation of International Investment.
- Australian Taxation System.
- Australian Taxes in the International Environment - a comparison.
- Current Developments in International Taxation.
- Global Corporate Governance and efforts to regulate MNE’s.
- Corruption v. Ethical Foreign Investment.

Reading Materials
FDI Legal Issues Readings:
Holland, P. Legal Aspects of Foreign Investment (2004)

References

HBI343 International Business in the Italian Context
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: At least two Stage 2 units. • Corequisite: NIL • Teaching methods: Seminar • Assessment: Class presentation 20%, Assignment 20%, Class Participation 10%, Class Tests 50%.
A unit of study in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.
Note: Students should not undertake this unit if they have completed HAA377.

Aims & Objectives
The main aim of this unit is to familiarise students with the contemporary Italian business environment by analysing the structure of the Italian economy and Italy’s place within the European Union, the international business environment and the structure of the Italian economy.

Content
The unit will include elements of Italian politics, financial, cultural and economic structures and environment and will give students the essential skills and confidence to do business with Italian entities in Italy, in the European Union and in Australia.

References

HBI344 Work Experience in Japan
12.5 Credit Points • 1 to 2 Semesters • Work Placement • Hawthorn • Prerequisite: Admission to this unit is at the discretion of the subject convener. • Corequisite: NIL • Teaching methods: Three months or longer (up to twelve months) full-time attendance at a place of employment, 2 x 2 hour preparatory lectures. • Assessment: Professional diary of the experience and project of 3-4000 words in English on topic - 100%.
A unit of study in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts and Bachelor of Social Science.
Note: Students should not undertake this unit if they have completed HAJ302.

Aims & Objectives
The aim of this elective unit is to provide students with a three months or longer experience of living in Japan and working in a company in Japan as a regular employee. The work experience unit further provides students with the linguistic and cultural competence and skills critical to the international trade environment. This unit allows students to gain essential hands-on experience in the Japanese business world by exposing students to the commercial environment of the Japanese market place.

Content
Employment in a company or organisation in Japan. Some of the topics to be covered during the unit are:
- Product promotion and marketing.
- Management practices.
- In-company education/training.
- Decision-making.
- Role of the union.
- Interpersonal relations within the company hierarchy and how these are reflected in language.
- Position of women in the Japanese company.
- Training of personnel for overseas posting.

Textbooks
Subject to placement. Will be advised on an individual basis.

References

HBI389 Work Experience in Europe
12.5 Credit Points • 1 Semester • Work Placement • Hawthorn, Sarawak • Prerequisite: Admission to this unit is at the discretion of the subject convener. • Corequisite: NIL • Teaching methods: Three months’ full-time attendance at place of employment, 4 x 2 hour preparatory lectures. • Assessment: Professional Work Diary; Assignment of 3-4000 words; Supervisor’s Report.
A unit of study in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Italian) and Bachelor of Business (International Business)/Bachelor of Arts (Italian).

Aims & Objectives
The aim of this elective unit is to provide students with a two/three-month experience of living in a European country and working in a European company as a regular employee. The work experience subject further provides students with the linguistic and cultural competence and skills critical to the international trade environment.

This unit allows students to gain essential hands-on experience in the European Union (EU) business world by exposing students to the commercial environment of the European market place.

Upon completion of their Work Placement in Europe, students should be able to:
- Work confidently in a firm/company overseas.
- Deal competently with issues which arise in an international business.
environment, in particular the European environment.
• Be able to adapt easily and confidently into an international work and community setting.
• Understand and critique issues dealing with working in Europe.
• Write and present business reports.

Content
Work Experience in Europe involves employment in a European company or organisation. Some of the topics that may be covered during the unit are:
• Australia - Europe Business.
• Single European Market.
• European Business Practices.

References

HBI390 European Union Study Tour
12.5 Credit Points • Approx 3 Weeks conducted in November/December • two Pre-departure Seminars and Tour • Hawthorn, Sarawak • Prerequisite: HBI288 European Union • recommended • Teaching methods: Preparatory lectures, participation and preparation in briefings involvement in actual meetings and presentations during the tour • Assessment: Students are required to prepare pre-departure research worth 40% and a final project on a theme relevant to Europe and the study tour of no less than 3-4000 words.
A unit of study in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Italian) and Bachelor of Business (International Business)/Bachelor of Arts (Italian).

Aims & Objectives
This unit aims to:
• Expose students to the cultural, political and regulatory environment of the European Union.
• Provide an opportunity for students to gain hands-on experience of business in Europe.
• Provide an opportunity for students to discuss current issues with a range of individuals and organisations actively involved in this region.

Content
The basis of the unit is a study tour to several European countries. Students will be provided with industry briefings by European companies as well as briefings by AUSTRADE specialists and other national offices for international trade. Students will be provided briefings by the institutions of the European Union (such as the European Parliament, the European Investment Bank, the European Court of Justice and the offices of the European Commission). The tour is preceded by briefing sessions.

References
HBI286 European Union Tutorial Guide.

HBI391 Pacific Rim Business Study Tour
12.5 Credit Points • Approx 2 Weeks conducted in June/July • 2 Pre-departure Seminars and Tour • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Preparatory lectures and satisfactory participation in briefings, research and presentations during the tour. • Assessment: A written assignment of no less than 4000 words.
A unit of study in the Bachelor of Business.

Aims & Objectives
This unit aims to provide students with a strategic overview of the cultural, political, economic and regulatory characteristics relevant for business in selected countries of the Pacific Rim. The coursework and study tour aim to provide students with an opportunity to gain hands-on experience of the business environment in selected countries in this region. A range of specialist officials and business people will enable students to explore how the political and economic reforms taking place in these countries affect business.

Content
This unit entails students attending prior and preparatory seminars at Swinburne University.
By the end of the unit the students should have:
• Acquired knowledge of local customs, values, attitudes and beliefs of selected countries of the Pacific Rim in general and the host country/countries in particular.
• Gained first-hand experience of the host country/ies’ business practices.
• Gained a comparative knowledge of business systems and practices used in the host country/countries and Australia.

References

HBI392 European Union - Business Context
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak • Prerequisite: Two Stage 2 units, including HBI231 Foundations of International Business (HBI231 is only applicable if a major in International Business is undertaken; and not applicable if the student is enrolled in A055) • Corequisite: Nil • Teaching methods: Lecture and Tutorials • Assessment: Presentation 20%; Assignment 20%; Participation 10%; Exam 50%
A unit of study in the Bachelor of Business.

Aims & Objectives
• To provide an overview of the main features of the European Single Market regulatory environment.
• To analyse the European Union (EU) in the global trading environment and comparatively as a regional trading entity.
• To consider the individual economies of the EU in terms of the European integration process.
• To identify opportunities and threats affecting trade between Australia and Europe.
• To analyse EU external relations with Asia and, in particular, with Australia.
• To familiarise students with online international business research in the European markets.

Content
The unit comprises of a number of modules available online and complemented by lectures.
Topics:
• The EU/Global Trading Environment.
• EU Regulatory Environment.
• Industry policies in the EU
• The Common Agricultural Policy in the European Union
• European Monetary Union.
• Doing Business in the EU.
• EU - Asia and EU - Australia Business.

References

HBI394 The Americas: Business Context
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak • Prerequisite: Two Stage 2 business units including HBI231 Foundations of International Business • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Class presentations 20%; Essays 20%; Class participation 10%; Examination 50%
A unit of study in the Bachelor of International Business.

Aims & Objectives
The unit aims to present the fundamentals of the business environment when doing business in the Americas.

Content
The aim of the unit is to provide students with an understanding of basic workings of the economies in the America’s and how they conduct business. The unit will examine key issues affecting the US economy, Canada and the major South American markets. One approach will include dealing with North American
Free Trade Agreement (NAFTA) and their inter-relationship. Other key issues covered in this course will include corporate governance and trade. In addition there will be coverage of Australia’s trade with these markets and especially the debate and negotiations over US-Australia Free Trade Agreement. The course will analyse Australian business opportunities and introduce case studies.

Topics Include:
- Introduction to Doing business in the America’s.
- Key moments in Post War political economy of the America’s.
- NAFTA - North American Free Trade Agreement.
- US economic fundamentals.
- The US service industries.
- China: The ‘little big man’.
- Mexico: Investment, development and proximity.
- Mercosur and the emerging marker.
- The smaller Latin American markets.
- Australia - America’s trade and investment relations.

Textbooks

HBI410 International Business Advanced Reading Unit
60 Credit Points • 1 Semester (full-time) • Consultation with supervisor • Hawthorn • Prerequisite: HBL411 Research Methodology and HBI411 International Business Advanced Reading Unit • Corequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Written Dissertation.

A unit of study in the Bachelor of Business (Honours).

Aims & Objectives
Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this subject is a dissertation based on an original theoretical or applied problem. The dissertation will demonstrate the candidate’s ability to conceptualise, undertake and present a research project, based on published theory, in a scholarly and independent manner.

The dissertation will provide a coherent explanation of the research study and follow an ordered sequence in which the research objectives, relationships to other scholarly work, methodology and strategies employed, and the results obtained are identified, analysed and evaluated. The topic of the dissertation, while being set by the student, must be consistent with the broad content of the discipline within which the research has been taken and the student’s capacity to complete research into the topic in the prescribed time.

After completing this unit students will have developed the ability to:
- Formulate a manageable and realistic research topic and plan.
- Undertake various forms of primary and secondary research.
- Analyse the literature and/or data collected.
- Compose a comprehensive and concise report that relates research findings to the research topic and previous published research, if appropriate.
- Formulate conclusion and recommendations and provide directions for future research.

Content
Normally, a student will produce a written minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBI411 Advanced Reading Unit and with the quality expectations that are carried with a work of this kind.

The dissertation will include:
- A statement of the research topic and background to the study.
- A current literature review.
- Research questions or hypotheses.
- Cogent argument.
- Clear conclusions and, if necessary, appropriate recommendations.

Reading Materials
References will be discipline specific.

HBI411 International Business Advanced Reading Unit
20 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Literature review 100%. Seminar presentation of the Honours dissertation proposal and written Honours dissertation proposal are hurdle requirements.

A unit of study in the Bachelor of Business (Honours).

Aims & Objectives
This unit is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks.

The aims of this unit are to provide students with an opportunity:
- To explore the breadth and depth of their chosen area of study.
- To use an exploratory approach as a means of arriving at a viable topic for their dissertation.
- Students undertaking the language component will be required to read part of the prescribed reading in the chosen language.

Content
Students will be expected to read widely in their area of study from a variety of sources, including texts and journal articles. The purpose of the readings is to engage the student in a critical appraisal of the material and to develop further their research instincts, as well as providing a foundation for the dissertation.

Reading Materials
References will be discipline specific.

HBL111 Law in Global Business
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Test 25%; final examination 75%.

A unit of study in the Bachelor of Business, Bachelor of Engineering, Bachelor of Science/Bachelor of Business, and Bachelor of Technology/Bachelor of Business.

Aims & Objectives
The aims of this unit are:
- To introduce students to basic legal concepts.
- To introduce students to important areas of business law, including company, contract, tort and intellectual property law.
- To develop an understanding of the nature and function of law, in particular the inter-relationship of law, business and society.
- To introduce students to comparative and international aspects of business law.
- To develop an understanding of the relationship between law and business ethics.

Content
The unit begins with an introductory study of the concepts, techniques and institutions of the common law and civil law traditions. It then proceeds to two case studies on the role of the law in promoting business activity - one in the law of contract and the other in company law. Next, the role of law in controlling business activity is studied using case studies in tort law and the Trade Practices Act.

References

HBL220 Contract Law
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBL111 Law in Global Business • Teaching methods: Lecture and Tutorial • Assessment: Test 25%; final examination 75%.

A unit of study in the Bachelor of Business.

Aims & Objectives
The general aim of this unit is to enable students to gain an understanding of the law applicable to contracts and, in particular, those negotiated during the establishment and conduct of businesses and entrepreneurial activities. Attention will be given to the legal repercussions of concluding an agreement...
(including the impact of statute), the use of the contract document as a means of minimising risk and the effect of breaching obligations undertaken.

Content
- Formation of contract.
- Terms of contracts.
- Validity of contract.
- Termination of contract and remedies.

Textbooks

References
Khoury, D & Yamouni, YS 2007 Understanding Contract Law, 7th edn, Sydney, Butterworths.
Latimer, P. 2006, Australian Business Law, CCH Australia Ltd.

HBL221 Company Law
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak
Prerequisite: HBL111 Law in Global Business • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Assignment 25%; Final examination 75%.
A unit of study in the Bachelor of Business.

Aims & Objectives
The general aim of this unit is to enable students to gain an understanding of the various type of business organisations that are employed in the modern business environment. The unit commences with an examination of the choices available to the entrepreneur, such as operating as a sole trader, entering into a partnership or joint venture, utilising a trust, or entering into a franchise agreement. The primary focus of the subject is on companies and the provisions of the Corporations Act which encourage and inhibit entrepreneurial activities.

Content
- Types of business organisations.
- Introduction to companies.
- Corporate characteristics and the company as a separate legal entity.
- Company classification.
- Pre-incorporation contracts.
- Contracts with companies.
- Shareholders.
- Management of companies.
- Company litigation and minority shareholding.
- The company in trouble.

Textbooks
Ciro, T & Goldwasser, V, Law and Business, 2nd edn, 2006 Melbourne

HBL222 Marketing Law
12.5 Credit Points • 1 Semester • 2.5 Hours per Week • Hawthorn, Sarawak
Prerequisite: HBL111 Law in Global Business • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Assignment 25%; Test 25%; Final examination 50%.
A unit of study in the Bachelor of Business.

Aims & Objectives
The unit aims to provide students with a practical knowledge of the legal controls imposed on the manufacturing, labelling, packaging, distribution, promotion, pricing, and retailing of goods and (where applicable) services. Whilst the unit deals with laws that impose controls over the activities of marketers and entrepreneurs, it also emphasises how the law can positively benefit and protect the marketer and entrepreneur, and be utilised to obtain a competitive advantage in the marketplace.

Content
Topics involved in this study are:
- The liability of manufacturers of goods at common law and under statute.
- Proprietary interests in products.
- Packaging and labelling of goods.
- Advertising and promotion of goods and services.
- Restrictive trade practices.

Textbooks

References
Clark, E, Cho, G & Hoyle, A 2000, Marketers and the Law, Law Book Co.

HBL331 International Business Law
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak
Prerequisite: HBL111 Law in Global Business • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Test 25%; Seminar paper and presentation 15%; Final examination 65%.
A unit of study in the Bachelor of Business.

Aims & Objectives
The general objective of this unit of study is to introduce students to the legal aspects of international business law.

Content
The emphasis of the unit is on the following topics:
- Introduction to international law concepts.
- Basics of international contracts.
- International sales of goods.
- International conventions.
- International treaties.
- International intellectual property.
- Vienna Sales Convention.
- Conflicts of laws.

Textbooks

References

HBL333 Finance Law
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn
Prerequisite: HBL111 Law in Global Business • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Mid-semester test 40%; Final examination 60%.
A unit of study in the Bachelor of Business.

Aims & Objectives
The general objective of this unit is to provide students with an understanding of banking, finance, and securities law in the context of the Australian legal system.

Content
- Legal framework of lending.
- Securities.
- Banker/customer relationship.
- Negotiable instruments, particularly cheques.
- International trade finance.

Textbooks
Cheques Act 1986 (as amended) (Commonwealth)

References

HBM110 The Marketing Concept
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak
Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Assignments 50%, Examination 40%.
A unit of study in the Bachelor of Business, Bachelor of Engineering (Civil Engineering) / Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business, Bachelor of Science (Biotechnology) / Bachelor of Business, Bachelor of Technology (Air

References
Aims & Objectives
- To provide a broad understanding of the major theoretical principles upon which the practice of marketing is based.
- To apply these principles to analysing a range of marketing problems.
- To enable students to identify marketing management tasks and understand how marketing fits into the organisational environment.
- To enable students to understand the formulation of management policies that impact on other functions such as accounting, operations, and research and development.

Content
- The marketing concept and its evolution.
- Consumer behaviour.
- Marketing strategy and planning.
- Market segmentation and target market.
- Analysing marketing information and marketing research.
- The marketing mix (products and services, price, promotion and distribution).
- Marketing communication and the promotional mix (advertising, personal selling, P.R., sales promotion & electronic marketing).

Textbooks

Recommended Reading

HBM220 Market Behaviour
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBM110 The Marketing Concept • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Assignments and presentation 60%, Final examination 40%.
A unit of study in the Bachelor of Business and the Bachelor of Multimedia (Business Marketing).

Aims & Objectives
This unit introduces students to the knowledge required to manage demand and customer behaviour for enterprises. The principal objectives are that:
- Students will acquire knowledge of human behaviour and its management.
- Students will be able to apply this knowledge in an enterprise context in order to achieve the goal of the enterprise and business.
After studying this unit students should be able to:
- Comprehend the importance for marketers to understanding behaviour.
- Understand the concepts of behaviour and specifically consumption behaviour.
- Understand a number of psychological constructs relating to behaviour.
- Understand external influences on behaviour.
- Understand the buying behaviour of groups and organizations.
- Understand the social aspects of behaviour including relationships.
- Enhance your oral and visual presentation techniques to a more formal and professional business style.

Content
This unit covers the following topics:
- The social nature of marketing-sociology and behaviour
- Individual psychology and behaviour
- External influences on individual behaviour
- Dealing with individuals in large groups
- Dealing with individuals as group buying units
- The Consumption Process
- Motivation
- Perception
- Personality
- Learning
- Attitudes
- Communication
- Relationships
- Culture
- Group influences
- Group purchasing

Textbooks
To be advised on Blackboard.

References
The following journals are also important: Business Review Weekly (BRW), Harvard Business Review, Journal of Marketing, Journal of Consumer Behaviour, Marketing Research and International Marketing. These are available in either electronic form via databases or in hard copy through Swinburne Library.

HBM222 Marketing Planning
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBM110 The Marketing Concept • Corequisite: Nil • Teaching methods: Lecture, Tutorial and Case method • Assessment: Minor assignment 15%; Major assignment 30%; Participation 5%; Exam 50%.
A unit of study in the Bachelor of Business, Bachelor of Multimedia (Business Marketing), Bachelor of Technology (Air Transportation Management) / Bachelor of Business and Bachelor of Technology (Aviation) / Bachelor of Business.

Aims & Objectives
To introduce students to the techniques of marketing planning and involve them in planning processes of real marketing situations. To enable students to:
- To comprehend the importance of planning for marketing.
- To understand the role of marketing plans as a component of corporate level plans.
- To produce a marketing situation analysis of an organisation and identify key marketing problems.
- To conduct secondary research using various sources to identify and synthesise data into useful management information.
- To develop appropriate marketing objectives.
- To analyse planning options and offer constructive and practical alternative marketing strategies.
- To formulate an integrated and comprehensive marketing action plan.
- To examine in detail the implementation of a marketing plan, including the management of necessary internal organisational changes.
- To prepare professional business reports.
- To enhance your oral and visual presentation techniques to a more formal and professional business style.

Content
- The process of planning and strategy formation.
- The process of preparing a situation analysis.
- Setting marketing objectives and developing marketing strategies.
- Target marketing, product/brand positioning and marketing mix.
- Product strategies.
- Pricing strategies.
- Distribution and channel management strategies.
- Integrated marketing communication strategies.
- Advertising strategies and tactics.
- Other integrated marketing communication tools.
• Marketing budgets.
• Implementation of the marketing plan.
• Evaluation and control of marketing performance.
• Writing the strategic marketing plan.

Textbooks
TBA

References
TBA

HBM223 Transnational Marketing
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBM110 The Marketing Concept and HBM220 Market Behaviour (recommended) • Corequisite: Nil • Teaching methods: Lecture, Tutorial and Fieldwork • Assessment: Individual 15%, Group 30%, Marketing Game 20% and written test 35%.

A unit of study in the Bachelor of Business and the Bachelor of Multimedia (Business Marketing).

Aims & Objectives
This unit aims to provide students with the knowledge to enable them to understand the concept of Transnational Marketing and how it fits within overall corporate structure and strategy and how it enables organisations to realise offshore opportunities. The unit will look at analysis of markets, strategies for entry, and implementation of transnational marketing.

At the completion of this unit students should be able to:
• Demonstrate what is meant by internationalisation of an organisation.
• Demonstrate knowledge of classical and current research in international marketing.
• Identify the forces in international markets.
• Identify Political & Economic influences.
• Identify Social Cultural and Technological influences.
• Demonstrate an ability to assess feasibility of extending a product/service into an overseas market.
• Demonstrate an ability to analyse research findings.
• Develop logical arguments well supported by facts and/or theory.
• Demonstrate an ability to convey research findings clearly, succinctly and logically.
• Demonstrate an ability to do so within specified time constraints.
• Demonstrate research skills by identifying relevant secondary sources.

Content
• PEST (Political, Economic, Social & Technological) factors.
• International market research.
• International Segmentation and Positioning.
• Market entry modes.
• Product/service strategy.
• Distribution strategy.
• Pricing strategy.
• Promotion strategy.
• Trend in International Marketing

Textbooks
TBA

References
TBA

HBM272 eCustomer Relationship Management
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBM110 The Marketing Concept and HIT1401/HIT1025 or HET113 The Internet and World Wide Web 1 • Corequisite: Nil • Teaching methods: Lecture, Computer Lab & Assessment: Examination 40%, Major assignment 30%, Online participation 30%.

A unit of study in the Bachelor of Business and the Bachelor of Multimedia (Business Marketing).

Aims & Objectives
The concept of customer relationship management has been popular with business for some years. The advent of electronic marketing tools has provided an opportunity to considerably strengthen and develop the initial concepts and much more sophisticated methods of customer data management are emerging, with corresponding improvements in business efficiency and potential customer satisfaction. The scale and speed of change impacting on business over the past few years creates both challenges and opportunities. Exposure to frameworks facilitating the adaptability of business to these changes and their practical application are essential for creating and maintaining mutually rewarding relationships between business and the individual consumer.

Content
• Issues and implications of CRM.
• Growth of Data driven marketing (DDM) techniques.
• Implications for ‘traditional marketing’ techniques.
• Segmentation in the context of e-CRM.
• Inputs for DDM = data collection tools (lists, direct response marketing etc).
• Database development and maintenance.
• Utilising the marketing database.
• Creative marketing strategy for developing e-CRM.
• Testing and measuring e-CRM programs.
• Issues with, and the future of, e-CRM.

References
Hughes, A 2000, Strategic Database Marketing, McGraw Hill.
Pepers, D & Rogers, M. 1997, Enterprise One to One, Currency, Doubleday.

HBM330 Marketing Innovation Management
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBM222 Marketing Planning and HBG229 Marketing Research • Teaching methods: Lecture, Tutorials and Group Meetings • Assessment: Individual assignment 20%, Tutorial presentation 30%, Group assignment 50%.

A unit of study in the Bachelor of Business, and an elective in the Bachelor of Technology (Aviation)/Bachelor of Business, and Bachelor of Technology (Air Transportation Management)/Bachelor of Business.

Textbooks

References
Aims & Objectives

The objective of this unit is to enable students to apply their marketing knowledge to the particular area of new idea (product, service or concept) sourcing, introduction and management. Within this broad unit objective, there are a number of specific objectives including:

- Understanding the process of innovation.
- Managing the new idea/project process.
- Identifying the role of implementation.
- Structures to enable implementation.

Content

- Importance of innovation
- The new product innovation charter.
- Overview of the new idea process.
- The product mix and product management (line, brand, packaging).
- Concept generation and evaluation.
- Concept development and testing.
- Strategy development (collaboration or manufacture)
- Business analysis/case
- Commercialisation: product, price, communication and distribution issues.
- New venture/start up.

Textbooks


References


HBM331 Services Marketing and Management

12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak

Prerequisite: HBM222 Marketing Planning and one other Stage 2 Marketing unit. • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Class work/Minor assignment 20%, Assignment 30%, Examination 50%. A unit of study in the Bachelor of Business, and an elective in the Bachelor of Technology (Air Transportation Management) / Bachelor of Business and the Bachelor of Technology (Aviation) / Bachelor of Business.

Aims & Objectives

The unit aims to provide students with an appreciation of the marketing and management of service businesses, using both theoretical and practical approaches. Students who have completed the unit will be expected to have an understanding of the importance of the services sector in Australia and globally, the differences between goods and services marketing and the specific problems of services marketing management, the interactive nature of services and the resulting issues that need to be faced by managers and the general skills required for the marketing of services.

Content

- The importance of services sectors in Australia and globally, and their specific characteristics.
- Service quality and customer expectations, perceptions and satisfaction.
- Managing service businesses, demand and supply.
- Internal marketing and technology in service delivery.
- Complaint behaviour and service recovery.
- Customer retention and relationship marketing.

Textbooks


HBM333 Communications Strategy

12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak

Prerequisite: HBM220 Market Behaviour and HBM222 Marketing Planning, and HBS229 Marketing Research recommended. • Corequisite: Nil • Teaching methods: Lecture, Tutorial and Fieldwork • Assessment: Group communication plan 45%, Tutorial and online participation 15%, Examination 40%. A unit of study in the Bachelor of Business.

Aims & Objectives

The aim of this unit is to enable students to apply their marketing knowledge to the specific areas of communication strategy. This unit examines the underlying process of integrated marketing communication - the principles that are involved in developing sound communication strategies and effective execution of these strategies. The group communication plan is likely to be for a "real" client.

Content

- Integrated marketing communication (IMC)
- The role of marketing communication models
- Briefing communication agencies
- Developing a communication strategy
- Media strategy
- Sales promotion
- Publicity and public relations
- Promotions on the Web
- Issues and trends in communication

Textbooks


References


HBM339 Transnational Business Practices

12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak • Prerequisite: HBM223 Transnational Marketing • Corequisite: Nil • Teaching methods: Lecture, Tutorial and Fieldwork • Assessment: A unit of study in the Bachelor of Business.

Note: Students should not undertake this unit if they have completed HBM338 Asian Pacific Business Practices.

Aims & Objectives

This unit aims to provide students with the knowledge to enable them to understand and participate in existing business environments. The general approach taken is to view this from an Australian business person's point of view. The use of culture models and theories will be the foundation of understanding. This unit also examines cross-cultural communication, sales and negotiations, similarities and differences.

Content

- Particular attention is paid to regional and sub-regional groupings based on economic and business factors.
- To provide an understanding of some important macro-environmental factors which affect the conduct of business in the major markets. Special attention is given to the political - legal environments and the social-cultural environments.
- To study and learn about the various business practices and cultures prevailing in the regions.

Specific topics will include:

- Negotiation overview and cross-cultural models
- East Asian cultural institutions
- North East Asian business practices
- South East Asian business practices
- Doing business with Americans
- Europe - The old continent is changing
- Europe - Religious roots in Northern Europe's capitalist system
- Europe - Artisans, tactics and diplomacy in Southern Europe
- Europe - Old and new structures in Eastern Europe
- Practitioners' viewpoints

Textbooks


References

**HBM341 Business Strategy**

Aims & Objectives

This is an interdisciplinary unit involving teaching staff representing the accounting discipline, human resource management and marketing staff. Students in this unit are given a practical understanding of how the strategic planning process works, how corporate objectives are developed and how these are translated into strategic plans.

Content

- The state of business strategy in contemporary competitive environments.
- The importance of monitoring external trends and events.
- The understanding of key interrelationships among internal functional areas of business.
- The importance and difficulties of implementation of strategies, as well as measuring their effectiveness.
- The management problems involved in all of the above.

Textbooks

Wheelen, L. & Hunger, JD, 2004, Strategic Management, 9th edn; Addison Wesley.

References


**HBM370 eCommerce Strategy: A Management Perspective**

12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak

- Prerequisite: HBBG270 eBusiness • Corequisite: Nil • Teaching methods: Lecture, Computer Lab, Online Discussion Groups • Assessment: Major assignment 60%; Laboratory and online discussion groups 40%.

A unit of study in the Bachelor of Business and the Bachelor of Multimedia (Business Marketing).

Note: This unit is only offered in Semester 2.

**Aims & Objectives**

This exciting new developments in business facilitated by the rise of technologies such as the Internet, World Wide Web and relational database systems, need to be properly understood in their business context, so they can be used to best effect by marketers. The fundamental drivers of eBusiness will be investigated, and the implications of this understanding will be used to develop strategies for managing the business of the future in a profitable, ethical and effective way. Students will gain an understanding of how to be effective users and managers of the new technologies and their capabilities.

Content

- Business process re-engineering.
- Legal issues.
- Ethical issues.
- Organisational integration.
- Change management.
- Drivers of cybercommerces.
- Technological issues.
- Strategic planning for cybercommerces.
- Implementation strategies and project management.
- Future trends.

**References**


**HBM410 Marketing Honours Dissertation**

60 Credit Points • 1 Semester (full-time) • Consultation with supervisor • Hawthorn • Prerequisites: HBB415 Research Methodology and HBM411 Marketing Advanced Reading Unit • Corequisites: Nil • Teaching methods: Supervision • Assessment: Written Dissertation

A unit of study in the Bachelor of Business (Honours).

**Aims & Objectives**

Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this unit is a dissertation based on an original theoretical or applied problem. The dissertation will demonstrate the candidate’s ability to conceptualise, undertake and present a research project, based on published theory, in a scholarly and independent manner.

The dissertation will provide a coherent explanation of the research study and follow an ordered sequence in which the research objectives, relationship to other scholarly work, methodology and strategies employed, and the results obtained are identified, analysed and evaluated. The topic of the dissertation, while being set by the student, must be consistent with the broad content of the discipline within which the research has been taken and the student’s capacity to complete research into the topic in the prescribed time.

After completing this unit students will have developed the ability to:

- Formulate a manageable and realistic research topic and plan.
- Undertake various forms of primary and secondary research.
- Analyse the literature and/or data collected.
- Compose a comprehensive and concise report that relates research findings to the research topic and previous published research, if appropriate.
- Formulate conclusion and recommendations and provide directions for future research.

**Content**

normally, a student will produce a written minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the prescribed reading in the HBM411 Advanced Reading Unit and with the quality expectations that are carried with work of this kind.

The dissertation will include:

- A statement of the research topic and background to the study.
- A current literature review.
- Research questions or hypotheses.
- Cogent argument.
- Clear conclusions and, if necessary, appropriate recommendations.

**Reading Materials**

References will be discipline specific.

**HBM411 Marketing Advanced Reading Unit**

20 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn • Prerequisites: Nil • Corequisites: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Literature review 100%, Seminar presentation of the Honours dissertation proposal and written Honours dissertation proposal are hurdle requirements.

A unit of study in the Bachelor of Business (Honours).

**Aims & Objectives**

This unit is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks.

The aims of this unit are to provide students with an opportunity:

- To explore the breadth and depth of their chosen area of study.
- To use an exploratory approach as a means of arriving at a viable topic for their dissertation.
- Students undertaking the language component will be required to read part of the prescribed reading in the chosen language.

**Content**

Students will be expected to read widely in their area of study from a variety of sources, including texts and journal articles, The purpose of the readings is to
engage the student in a critical appraisal of the material and to develop further their research instincts, as well as providing a foundation for the dissertation.

**Reading Materials**

References will be discipline specific.

**HBMG410 Management Honours Dissertation**

60 Credit Points • 1 Semester (full-time) • Consultation with supervisor • Hawthorn • Prerequisite: HBB415 Research Methodology and HBMG411 Management Advanced Reading Unit • Corequisite: Nil • Teaching methods: Supervision • Assessment: Written Dissertation

A unit of study in the Bachelor of Business (Honours).

**Aims & Objectives**

Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this unit is a dissertation based on an original theoretical or applied problem. The dissertation will demonstrate the candidate’s ability to conceptualise, undertake and present a research project, based on published theory, in a scholarly and independent manner.

The dissertation will provide a coherent explanation of the research study and follow an ordered sequence in which the research objectives, relationship to other scholarly work, methodology and strategies employed, and the results obtained are identified, analysed and evaluated. The topic of the dissertation, while being set by the student, must be consistent with the broad content of the discipline within which the research has been taken and the student’s capacity to complete research into the topic in the prescribed time.

After completing this unit students will have developed the ability to:

- Formulate a manageable and realistic research topic and plan.
- Undertake various forms of primary and secondary research.
- Analyse the literature and/or data collected.
- Compose a comprehensive and concise report that relates research findings to the literature topic and previous published research, if appropriate.
- Formulate conclusion and recommendations and provide directions for future research.

**Content**

Normally, a student will produce a written minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBMG411 Advanced Reading Unit and with the quality expectations that are carried with a work of this kind.

The dissertation will include:

- A statement of the research topic and background to the study.
- A current literature review.
- Research questions or hypotheses.
- Cogent argument.
- Clear conclusions and, if necessary, appropriate recommendations.

**Reading Materials**

References will be discipline specific.

**HBMG411 Management Advanced Reading Unit**

30 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Literature Review 100%, Seminar presentation of Honours dissertation proposal and written Honours dissertation proposal are hurdle requirements.

A unit of study in the Bachelor of Business (Honours).

**Aims & Objectives**

This unit is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks.

The aims of this unit are to provide students with an opportunity:

- To explore the breadth and depth of their chosen area of study.
- To use an exploratory approach as a means of arriving at a viable topic for their dissertation.
- Students undertaking the language component will be required to read part of the prescribed reading in the chosen language.

**Content**

Students will be expected to read widely in their area of study from a variety of sources, including texts and journal articles. The purpose of the reading is to engage students in a critical appraisal of the material and to develop their research instincts, as well as providing a foundation for the dissertation.

**Reading Materials**

References will be discipline specific.

**HBN300 Managing and Developing a Small Business**

12.5 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Teaching methods: Class, self-study exercises, syndicate group discussions and presentations • Assessment: Class participation 25%, Individual case study and presentation 50%, Written analysis 25%.

**Aims & Objectives**

This unit provides an introduction to the skills necessary to manage and grow a small business. It will cover a range of industry types. It will introduce the basic professional skills necessary to manage the small business. These include accounting, marketing, operations, and purchasing and supply. It will be directed at developing practical skills and experience rather than having a strong focus on theory.

Specific aims are:

- Develop skills in each of the small business functions.
- Develop skills in environmental analysis for small businesses.
- Develop skills in internal small business analysis.
- Understand decision making in a small business context.
- Understand the basics of small business strategy creation.

**References**


Selected case studies as advised.

**HBP228 Manufacturing Management**

12.5 Credit Points • 1 Semester • Hawthorn • Prerequisite: HBB410 Organisation and Management • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Assignment 40%, Group assignment 40%, Test 20%.

A unit of study in the Bachelor of Engineering and Bachelor of Management.

**Aims & Objectives**

This unit reviews integrated manufacturing systems and the manufacturing management function production, production planning and control, supply chain and inventory decision models.

**Content**

This unit covers the relationship between manufacturing and other organisational functions in the company, the application of analytical techniques relevant to production, and related functions such as market forecasting, scheduling and materials requirement planning.

The 5 Ps of Japanese manufacturing technique, VAM, supply chain management, JIT production system and inventory decision models.

**Textbooks**


**References**

Dilworth, JB 2001, Operation Management: Providing value in Goods and Services, Orlando, Harcourt College Publisher.


HBP336 Quality Management in Manufacturing

12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: HBP234 Manufacturing Management • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Assignments 40%; Group assignment 40%; Test 20%.

A unit of study in the Bachelor of Business.

Aims & Objectives
This unit develops the undertaking of quality management. It outlines the implementation of total quality management and the requirements of ISO9001:2000 in the Australian context.

Content
A unit focusing on the requirements of total quality management within an enterprise. The stages of quality progression are developed within a practical context from buyer beware through corrective, preventive and cost-based quality, to the requirements of serving the customer chain. Current quality demands on industry are reviewed and evaluated for impact on management systems.

This unit also covers the definition of quality, and competing through the dimensions of quality. The steps to ISO 9000:2000 accreditation and benchmarking are also discussed.

Textbooks

References

HBP337 Managing Technology and Innovation

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBP336 Quality Management in Manufacturing • Corequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Assignment 40%, Group assignment 40%; Test 20%.

A unit of study in the Bachelor of Business.

Aims & Objectives
This unit develops an understanding of technology strategy in relation to "product" (device, service or process) and process innovation, value chains, competitive reaction, barriers to market entry, financial decision models and an international perspective on converting a good idea/opportunity into a productive commercial success.

Content
This unit examines selecting, staffing and managing research and development projects to achieve strategic business objectives, and the problems of accelerating the pace of technological innovation in product development. Particular consideration is given to invention, development and innovation as they relate to commercialisation processes. Students' accounting skills will be extended to include cash-flow techniques and analysis. The techniques acquired in this unit are applied to the production of a commercial feasibility analysis, heavily emphasising cash-flow projections. Project management, national and international case studies, will be used to demonstrate the elements of market and financial success for developed products and services.

Textbooks

References
Jackson, S & Sawyer, R 2001, Managerial Accounting, 5th edn, Orlando, Harcourt College Publisher.

HBP410 Manufacturing Management Honours Dissertation

60 Credit Points • 1 Semester (full-time) • Consultation with supervisor • Hawthorn • Prerequisite: HBP415 Research Methodology and HBP411 Manufacturing Management Advanced Reading Unit • Corequisite: Nil • Teaching methods: Supervision • Assessment: Written Dissertation

A unit of study in the Bachelor of Business (Honours).

Aims & Objectives
Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this subject is a dissertation based on an original theoretical or applied problem. The dissertation will demonstrate the candidate's ability to conceptualise, undertake and present a research project, based on published theory, in a scholarly and independent manner.

The dissertation will provide a coherent explanation of the research study and follow an ordered sequence in which the research objectives, relationship to other scholarly work, methodology and strategies employed, and the results obtained are identified, analysed and evaluated. The topic of the dissertation, while being set by the student, must be consistent with the broad content of the discipline within which the research has been taken and the student's capacity to complete research into the topic in the prescribed time.

After completing this unit students will have developed the ability to:
- Formulate a manageable and realistic research topic and plan.
- Undertake various forms of primary and secondary research.
- Analyse the literature and/or data collected.
- Compose a comprehensive and concise report that relates research findings to the research topic and previous published research, if appropriate.
- Formulate conclusion and recommendations and provide directions for future research.

Content
Normally, a student will produce a written minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBP411 Advanced Reading Unit and with the quality expectations carried with a work of this kind.

The dissertation will include:
- A statement of the research topic and background to the study.
- A current literature review.
- Research questions or hypotheses.
- Cogent argument.
- Clear conclusions and, if necessary, appropriate recommendations.

Reading Materials
References will be discipline specific.

HBP411 Manufacturing Management Advanced Reading Unit

20 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn • Prerequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Literature Review 100%, Seminar presentation of the Honours dissertation proposal and written Honours dissertation proposal are hurdle requirements.

A unit of study in the Bachelor of Business (Honours).

Aims & Objectives
This unit is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks.

The aims of this unit are to provide students with an opportunity:
- To explore the breadth and depth of their chosen area of study.
- To use an exploratory approach as a means of arriving at a viable topic for their dissertation.
- Students undertaking the language component will be required to read part of the prescribed reading in the chosen language.

Content
Students will be expected to read widely in their area of study from a variety of sources, including texts and journal articles. The purpose of the readings is to engage the student in a critical appraisal of the material and to develop further
their research instincts, as well as providing a foundation for the dissertation.

Reading Materials
References will be discipline specific.

HBQ229 Marketing Research
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn, Sarawak • Prerequisite: HB110 The Marketing Conceptual or either HB110 Quantitative Analysis A or HB111 Quantitative Analysis B, or one of the following units: HMA103 Statistics and Research Methods A, HMA104 Statistics and Research Methods B, HMA102 Introduction to Statistics HMA141 or HMA279 Design and Measurement 2 • Corequisite: HB220 Market Behaviour • Teaching methods: Lecture, Tutorial and Laboratory • Assessment: SPSS lab test 10%, SPSS analysis 20%, Questionnaire assignment 20%, Final exam 50%.

A unit of study in the Bachelor of Business.

Aims & Objectives
Decision-makers are increasingly relying on marketing research data to help with formulating and evaluating their decisions and practices. It is vital that all business students and management professionals have a broad grounding in the practices and techniques involved in marketing research. There are many different kinds of marketing research and there are many ways that marketing research can be used.

This Subject, Marketing Research is a one-Semester Subject offered at second year level by the Faculty of Business and Enterprise as part of the marketing major in the Bachelor of Business degree. At the completion of this Subject students should be able to understand the marketing research process with an emphasis on the practical implementation of survey research techniques in a real life situation. The Subject is designed to enhance students’ understanding of the practical and dynamic nature of the Subject.

At the completion of this Subject students should be able to understand the marketing research process and have developed the ability to not only identify research problems and opportunities, but also to understand how marketing research findings can be practically implemented in the business environment. This will involve students analysing a data base, developing recommendations for further research, and to understand the fieldwork process by actually conducting interviews with targeted respondents.

Content
The focus of the subject is the application of marketing research theory to the design and implementation of a major marketing research project. The course aims to teach students to:

- Understand the importance of marketing research for the marketing management process
- Translate a management problem into a marketing research problem
- Understand the ethics involved in the marketing research industry
- Use secondary data to identify and synthesise data into useful management information
- Produce a research design to collect the information to solve marketing management problems
- Understand the basics of qualitative and quantitative questionnaire design
- Understand the fieldwork process and the errors involved in the fieldwork process
- Develop the skills to use the software package SPSS for Windows to analyse data
- Develop professional report writing skills

Textbooks
Students who need a SPSS text are strongly advised to buy Pallant, J, 2005, SPSS Survival Manual, 2nd edn, Alton and Unwin, NSW.

References
Cooper, DR and Schindler, PS, 2006, Marketing Research, McGraw-Hill, Irwin, USA

HBQ415 Research Methodology
20 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Several teaching methods will be adopted, including formal lectures, tutorials, laboratories and seminars. • Assessment: Individual class presentation 15%, Group Assignments 45%, individual Assignments 45%.

A unit of study in the Bachelor of Business (Honours).

Aims & Objectives
This unit aims to give students the necessary skills to conduct studies for higher degrees. The students will become competent in finding, evaluating and applying research findings to a wide variety of situations and issues. Students will be exposed to a variety of research methods, not just those relevant to their discipline of study. This subject will consist of one class per week including the use of a computer lab as required. Classes will be interactive and students are expected to come to class prepared to participate and contribute regularly to class activities and discussions.

By completing Research methodology students will:
- Become competent in understanding the research process.
- Be able to undertake independent research using a variety of appropriate methods, using primary and secondary data, as well as qualitative and quantitative techniques.
- Be able to produce a research proposal.
- Become aware of ethical research practices.
- Be aware of the research process and how this evolves and changes during the project life cycle.

Content
The content of this unit will include:
- Introduction to business and management research.
- Formulating and clarifying the research topic.
- Conducting a literature review.
- Different research approaches.
- Ethics.
- Sampling.
- Use of secondary data.
- Collection methods for primary data.
- Analysing qualitative data.
- Analysing quantitative data using SPSS.
- Writing up th dissertation.

Textbooks

References

HBSG200 New Venture Development and Management
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Class participation, self study exercises, syndicate group discussions, presentations, external guest lecturers. • Assessment: Written case analysis and recommendations 25%, Individual Project/Course Study and class participation 25%, Team Project/Course Study in syndicates of 4; reports to be presented in class 50%.

This unit of study is available as an elective to all students in either a single or double degree.

Aims & Objectives
This unit provides an introduction to the skills necessary to commercialise new technology and to commence a new business operation. It will give the student a framework for generating, evaluating, and implementing new business opportunities. It will achieve this by looking at the practical problems and issues of resource acquisition, market development of new start businesses and the key challenges facing entrepreneurs into the 21st century. It will be global in coverage but also seek to focus on the topic from the context of Australia’s challenges and opportunities.
Specific aims are:

- Develop skills in sourcing new venture ideas.
- Develop skills in market evaluation for new technology.
- Understand financing and supply for new start operations.
- Understand the requirements for operational system design for new ventures.
- Know sources of information and assistance for new ventures.
- Develop an analytical and strategic perspective to the operation of new business ventures.
- The strategies required to design and produce internationally competitive goods and services.
- The strategies required to market new goods and services in local and international markets.

Content

- Introduction and Outline.
- Defining Entrepreneurial.
- Historical Development of Entrepreneurial Practice.
- Business Evaluation and Strategy Development.
- Business License Information Sources/Business Structures.
- People: Selection and Recruitment.
- Dealing with Partners and Associates.
- Finance, Taxation and Investors.
- Operational Issues in Start-Ups - Structure and Relationships.
- Building New Markets.
- Ongoing Management Issues: Handling Growth.
- Getting Investors Out/Public Listing.

Reading Materials

Reference material and prescribed texts are provided on Blackboard in the Unit outline each semester.

HBSH100 Behaviour and Communication in Organisations

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Laboratory • Assessment: Class Exercises, Group Work, Oral Presentation, Report, Journal Writing

A unit of study in the Bachelor of Information Technology.

Aims & Objectives

- To provide students with an understanding of the nature and importance of communication, interpersonal skills, individual and group development to members of organisations.
- To build fundamental academic skills, including written and verbal communication, presentation, reference skills, intellectual independence, analysis, synthesis, research, transfer of learning from one situation to another.
- To develop students' interpersonal and skills as team members in today's changing organisations.
- To allow students to experiment with various techniques, theories and approaches to communication and management through the use of experiential teaching techniques.
- To prepare students to appreciate the context of work and their own roles as organisation members, especially in the global context.
- To provide a foundation for subsequent studies.

Content

- Introduction to communication.
- Research.
- Report writing.
- Oral presentations.
- Interviewing skills.
- Groups and communication.
- Group dynamics/team work.
- Perception/self-disclosure.
- Anger, stress and managing feelings.
- Conflict.
- Negotiation.

Reading Materials

To be advised.

HBSH101 Behaviour and Communication in Organisations

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Laboratory • Assessment: Class Exercises, Group Work, Oral Presentation, Report, Journal Writing

A unit of study in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives

- To provide students with an understanding of the nature and importance of communication, interpersonal skills, individual and group development to members of organisations.
- To build fundamental academic skills, including written and verbal communication, presentation, reference skills, intellectual independence, analysis, synthesis, research, transfer of learning from one situation to another.
- To develop students' interpersonal and skills as team members in today's changing organisations.
- To allow students to experiment with various techniques, theories and approaches to communication and management through the use of experiential teaching techniques.
- To prepare students to appreciate the context of work and their own roles as organisation members, especially in the global context.
- To provide a foundation for subsequent studies.

Content

- Introduction to communication.
- Research.
- Report writing.
- Oral presentations.
- Interviewing skills.
- Groups and communication.
- Group dynamics/team work.
- Perception/self-disclosure.
- Anger, stress and managing feelings.
- Conflict.
- Negotiation.

Reading Materials

To be advised.

HBSH200 Organisation Behaviour

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HBSH100 Behaviour and Communication in Organisations • Corequisite: Nil • Teaching methods: Lectures, Laboratory Sessions • Assessment: Class Exercises, Laboratory, Journal Writing, Presentations, IBL Journal

A unit of study in the Bachelor of Information Technology.

Aims & Objectives

- To enable students to apply the theory and skills of organisation behaviour and to transfer that learning into an IT environment.
- To enable students to develop a perspective which demonstrates the place of IT in the total organisation.
- To establish an understanding of themselves, their impact on others and the way others influence their behaviour.
- To allow students to experience the satisfactions and difficulties inherent in working in groups.
- To learn behavioural skills applicable to IT environments.
- To analyse and provide solutions for people/technology problems.
- To enable students to appreciate the changing nature of work in an increasingly global context.
- To apply organisational behaviour knowledge to, and further learn from, Industry-Based Learning experiences.

Content

- The context of work and change in organisations.
- Organisational socialisation.
- Group dynamics and team performance.
- Managing intergroup relations.
- Diversity in organisations.
- Motivation.
- Leadership.
A unit of study in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
- To further develop an understanding of the application of administrative law essential to good management techniques.
- To develop an understanding of the origins and workings of administrative law.
- A general examination of administrative and decision-making processes on the federal and state levels with emphasis placed on the state jurisdiction.
- To understand the review process both on the basis of merits review and judicial review by examining the circumstances in which each takes place by way of challenge.
- To examine the circumstances where decisions are challenged on the basis of denial of justice.
- To develop an understanding of the nature and behaviour of organisations.
- To examine the characteristics and role of management.
- To understand the culture of change.

Content
- The consideration of efficient internal administrative procedures to ensure against liability for negligent advice.
- Regulatory controls - statutory duties and liability for breach, effective administration procedures and alternatives in regulatory techniques.
- Legal responsibility of business units, contractors and corporate entities.
- The role of the Ombudsman and Committees of Enquiry.
- The Administrative Law Act and review by courts and tribunals of the administrative process, the application of the rules of natural justice, notice and fair hearing, the duty to give reasons, impartiality and bias.
- Role of Civil and Administrative Tribunal (VCAT). Alternative dispute resolution/mediation.
- An introduction to organisational and management theory and practice.
- Organisational culture - myths, metaphors and behaviours.
- Management characteristics of leadership, power and decision-making, conflict and negotiations, management roles and team work/group processes.
- Financial and resource management. Organisational change.
- Human resources, industrial relations and workplace agreements.
- Organisational effectiveness models
- Competitive tendering, including client/contractor split, business plans, specifications, tender bids, tender evaluation, contract management.
- Principles of risk management.

Reading Materials

HBSL100 Introductory Law
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Tutorials, Workshops • Assessment: Class presentations, Examinations, Tests.

Aims & Objectives
- To gain an understanding of the Australian legal system and of the interrelationships between parliaments, statutory authorities and the courts.
- To develop an understanding of the influence of the judiciary in the law-making function both in respect of the interpretation of legislation and in the development of the common law.
- To develop the skills required in understanding the processes for enforcement of legal controls and in interpreting and applying legislation to problem-solving.

Content
- The Australian court system: civil and criminal process.
- Judges as a source of law: precedent and legal reasoning.
- Statutory interpretation, the context of words in a statute, the audience, the purpose.
- Particular rules: meanings limited to class or association, gaps in a statute, inconsistent provisions, conflict with property rights, penal provisions.
- Relevant case studies from contract law, company law, tort law and regulatory law.

Reading Materials
- HBSL200 Environmental Health Management 2
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HBSL100 Introductory Law • Corequisite: Nil • Teaching methods: Lectures, Tutorials, Class Exercises • Assessment: Assignments, Class presentations, Examinations, Tests.

Aims & Objectives
- To further enhance communication skills with the emphasis on vocational settings.
- To develop an understanding of the processes of legislative administration relating to public health and environmental protection.
- To develop an understanding of civil and criminal proceedings, laws of evidence, appropriateness of courts, powers of courts.

Content
- A review of the principles of effective communication skills applicable to the work setting, including risk communication, conflict resolution, stress management.
- Barriers to good communication, including ethnicity and culture, with an emphasis on ensuring appropriate message transmission, delivery and receipt.
- Development of written skills, report-writing requirements of large organisations.
- Letters and electronic data transfer.
- Ethical issues.
- The framework of environmental health laws.
- The Environment Protection Act.
- The Environment Protection Authority.
- The Health Act 1958, Enabling legal provisions regarding nuisance, infectious disease and accommodation.
- Public health powers and controls of the Local Government Act.
- The legal process of prosecution. Ambiguous allegations, rules and proof of service. Time limits, adjournment.
- The rules of evidence, statutory and judicial developments, burden and standards of proof, hearsay, documents, admissions, improperly obtained evidence. Witnesses.
- Sampling and entry powers of authorised officers under Health, Food and Environment Protection Acts.
- Problems caused by the concept of legal personality with corporate defendants.

Reading Materials
- HBT410 Information Systems Honours Dissertation
60 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn • Prerequisite: HBS415 Research Methodology and HBT411 Information Systems Advanced Reading Unit • Corequisite: Nil • Teaching methods: Supervision • Assessment: Written Dissertation.

Aims & Objectives
- A unit of study in the Bachelor of Business (Honours).
Aims & Objectives

Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this unit is a dissertation based on an original theoretical or applied problem. The dissertation will demonstrate the candidate's ability to conceptualise, undertake and present a research project, based on published theory, in a scholarly and independent manner.

The dissertation will provide a coherent explanation of the research study and follow an ordered sequence in which the research objectives, relationship to other scholarly work, methodology and strategies employed, and the results obtained are identified, analysed and evaluated. The topic of the dissertation, while being set by the student, must be consistent with the broad content of the discipline within which the research has been taken and the student's capacity to complete research into the topic in the prescribed time.

Aims & Objectives

After completing this unit students will have developed the ability to:

- Formulate a manageable and realistic research topic and plan.
- Undertake various forms of primary and secondary research.
- Analyse the literature and/or data collected.
- Compose a comprehensive and concise report that relates research findings to the research topic and previous published research, if appropriate.
- Formulate conclusion and recommendations and provide directions for future research.

Content

Normally, a student will produce a written minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBT411 Advanced Reading Unit and with the quality expectations of a work of this kind.

The dissertation will include:

- A statement of the research topic and background to the study.
- A current literature review.
- Research questions or hypotheses.
- Cogent argument.
- Clear conclusions and, if necessary, appropriate recommendations.

Reading Materials

References will be discipline specific.

HBT411 Information Systems Advanced Reading Unit

20 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn
Prerequisites: Nil • Corequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Literature Review 100%. Seminar presentation of the Honours dissertation proposal and written Honours dissertation proposal are hurdle requirements.

Aims & Objectives

This unit of study is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks.

The aims of this unit are to provide students with an opportunity:

- To explore the breadth and depth of their chosen area of study.
- To use an exploratory approach as a means of arriving at a viable topic for their dissertation.
- Students undertaking the language component will be required to read part of the prescribed reading in the chosen language.

Content

Students will be expected to read widely in their area of study from a variety of sources, including books and journal articles. The purpose of the readings is to engage the student in a critical appraisal of the material and to develop further their research instincts, as well as providing a foundation for the dissertation.

Reading Materials

References will be discipline specific.

HD3D001 Exhibition Design

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisites: Competence in a 3D modelling package such as AutoCAD, 3D Studio Max, or Solidworks • Teaching methods: Project-based studio activities including site visits, exhibition visits, workshops, panel reviews, review of ongoing work, exercises (in class) • Assessment: o.g. Research Project (30%), Exhibition Design (70%)

Aims & Objectives

This unit aims to introduce students to exhibition design as a specialist area of design practice. The museum, gallery and trade exhibition environment will be examined through both a lecture series and a series of studio-based activities organized around the development of the students own exhibition design projects.

The unit will explore the design parameters specific to the exhibition environment, including the museum context, the exhibition content from the designer's perspective, audience/visitor experience and a range of technical issues such as circulation/wayfinding, lighting and developing a narrative/communicating information.

At the completion of this unit students should be able to:

- Develop exhibition contents using standard development processes demonstrated through thorough exhibition planning, documentation and research records;
- Articulate the influence of the audience / visitor experience aspects of exhibition design on design development;
- Integrate circulation / way-finding / lighting / signage / display systems and interactive technology within an exhibition context;
- Develop a conceptual design proposal in response to a critically-informed understanding of the exhibition context;
- Articulate design intentions succinctly through presentations that demonstrate a clear communication strategy.

Content

The following aspects of exhibition design will be considered / discussed throughout the semester:

- The exhibition context: audience & visitor experience;
- Museum conditions;
- The role of the exhibition designer;
- The role of the curator;
- Circulation / way-finding within an exhibition context;
- Lighting in an exhibition context;
- New / interactive media in an exhibition context;
- Displaying artefacts / display techniques used in an exhibition context;
- Presenting an exhibition proposal.

References

HD3D002 Furniture Design

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: competent in perspective drawing and 3D-CAD software.
Workshop Induction essential • Teaching methods: Lectures, tutorials and in-class demonstrations to support project outcomes; Museum and Industrial visits, as required; Mock-up development techniques; Studios and workshops; Web-based resources. • Assessment: Project 1: Furniture Design History (15%); Project 2: Major project (70%); Studio exercises (15%)
A unit of study in the Bachelor of Design (Industrial Design) and Bachelor of Design (Interior Design).

Aims & Objectives
This unit aims to explore the principals of design and design methodologies associated with the furniture manufacturing industry. The unit will focus on creative thinking, design for production, human factors and developing concepts for a specific target market. It will provide students with an opportunity to develop knowledge and skills required for the communication of design ideas using a variety of both physical and digital mediums and further develop professional project management skills. Students will design and construct a furniture prototype gaining knowledge of furniture design, ergonomics, component manufacture, assembly methodologies, material and process specification and project management.

At the completion of this unit students should be able to:
• Explore and evaluate the work of prominent furniture designers and be able to relate 'classic' furniture to milestones in design movements and advances in materials and technology;
• Explore market sectors and environments with a view to innovation in furniture design;
• Articulate and apply issues relating to human factors and ergonomics in the context of practicality and usability;
• Undertake creative furniture development and design refinement using sketching, 2D and 3D CAD, digital visualisation, sketch modelling and prototyping;
• Design a piece of furniture that meets the needs of the intended user, environment or market sector;
• Use industry standard design processes for manufacture and materials.

Content
Topics for discussion will vary according to student projects, but will broadly include:
• Specific market sectors in furniture design;
• History of furniture design;
• Processes of design and manufacture for furniture;
• Innovative product development strategies.

References

HD3D003 Product Design Studio 1
12.5 Credit Points • 1 Semester • 66 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Design studio (3 hrs per week); Model making class (2.5 hrs per week); Assessment: e.g. Design Studio (60%), Model making class (40%)
A unit of study in the Bachelor of Design (Industrial Design).

Aims & Objectives
This unit aims to provide an introduction to generic product design and development processes; covering aspects of research, conceptualisation, concept development and the documentation/delivery of design outcomes. Design principles and basic engineering principles relevant to products will also be explored. Design briefs will be used as parameters for project based learning. Workshop skills will be developed to enable the production of both 3D sketch models and finished models, integral to later stages of product design and development processes.

At the completion of this unit students should be able to:
• Conduct investigations with the objective of informing the design and development of a specific product;
• Record and visually communicate research and design work using standard academic protocols;
• Apply product design and development processes and associated techniques to create design solutions within the parameters of a design brief;
• Use simple engineering principles relevant to product design including levers, pivots, mechanisms, basic material properties and processes;
• Produce 3D sketch mock-ups to scale using basic workshop materials such as foam, timber and cardboard;
• Produce finished models that communicate product details such as form, finish and scale of design concepts that they have developed.

Content
• Exploration of concepts, ideas and design thoughts;
• Design and engineering development techniques and principles;
• Use of workshop facilities and equipment;
• Model making techniques;
• Visualisation, rendering and presentation of design work.

Textbooks
Cullaro, D, Process, Materials and Measurement: All the Details Industrial Designers Needs to Know But Can Never Find, Rockport Publishers, 2006

Recommended Reading
Curve, design magazine, Beesting Publishing
Dyson, J, Against the Odds, Texere Publishing, 2002 73, design and technology magazine, Future Publishing

HD3D004 Product Communication
12.5 Credit Points • 1 Semester • 49 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Studio classes • Assessment: e.g. Project 1: Perspective drawing tasks (25%); Project 2: Orthographic tasks (25%); Project 3: Rendering tasks (25%); Project 4: Sketch models (25%)
A unit of study in the Bachelor of Design (Industrial Design).

Aims & Objectives
This unit aims to introduce fundamental drawing and rendering skills to facilitate the development and presentation of design ideas. A range of visualisation skills particularly suited to concept generation and refinement stages of the design process will be explored; covering perspective drawing, freehand sketching, orthographic drawing, rendering techniques, exploded views and drawing techniques for constructing complex forms. Media used will include colored pencils, fineliners, markers, pastels and templates. Content will also extend to the creation of 3D sketch models from basic materials such as blue foam and card.

At the completion of this unit students should be able to:
• Construct and clearly lay out objects drawn in orthographic projection and its variations using appropriate protocols;
• Create accurate freehand drawings of various objects and products in perspective, orthographic projection, technical layout and exploded perspective;
• Create freehand line drawings that accurately depict colour, shape and form;
• Create 2D and 3D renderings, demonstrating use of highlight, shadows, hues and colour saturation to depict form, predominantly through masker and pastel application;
• Create simple 3D sketch models (mock-ups) using basic materials, appropriate to communicate details such as form, scale, and proportion.

Content
Students will explore a range of visualisation skills and techniques that are particularly suited to idea generation and conceptual development.
• Perspective drawing;
• Orthographic projection;
• Technical drawing layout;
• Freehand exploded drawing;
• 2D and 3D rendering;
• 3D sketch models (mock-ups).

References
Teaching methods: This unit will be primarily conducted through interactive online studios, blended learning, and asynchronous discussion groups. The continuing role of products and the importance of CAD software in design development, product detailing and engineering processes will be conveyed.

At the completion of this unit students should be able to:

- Apply 2D and 3D CAD principles to product design development;
- Create fully dimensioned sectional and assembly technical drawings of a product component;
- Understand CAD conventions to competently generate 2D CAD outputs;
- Interpret existing CAD data;
- Create a basic solid model (3D CAD).

Content

- Introduction to CAD interfaces and menus;
- Setting up an orthographic drawings;
- Setting up assembly drawings;
- Creating sectional views;
- Producing shapes and forms;
- Scaling;
- Producing curved and radiused forms;
- Title block set up and information;
- Outputting and printing of drawings;
- File saving and file types;
- Introduction to 3D modelling.

References


HD3D005 Communication Technology 1

12.5 Credit Points • 1 Semester • 48 Hours per Semester • Prahran

Aims & Objectives

This unit aims to introduce basic drafting conventions and product detailing used to specify the manufacture and assembly of products. Skills in Solidworks will enable the generation of 2D engineering drawings of product components and fully assembled products in accordance with AS 1100. Students will be introduced to basic 3D modelling and the role and importance of CAD software in design development, product detailing and engineering processes.

At the completion of this unit students should be able to:

- Use the principles of basic engineering drawing conventions in accordance with AS 1100;
- Create fully dimensioned sectional and assembly technical drawings of a product component;
- Understand CAD conventions to competently generate 2D CAD outputs;
- Interpret existing CAD data;
- Create a basic solid model (3D CAD).

Content

- Introduction to CAD interfaces and menus;
- Setting up an orthographic drawings;
- Setting up assembly drawings;
- Creating sectional views;
- Producing shapes and forms;
- Scaling;
- Producing curved and radiused forms;
- Title block set up and information;
- Outputting and printing of drawings;
- File saving and file types;
- Introduction to 3D modelling.

References


HD3D006 Communication Technology 2

12.5 Credit Points • 1 Semester • 48 Hours per Semester • Prahran

Aims & Objectives

This unit aims to develop further product, manufacturing, and assembly skills for products utilising CAD software. Skills in 3D software will enable the generation of 2D and 3D engineering drawings of product components and fully assembled products. An introduction to 3D modelling will also be provided. The continuing role and importance of CAD software in design development, product detailing, engineering processes, and surface detailing will be conveyed.

At the completion of this unit students should be able to:

- Apply 2D and 3D CAD principles to product design development;
- Create fully dimensioned sectional and assembly technical drawings of a product component;
- Create an exploded product view with parts and materials listing;
- Apply engineering drawing conventions to CAD layouts and documentation;
- Create rendered surfaces and textures for 3D models and animations.

Content

- CAD interface and menus;
- Producing advanced shapes and forms;
- Producing advanced curved and radiused forms;
- 3D modelling and texture surfacing;
- 3D animation;
- Producing exploded product views and parts/materials listing;
- Importing files.

References


HD3C001 20th Century Design

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran

Aims & Objectives

This unit aims to build an interactive e-learning community, focusing on the history of 20th century design in relation to the contemporary context. The unit will explore how design has been historically practised, theorised and discussed, and how this informs design today. Key designers, movements, definitions and developments such as Modernism and Post Modernism will be viewed within international and local frameworks, with the aim being to stimulate students' self-driven exploration of design in the past, present and future. Design discourse and academic skills will be developed through the use of blended learning strategies that engage students in independent, small and large group learning activities.

Content

This unit provides an introduction to 20th Century design history, focusing on a range of key designers, innovations and movements such as Modernism, International Modernism, and Post-Modernism. It explores aspects of the historical development of design as a creative, cultural and professional practice, while referencing the visual, material and spatial languages of design: graphics, products, interiors, environments, multi-media, film and animation. The economic and cultural role of design is explored, together with the interface of design with the arts, and more significantly with modern technology, materials, production and consumerism. A contemporary lens will be used to explore the relevance of the past to the present.

A range of topics will be covered, including:

- Modernism/post-modernism/contemporary design
- Design typologies;
- Design heroes;
- Innovation in design;
- Internationalism/cultural pluralism;
- Design, ideas and cultural production;
- Design as political and social action;
- Design, technology and change;
- Theories and principles of design;
- Evolution of design as a professional practice;
- Popular culture/high culture.

Throughout the unit, students will engage in a number of activities which will include:

- Induction program into online learning;
- Participation in online discussion of lectures and screenings;
- Small and large group online interactive activities;
- Synchronous and asynchronous discussion groups;
- Online quizzes;
- Excursions.

Reading Materials


HDC302 Methods of Investigation
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisites: Nil • Teaching methods: Lectures: Class presentations and activities; Online discussions and resources • Assessment: e.g. Workbook 1 (25%); Proposal and background documentation (25%); Workbook 2 (25%); Online participation (25%)

A unit of study in the Bachelor of Film and Television, Bachelor of Design (Communication Design), Bachelor of Design (Multimedia Design), Bachelor of Design (Industrial Design) and Bachelor of Design (Interior Design).

Aims & Objectives
This unit emphasises contextual investigations as integral to solving practical design problems. It explores how a designer might generate and apply information to design, introducing the skills and literacies fundamental to design research. Students will undertake informed design development and the exploration of research potential within a design brief.

At the completion of this unit students should be able to:
- Explore a variety of methods for investigating the context for a design brief;
- Prepare a justifiable design proposal based on contextual research;
- Use evidence, analysis, and argument in the preparation of a visual and written report;
- Participate in online critical discussions, postings and peer support;
- Understand the relationship between investigative method and design decisions;
- Work in groups and independently to produce a visual and written design presentation.

Content
Students will be introduced to various facets of investigation for design, which may include:
- Introduction to academic skills;
- Varies research methods;
- Justification of investigative methods, interpretative frameworks and design decision-making processes;
- Creative techniques for exploring design problems;
- Ethical issues relating to research investigation and team-work.

Reading Materials
Noble, J.; Bestley, R. 2005 Visual research: an introduction to research methodologies in graphic design, London, AVA.
Warnke, C. 2003 Idea Revolution: guidelines and prompts for brainstorming alone, in groups or with clients, HOW Design Books, Ohio, US.

HDC303 Design Studio
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisites: Nil • Teaching methods: Independent group / individual research and investigation tasks, studio-based activities supporting the methods and materials investigations, and presentations will be driven by the direction and delivery of content as lectures • Assessment: e.g. Project 1a (10%), Project 1b (20%), Project 2 (30%), Project 3 (40%)

A unit of study in the Bachelor of Design (Communication Design), Bachelor of Design (Multimedia Design), Bachelor of Design (Industrial Design) and Bachelor of Design (Interior Design).

Aims & Objectives
This unit of study aims to introduce students to the fundamentals of the design exploration: visual and tactile conceptualisation and basic design representation appropriate to different design disciplines in the context of creative problem solutions.

At the completion of this unit students should be able to:
- Research, Record and Reflect - organise and document visual research and concept development;
- Explore breadth and depth in concepts, ideas and development, using experimentation to develop creative solutions;
- Explore the mark as a medium of ideation, visual problem solving and design representation;
- Engage with 3D model making as mediation in the development of ideas in form and space;
- Investigate sequential design and the communication of idea, information and narrative;
- Use the workbook/portfolio as a method of exploration and documentation of ideas, using appropriate formatting for text and images;
- Reflect on and evaluate visual and tactile research documentation, mapping, model-making and visualisation techniques.

Content
Students will explore the design process using visualisation methods that may include:
- Mark-making as analysis, representation, communication;
- Imaging as idea, gesture, information;
- Basic model making techniques;
- 2D, 3D and 4D design representation techniques;
- Compilation of Workbook/portfolio as a way of documenting design process and ideas;
- Formatting for text and image;
- Sequential design and narrative exploration.

Reading Materials
Koenig, PA 2006 Design graphics: drawing techniques for design professionals, Pearson Prentice Hall, US.
Additional references may be posted on Blackboard during the teaching period.

HDC04 Digital Design
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisites: Nil • Teaching methods: Learning, teaching and assessment in this unit is project based • Assessment: e.g. Design Project 1: 2D-3D visualisation (50%); Design Project 2: Acquisition and manipulation for image series (50%)

A unit of study in the Bachelor of Design (Communication Design), Bachelor of Design (Multimedia Design), Bachelor of Design (Industrial Design), Bachelor of Design (Interior Design) and Bachelor of Film and Television

Aims & Objectives
This unit aims to develop students' ability to use computer technology for the expression of ideas and for creating static and two-dimensional communication. Students will be encouraged to explore vector and raster oriented software tools to achieve communication objectives within specified formats. This unit of study is particularly concerned with explorative, creative thinking expressed through the appropriate application of software to design propositions. Some key production and legal issues associated with digital design will be introduced in the course of this unit. Students will be encouraged to critically engage with complex questions of design as property and/or production and issues in digital visualisation.

At the completion of this unit students should be able to:
- Pre-visualise, draft and refine communication concepts, making appropriate choices of software and digital hardware for design objectives;
- Apply systematic processes of digital technology leading to effective production practices for static two-dimensional outcomes;
- Recognise their copyright and intellectual property (IP) responsibilities within their design professions and reference all sources appropriately;
- Demonstrate independent research skills, emphasising the critical use of available information for decision-making through comprehensive evidence of process in work-books;
- Explore potential of vector and raster oriented drawing software;
- Choose appropriate software and digital hardware for execution of visual communication tasks.

Content
Topics for discussion may include:
- Software choices;
- Vector and raster formats;
- Resolution and file formats;
- Colour management and formats;
- Systematic digital processes;
- Image acquisition;
Aims & Objectives
This unit aims to introduce key issues in contemporary design and media practice and their relation to social, economic and political contexts. Students will be introduced to appropriate research and writing methodologies and apply these skills to design practice and projects.

At the completion of this unit students should be able to:
- Investigate and analyse design and media issues in relation to social, economic and political contexts using primary sources;
- Articulate a range of contemporary issues related to design and media practice;
- Use a body of relevant critical theory in the form of an argument and apply it to design and/or media practice;
- Develop a cohesive argument about a design issue (visual or written) that articulates a point of view, suitable for a published (professional) journal;
- Participate in online discussions addressing design issues.

Content
The unit will explore a wide range of thematic areas that may include discussions on topics such as:
- Design and corporate strategy;
- Design for environmental, global and social sustainability;
- Design philosophies;
- Aesthetics in the 21st century;
- Articulate a range of contemporary issues related to design and media practice;
- Key contemporary practitioners;
- Design management;
- Aesthetics in the 21st century;
- Design for environmental, global and social sustainability;
- Concepts of user-centred design.

Reading Materials
Lunenfeld, P (ed) 2010 The Digital Dialectic, MIT Press, USA.
Lupton, E. 2002 Skin: Substance and Design, Cooper Hewitt, Smithsonian & Princeton Arch. Press, USA.

Aims & Objectives
This unit aims to introduce students to professional practice in the design industry. The unit emphasises the importance of managing design projects and introduces elements of project and team management, emphasising real-world scenarios and using multi-disciplinary teams that compete through a project tender process. The project explores alternative ways to articulate the values and benefits of design. Teams are expected to conceptualise, develop and produce a design proposal that fulfils a distinctive brief with financial, business, cultural and social constraints.

At the completion of this unit students should be able to:
- Work in a multi-disciplinary team and apply principles of effective leadership and teamwork;
- Utilise fundamental project management practices reflecting the professional practice of design;
- Utilise real-world and conceptual investigations to underpin concept development for a large-scale project;
- Articulate the relationship between design, business and innovation through proposal documentation;
- Develop a persuasive and professional quality design proposal that realistically addresses budget and legal considerations;
- Organise and undertake succinct, well-structured and persuasive visual and verbal group presentation.

Content
This unit aims to introduce students to the principles of project management in the context of developing a written proposal in response to a brief. Topics discussed may include:
- The Design Process;
- The Design Brief;
- Writing a design proposal;
- Design and corporal strategy;
- Project planning and management;
- Teamwork;
- Time management;
- Budgeting and financial management;
- Managing creativity;
- Intellectual property;
- Presentation skills.

Reading Materials
Burja De Muzza, B 2003, Design Management: using design to build brand value and corporate innovation, New York, Alworth Press.
Boyle, G 2003, Design project management, Ashgate.
Bruce, M 2002, Design in Business - strategic innovation through design, UK, Pearson.
Design Management Institute, Design Management Journal (Quarterly journal), Boston.
Goslett, D, 1971, The professional practice of design, UK, Batford.

Aims & Objectives
This unit aims to develop professional presentation and communication skills in a 'real-world' design context. The unit focuses on key skills of critical analysis, refinement and articulation of design as a professional practice, with an emphasis on targeted communications to a specific audience. Students will undertake folio development, project elaboration and articulation, proposal writing and presentations.

At the completion of this unit students should be able to:
- Explore folio media options;
- Critically review and articulate folio presentations for self and others;
- Identify and analyse differing audiences for design communication and their respective requirements;
• Redline folio presentation edited to appropriate media aimed at a specific target audience;
• Critically evaluate and articulate a project intent, process and outcome in an interview situation;
• Develop a persuasive project presentation which identifies stakeholder groups, budgeting and technical requirements;
• Use appropriate information and narrative structures in the context of visual, verbal and written presentations.

Content
This unit requires that students combine research, design outcomes idea development and communication skills to facilitate the effective presentation of design to a diverse audience. Students will use visual, verbal and written techniques to engage and inform.

Topics discussed may include:
• Critical folio editing;
• Folio media;
• Folio presentation;
• Design documentation;
• Communicating to a target audience;
• Verbal, visual and written narratives;
• Information hierarchies;
• Presenting professionally.

Reading Materials
Design Management Institute, Quarterly Journal, Design Management Journal, Boston, US.
Eisenman, S 2006 Building design portfolios: innovative concepts for presenting your work, Routledge, US.
Godlett, D 1971 The professional practice of design, Batsford, UK.
Myers, OR 2005 The graphic designer's guide to portfolio design, John Wiley & Sons, US.
Preddy, S 2004 How to market design consultancy services: finding, winning and keeping clients, Gower, UK.

HDC008 Design Systems and Services
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Pratihan • Prerequisite: Nil • Teaching methods: Delivery will include lectures and class-based seminars/tutorials • Assessment: Assessment Task 1: (50%); Assessment Task 2: (50%)
A unit of study in the Bachelor of Design (Communication Design), Bachelor of Design (Interior Design), Bachelor of Design (Industrial Design) and Bachelor of Design (Multimedia Design).

Aims & Objectives
The aim of this unit of study is to introduce students to the principles of systems and service design. The unit provides an introduction to how designers can make a significant contribution to the improvement of existing systems and services and the creation of entirely new ones. The design of systems and service involves both tangible and intangible elements often in the form of high level organizations (public sector and private enterprise), technology, communication, and human behaviours. Innovations are sought that deliver, for example, more efficient processes and procedures, improved ecological performance and sustainable practices, greater customer satisfaction and competitive advantage.

At the completion of this unit students should be able to:
• Identify the scope of system and service design in relation to business and the design industry;
• Apply mapping techniques and methods to visualize the system or service;
• Articulate the role design and designers play in the design of systems and services;
• Articulate how the principles of system and service design broaden the opportunities for designers to apply their creative capabilities over a broader spectrum of business and commerce;
• Engage in critical research/investigation and analysis of user(s), their context(s) and the processes relating to the design and development of systems and services;
• Undertake work in collaborative interdisciplinary teams in the definition and development of systems/services design projects;
• Apply user-centred design principles, scenario-based development techniques and iterative design processes;
• Develop well-considered, expressive and visionary design systems and/or service outcomes.

Content
The unit of study addresses the development of systems and services through creative, yet structured, techniques that provide discernable benefits for users within the context of the ‘total user experience’. Topics for study may include the following:
• Analysis of user need and demographic context of user(s), client/business, community;
• Modelling and analysis of individual users, organizations, services and systems;
• User-centred design;
• Iterative design (design - build/prototype - test/evaluate);
• Scenario-based development techniques;
• Sustainable practices.

Reading Materials
Manzini, E 2005 Enabling solutions, social innovation and design for sustainability, DIS-indaco, Politecnico di Milano.

HDC009 Design and Business Strategy
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Pratihan • Prerequisite: Nil • Teaching methods: Lectures, seminars, workshops, online content. For students studying Industry Placement interstate or internationally this unit will be delivered totally online and at distance • Assessment: e.g. Group Workbooks (20%), Major Project (80%)
A unit of study in the Bachelor of Design (Interior Design), Bachelor of Design (Communication Design), Bachelor of Design (Multimedia Design), and Bachelor of Design (Industrial Design).

Aims & Objectives
This unit aims to prepare students for employment within industry and/or the establishment of a small design practice or business. The unit will enable students to develop an understanding of professional practice with a particular emphasis on the strategic use of design within an organization. Students will be required to conceptualise and develop an idea for a new business and apply this within the framework of a business plan as a team. Students would be expected to investigate market demand, target audience, marketing opportunities, operational complexities and financial models.

At the completion of this unit students should be able to:
• Identify the value and benefits of design within a business context through the conceptual development of a business idea;
• Thoroughly record investigations in to potential business opportunities and undertake careful analysis of market, feasibility, competition and demand;
• Articulate an understanding of the relationship between design, business and innovation in proposals, documentation and plans;
• Identify the process for establishing a small business and anticipate realistically how a business might operate;
• Prepare a fully branded business concept for a small business in the form of visual identity, product designs and marketing campaigns;
• Write a persuasive, thorough and well-structured business plan that clearly articulates evidence of market demand and a viable business proposition.

Content
Students are expected to participate in lectures and discussions that deal with professional practice within industry. Topics may include:
• The economic role of design;
• Business planning and writing business plans;
• Innovation and entrepreneurship;
• Market research;
• Marketing principles;
• Branding;
• Understanding customer behaviour;
• Budgets and financial management;
• Legal requirements of business planning.

Reading Materials
Boljic de Muzio, B 2003, Design management: using design to build brand value and corporate innovation, Alworth Press, USA.
Bruce, M 2002, Design in Business - strategic innovation through design, Pearson, UK.
Goslett, D 1971, The professional practice of design, Batsford, UK.
Marzano, S 1999, Creative value by design, Lund Humphries, UK.
Design Management Institute (Quarterly) Design Management Journal, Boston, USA.
BRW (Business review weekly), AUS.
Ant Hill Enterprises, Bi-monthly magazine, Australian Anthill, Melbourne, AUS.

HDCOM111 Introduction to Communication Design
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran
Prerequisite: Nil • Teaching methods: Studio-based with an emphasis on experiential and project-based learning • Assessment: e.g. Project 1: Mark Making and the Interpretation of Form (50%); Project 2: Symbol Design and the Development of Visual Identity (50%)
A unit of study in the Bachelor of Design (Communication Design).

Aims & Objectives
This unit seeks to introduce students to, and facilitate a fundamental understanding of, the practice of communication design via exploration of the relationship between type, image and meaning in visual communication. It is expected to provide a foundation for, and models of, ways of proceeding with design-based projects.

Objectives
This unit is expected to provide a foundation for, and models of, ways of proceeding with design-based projects.

At the completion of this unit students should be able to:
• Engage with research and design process methods and models relevant to design enquiry;
• Organise and record design research, concept and design development leading to the development of design proposals;
• Explore the graphic expression of an idea through the use of design elements and principles, word (typography) and image;
• Critically evaluate and reflect on design process and project outcomes.

Content
The unit seeks to introduce students to fundamental aspects of the practice of communication design. Topics may include:
• Collecting, analysing and interpreting research-based material;
• Planning, management and documentation of design projects;
• Creative problem solving strategies and idea generation methods;
• Combining word, image and idea to create effective communication;
• Design elements and principles as a basis for developing form suitable for visual communication;
• Spatial organisation methods;
• Critical evaluation, reflection and review.

Reading Materials

Newark, Q 2002 What is Graphic Design? Rotovision, Switzerland.

Additional readings and references may be provided through Blackboard, students are advised to check the listings at the commencement of the unit and regularly thereafter.

HDCOM112 Typography
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran
Prerequisite: Nil • Teaching methods: Studio-based with an emphasis on experiential and project-based learning • Assessment: e.g. Project 1: Information Hierarchies and Spatial Manipulation (50%); Project 2: Type as Image (50%)
A unit of study in the Bachelor of Design (Communication Design).

Aims & Objectives
This unit seeks to introduce students to aspects of the history and current professional practice of typographic design as a fundamental aspect of practice within the context of Communication Design.

At the completion of this unit students should be able to:
• Critically review aspects of typographic history, conventions and applications;
• Document research and design development for typographic design proposals;
• Explore the manipulation of information, typographic expression and space within various contexts;
• Develop typographic for effective communication in both small and large-scale design formats within the context of professional practice in communication design.

Content
This unit seeks to introduce students to fundamental aspects of communicating effectively with type. Topics may include:
• Type history, technology, terms and conventions;
• Type form and families;
• Type legibility and expression;
• Manipulating information (typographic) hierarchies;
• Typographic design and spatial manipulation.

Textbooks
Lupton, E 2004 Thinking With Type, Princeton Architectural Press, New York.
Recommended Reading
Baines, P 2005 Type and Typography, Lawrence King, London.
Brignatt, R 2005 The Elements of Typographic Style, Hartley Marks, Point Roberts, WA.
Kane, J 2002 A Type Primer, Lawrence King, London.
Samara, T 2005 FFW Publication Design Workbook, Rockport, MA, USA.

Additional readings and references may be provided through Blackboard, students are advised to check the listings at the commencement of the unit and regularly thereafter.

HDCOM121 Form and Structure for Communication Design
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran
Prerequisite: Nil • Teaching methods: Project based learning, in a studio and lab environment comprising studio based lectures, presentations, demonstrations and tutorials • Assessment: e.g. Project 1: 2D design project (50%); Project 2: 3D design project (50%)
A unit of study in the Bachelor of Design (Communication Design).

Aims & Objectives
This unit seeks to introduce students to the theory, principles and practice of form and structure for 2D communication design. Through a program of project based and peer reviewed learning, students will complete a series of activities that will demonstrate a conceptual, lateral and informed understanding and application of this knowledge.

At the completion of this unit students should be able to:
• Explore and use communication theory and conventions in 2 dimensional visual design development;
• Interpret a project brief and apply investigative, conceptual and lateral
approaches to idea development;
- Choose and use appropriate layout, illustration and imaging software for design projects;
- Develop communication objectives and use visual experimentation to resolve design communications;
- Use design development processes including documentation, reflection and response to feedback;
- Achieve a high standard of finish and presentation for design outcomes;
- Use interactive and screen based media to extend 2 dimensional designs;
- Record, evidence and reflect on project development and resolution.

Content
Topics may include:
- Form, structure;
- Composition;
- Grid structures;
- Visual hierarchies and strategies;
- Introduction to printing terminology;
- Print based assembly and publishing software;
- Drawing and imaging and acquisition software;
- Imaging, animation, assembly and publication software for interactive document applications;
- Additional software or technologies as they become relevant.

Recommended Reading
Bingham, R. 1999 The Elements of Typographic Style, Hartley & Marks, Vancouver.
Kane, J. 2002 A Type Primer, Laurence King, London.

HDCOM122 Photography in Communication Design
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: Nil • Teaching methods: Lectures, studio work and practical demonstrations • Assessment: e.g. Project 1: Compositional exploration (15%); Project 2: Using creative camera controls (15%); Project 3: Appreciation of light and its effect on image (15%); Project 4: Photographic genre (15%); Project 5: Post Production manipulation and capturing devices, editing of images (40%)
A unit of study in the Bachelor of Design (Communication Design).

Aims & Objectives
This unit aims to introduce students to the application and use of photography in design through creative use of camera controls and techniques. This unit aims to generate an understanding of the symbiotic relationship between the photographic image and other design skills and develop an understanding of digital practice, which include resolution, colour, contrast, and manipulation of the image.

At the completion of this unit students should be able to:
- Use camera controls creatively to execute a photographic outcome;
- Explore principles of lighting and apply techniques to personal applications;
- Explore space, tension and dynamics through compositional exploration and the role of the photographic image to create abstracted, constructed, fabricated and factual visual messages;
- Explore digital cameras and other capture devices for the photographic image making;
- Employ editing techniques and analytical analysis of the photographic image.

Content
Topics covered may include:
- Basic camera controls - depth of field and movement and setting the right exposures;
- Resolution, white balance, ASA, ASA and other digital requirements;
- Lighting conditions and types of lighting and its effect on the photograph;
- Colour and contrast plus consideration for monochromatic output;
- Image scaling and abstraction for visual impact;
- Photographic compositional exploration - ways of seeing, varying viewpoint, angle, perspective;
- Research a variety of photographic genres and specific photographers;
- Digital capture devices and other means of obtaining a photographic image;
- Post production of image with regard to final output, i.e., the printed image vs web.

Reading Materials

HDCOM211 Typography for Publication
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: Familiarity with Indesign software • Teaching methods: Digital studio-based activities where students will develop software knowledge and skills through experiential and project-based learning • Assessment: e.g. Project 1: Advanced typographic conventions and systems in a publication design (50%); Project 2: Production based conventions and systems in publication design (50%)
A unit of study in the Bachelor of Design (Communication Design).

Aims & Objectives
This unit seeks to enhance an understanding of typographic design suitable for the publication of documents at an advanced level, and as an aspect of professional practice within the context of communication design.

At the completion of this unit students should be able to:
- Document research for the design development of typographic design proposals;
- Apply formal aspects of page and document design within publication design contexts;
- Plan and apply software-based style sheets and multiple master pages;
- Utilise typographic conventions consistently at an advanced level;
- Demonstrate attention to detail within a complex publication design context.

Content
This subject aims to develop skills suitable for the publication of documents at an advanced level. Topics may include:
- Legibility, readability and editing conventions;
- Grids, proportions, page and document structure;
- Style sheets and master pages;
- Multi-sectioned publications.

Reading Materials
Bingham, R. 2005 The Elements of Typographic Style, Hartley Marks, Point Roberts, WA.
Kane, J. 2002 A Type Primer, Laurence King, London.

HDCOM124 Package Design
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: Nil • Teaching methods: Lectures and studio based learning workshops • Assessment: e.g. Research into the Market (10%); Concept Development (50%); Implementation (40%)
A unit of study in the Bachelor of Design (Communication Design).

Aims & Objectives
This unit aims to introduce students to the principles of package design. The need to enclose products within a containing device for protection, transport and presentation purposes calls for specific research, conceptual and production values. This unit addresses the different materials and forms of packaging design as well as considering the economic, environmental and sustainability issues associated with packaging.

At the completion of this unit students should be able to:
• Investigate and analyse a packaging issue in relation to a defined market;
• Explore multiple points of view in terms of economic, environmental and social issues in designing a package;
• In collaboration with industry, identify constraints, practical issues and design requirements, and apply three dimensional conceptual forms to a range of potential solutions;
• Incorporate peer, industry and tutor feedback to identify the most appropriate creative solution for refinement;
• Document, evaluate and present a designed outcome to a target group and client.

Content
Topics for discussion may include:
• Literal and lateral thinking;
• Elements and principles of design;
• Image, colour and photography;
• The design industry;
• Three dimensional forms.

Reading Materials
Ambrose, G 2003 This End Up: original approaches to packaging design, Rotovision, Switzerland.
Dewison, E 1999 Packaging Prototypes, Rotovision, Switzerland.
Krause, J 2002 Color Index: over 1,100 color combinations, CMYK and RGB formulas for print and Web media, HSW Design Books, Ohio.
Shepherd, R & Raats, M (eds.) 1995 Handbook of Food Additives: an international guide to more than 7,000 products by trade name, chemical, function, and manufacturer, Gower, Hampshire.

HDCOM221 Branding and Identity
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: Nil • Teaching methods: Project work in studio classes, supported by compulsory weekly lectures • Assessment: e.g. Project 1: Semiotics of Type (15%), Project 2: The Language of Type (40%), Project 3: Corporate ID (45%)
A unit of study in the Bachelor of Design (Communication Design).

Aims & Objectives
Professional designers work with identity — sometimes through the branding of products, or the development of corporate identities, or the branding of a company's communications to reflect an existing identity. The aim of this unit is to explore how identities are developed for a specific market, and how the different elements of identity work within a specific cultural context to 'speak to' a target market. This knowledge will underpin the development of a branding project focussing on a particular company or product and target market. Throughout this unit, emphasis will be placed on the use of semiotics, including its use as a valuable analytical tool for the visual communication professions.

At the completion of this unit students should be able to:
• Undertake self-directed investigation and reporting into an appropriate target market research;
• Apply the results of market research to conceptual development of a brand identity project;
• Develop results of market understanding to include semiotic analysis in brand identity design development, with a particular emphasis on typographic elements of the design;
• Explore notions of creativity and innovation through design investigations and practice;
• Use skills in project management, including time management, staged development and adherence to project brief;
• Engage with design as a reflective practice through workbooks and project documents.

Content
This unit explores the meaning and use of semiotics as a language to describe and assess visual communication. It makes use of this language in analysing and creating branding and identity solutions for given briefs. Particular emphasis is placed in this unit on the language of typography and its place in the construction of identity for products, services and companies.

Reading Materials
Additional readings will be provided through Blackboard, students are advised to check the listings at the commencement of the unit and regularly thereafter.

HDCOM222 Visual Language
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: Nil • Teaching methods: Lectures, films, readings, seminar discussions, discussion of sound materials to demonstrate theoretical principles, and studio sessions that will include peer reviews • Assessment: e.g. Project 1 (30%); Project 2 (40%); Design Research Journal (30%)
A unit of study in the Bachelor of Design (Communication Design).

Aims & Objectives
Visual language links theories of language and sign production with a number of design outcomes that should reflect and use theory to strengthen design decision-making processes. This unit aims to develop an understanding of visual language as it is used in design discourse at both a theoretical and practical level, informing a project outcome.

At the completion of this unit students should be able to:
• Articulate and demonstrate some key models of sign construction;
• Recognize concepts of code and genre as they apply to design applications;
• Demonstrate an understanding of semiotics and visual rhetoric through the design of a poster series.

Content
Overview the semester the course moves from the concept of language in oral and visual forms to concepts of myth, metalanguage and code leading to semiotic analysis as a way of understanding meaning formation through communication design. Each of the design elements - space - type - image - colour and materials will be considered in detail. Finally visual rhetoric will be considered as a systematic way of forming visual arguments that will be demonstrated through a final poster series project. Accordingly, topics for discussion may include:
• Oral language, text and visual language - similarities and differences;
• Barthes' concept of myth and semiotics;
• The design elements - space - type - image - colour - materials;
• The idea of visual rhetoric as a device to better understand and broaden visual expression.

Reading Materials
Burnett, R 2004 How Images Think, MIT Press, Massachusetts.
Robertson, K 2002 Sh't Design, Conference Paper, Barcelona.
Williamson, J 1975 Decoding Advertisements, Marion Boyars, London.

HDCOM311 Communication Design Strategy
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: Competence in the following software packages is expected: MS Word, Acrobat, Macromedia Flash, Adobe CS • Teaching methods: Project work will be briefed, developed, presented, critiqued and peer reviewed in the studio. Discussions, consultations, feedback and direction to research and reading will occur online. Lectures will provide project content and management. • Assessment: e.g. Task 1: Data Analysis (10%); Task 2: Communication Plan (20%); Task 3: Communication Design (70%)
A unit of study in the Bachelor of Design (Communication Design).

Aims & Objectives
The aim of this unit is to engage students in the development of a strategic communication design project from its initiation to evaluation. The unit will consolidate understanding of design research methods and conceptual development.
through design practice.

At the completion of this unit students should be able to:

- Engage with research methods relevant to design enquiry;
- Write a research instigated communication plan and design brief;
- Develop designed communications for a selection of media systems;
- Record and organise design research, concept development and execution;
- Execute strategically targeted designed communications;
- Publish design outcomes as an authored proposal document.

Content

- Accessing, analyzing and presenting research data;
- Developing a creative strategy and communication plan;
- Investigating selected media systems;
- Developing communication design concept and idea;
- Executing designed communication outcomes;
- Publishing a design presentation document.

References


A detailed list of references and online reserve articles and books is posted on this unit's Blackboard site.

HDCOM312 Design for Production

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Working knowledge of standard design production software such as Photoshop, InDesign and Illustrator and an understanding of basic colour print production is required. • Teaching methods: Lecture and studio-based learning with ongoing project development and assessment tasks • Assessment: e.g. Production research (30%); Design for press (30%); Design for production (40%)

A unit of study in the Bachelor of Design (Communication Design).

Aims & Objectives

This unit aims to introduce a range of industry standard production processes, including print production. It will explore methods of selection and sourcing of appropriate suppliers and manufacturers in relation to a specific project outcome. This unit emphasises workflow for production, and examines communication issues for designers and manufacturers. Various aspects of production will be explored, including software and design methods that support design as activity for production, for mass production or for one-to-many communication.

At the completion of this unit students should be able to:

- Use industry standard systems, methodologies and technologies relevant to communication design practice within the professional design industry;
- Use design project management skills and apply business systems and production processes to design projects;
- Investigate local printers, suppliers and manufacturers as appropriate to a specific project brief;
- Prepare design projects for appropriate production outcomes.

Content

Topics for discussion may include:

- Desktop pre-press;
- Printing technology;
- Requirements of suppliers;
- Communication with suppliers;
- Design for specific production outcomes (including those other than printing);
- Communication that exploits the potential of specific media;
- Production processes;
- Sourcing suppliers;
- Workflow production;
- Exploring media.

Reading Materials


Newark, Q 2002 What is Graphic Design? Rotovision, UK.

Pipes, A 2006 Production for Graphic Designers, 4th edn, Overlook, UK.

West, S 1990 Working with style: Traditional and modern approaches to graphic design, Watson-Guptill, New York.


HDCOM321 Publication Design

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Competence in publication layout software • Teaching methods: Digital studio-based activities • Assessment: e.g. Project 1: A small-scale publication (30%); Project 2: A significant, professional quality publication (70%)

A unit of study in the Bachelor of Design (Communication Design).

Aims & Objectives

This unit explores the formal, organisational, and craft aspects of publication design. There is an emphasis on critical thinking, advanced visualisation and the application of communication intent to a complex document. Through the investigation and analysis of text and image organisation, structure and order, advanced typography, imaging and craft knowledge, students will produce professional quality graphic documents.

At the completion of this unit students should be able to:

- Articulate and apply a critical understanding of formative publishing conventions and applications in the context of effective communication;
- Produce a design proposal that clearly and analytically communicates research and design intent with regard to content, organisation, audience and production;
- Explore sophisticated typographic, visual form, and structural relationships to resolve visual communication;
- Explore narrative, sequential and spatial manipulation in design for the communication of visual and textual information;
- Develop a complex, creative and professional quality publication document.

Content

This unit aims to develop skills suitable for the publication of documents at an advanced level. Topics may include:

- Publication history, technology and terms;
- Publication conventions;
- Type and Image legibility and expression for publication;
- Editorial structure and sequential design for communication;
- Diagrammatic and information management for applied communication;
- Managing information and visual hierarchies;
- Experimental formats and craft skills including materials, printing, binding, folding print for facsimile production;
- Grids, proportions, structure and navigation systems;
- Design for publication as spatial manipulation.

References

Lupton, E 2004 Thinking With Type, Princeton Architectural Press, New York.


Roberts, L & Thrift, J 2002 The Designer and the Grid, Rotovision, UK.

Bossard, HR & Buhm, A 2000 The Typographic Grid, Niggli, Switzerland.

Faoowett-Tang, R (ed.) 2001 Experimental Formats, Rotovision, Switzerland.

HDCOM332 Information and Interface Design

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Lecture and studio-based learning with ongoing project development and assessment tasks • Assessment: 100% project work

A unit of study in the Bachelor of Design (Communication Design).

Aims & Objectives

In this unit, students will:

- Develop an enhanced understanding of the graduate attributes linked to this subject;
- Analyse, describe, invent and propose structured diagrammatic visual documents;
- Develop an understanding of the possibilities of information architecture, interfaces and narrative for publication;
- Demonstrate sequencing for textual, diagrammatic and pictorial content within communication design.
Content
This unit aims to explore innovative and appropriate ways of communicating complex information clearly. Topics include:
- Interpreting and presenting information
- Diagrams, charts, maps, tables
- Systems for way-finding and exploration
- Information design contexts
- Accessing and managing database information
- Instructional and pictorial sequencing
- User-centred design.

Reading Materials

HDCOM323 Advertising Design
12.5 Credit Points • 1 Semester • 36 Hours per Semester - Prerequisite: Nil • Teaching methods: Lecture and studio based learning workshops, formatted to accommodate practical project execution and development, critical analysis sessions, peer reviews and presentations • Assessment: One project broken into 3 stages of delivery: Stage 1 (20%), Stage 2 (40% group mark), Stage 3 (40%) A unit of study in the Bachelor of Design (Communication Design) and Bachelor of Film and Television.

Aims & Objectives
This unit aims to introduce students to the principles of advertising including analysis of audience demographic information, strategic brand message development, and holistic conceptual planning for multiple media formats. Emphasis is placed on appropriate research tools, project staging and communication, idea generation and critical exploration of the advertising field.

At the completion of this unit students should be able to:
- Explore cultural and historical perspectives in advertising;
- Articulate a critical awareness of advertising trends, styles and methods of communication;
- Gather and use demographic information to develop coherent written and visual concepts in relation to a specific project brief;
- Investigate, record and reflect on a variety of communication strategies appropriate to a single advertising design brief;
- Work in multidisciplinary teams to plan a strategic, integrated advertising plan, incorporating the use of multiple media formats and distribution possibilities;
- Develop a visually and conceptually resolved project outcome in one or more media based on investigations and strategy;
- Articulate critical reflections on research, strategy, planning, process and outcomes, and on the challenges of advertising communication strategies.

Berger, AA 2006 50 Ways to Understand Communication: a guided tour of key ideas and theories in communication, media, and culture, Rowman & Littlefield, Lanham, Md.

Graphic Advertising Journal, 2006, Graphis
Knight, C 2005 The Graphic Designer's Guide to Effective Visual Communication: creating hierarchies with type, image, and color, Rotofusion, Switzerland.

The Mascarelli Dictionary, Mascarelli Library Pty Ltd, NSW, Australia
The Mascarelli Thesaurus, Mascarelli Library Pty Ltd, NSW, Australia
Sweeney, S c2006, 3G Marketing on the Internet, 7th edn, Maximum Press, Gulf Breeze, Fl.

Aims & Objectives
This is a compulsory unit of study for all Faculty of Design students to complete in the 2nd or 3rd year of their course. The program has been tailored to provide the background information, documentation and skills needed for application to industry. Placement, Design Centre and graduate employment in the design industry. The unit consists of a 10 hour program run over two days. Students will be able to choose ONE of the four hour workshops held from Tuesday to Thursday. All students attending the program will be required to participate in the six hour program of employer presentations also held on the Friday of that week. The workshops and speakers have been especially tailored to the type of jobs that design students will be applying for. Enrolment and completion of the unit will show on your transcript, and add to your resume of skills.

Content
The content will include information sessions on Industry Placement and options for Honours, hands-on workshops and presentations by employers from the disciplines covering topics such as:
- Career planning
- Jobs in the industry
- Employer's expectations
- Writing application letters
- Writing cv's and managing folio's
- Making the most of interviews
- Career Decision-Making and Planning: models and theories
- Self Awareness: Identification of employment-related skills, interests and values
- Opportunity Awareness: Research and understand significant aspects of work such as the range of jobs available, further training options
- Job Hunting: Develop and implement skills in resumes and cover letter writing, interviews, networking and Assessment Centre participation.

Reading Materials

HDDFTV111 Scriptwriting and Directing: Narrative Film
12.5 Credit Points • 1 Semester • 36 Hours per Semester - Prerequisite: Nil • Teaching methods: Lecture style presentations, project-based learning tutorials using screenings, guest speakers, pitching and interview workshops • Assessment: e.g. Project 1: Story pitch, documentation, draft script (30%); Project 2: Director's statement, background folio (45%); Project 3: Reflection document (35%)

Swinburne University of Technology | Undergraduate Course Handbook 2008
A unit of study in the Bachelor of Film and Television.

**Aims & Objectives**

This unit aims to introduce students to methods and techniques that are used in the writing and directing of short films. The unit will explore narrative film and the roles of the writer and director in creating, understanding and conveying meaning. This introductory unit provides students with an understanding of the working methods of scriptwriting and directing that can be applied to their own film-making.

At the completion of this unit students should be able to:

- Research industry standards, formatting and apply to the development of short documents, drafts and director’s statements;
- Work collaboratively to develop ideas in narrative story;
- Use key script writing techniques on initial idea development, pitching, character development, structure, and short documents;
- Identify themes, subtext, meanings in writing and directing process through a process of self-reflection in written work and group collaboration;
- Articulate a “directorial” vision based on the understanding and interpretation of the written text demonstrating research skills and methodology;
- Develop and articulate an aesthetic approach to the script in a director’s statement.

**Content**

- Structure in narrative film;
- Industry standards;
- Character development;
- Thematic development;
- Writing ideas, short documents and drafts;
- The director’s statement.

Students are expected to engage in the following activities outside of class time:

- Research industry standards to be used for all text driven data;
- Keep a reflective journal that includes text and visual data.

**Recommended Reading**


**HDFTV112 Production Techniques**

12.5 Credit Points • 1 Semester • 48 Hours per Semester • Prahran • Prerequisites Nil • Teaching methods: Class lectures, demonstrations, practical workshops, and in-class practical exercises • Assessment: e.g. Brief 1: Technical Journal 40%; Brief 2: Shooting for Editing - MiniDV 20%; Brief 3: Location & Studio Lighting 20%; Brief 4: Shooting HDV 20%

A unit of study in the Bachelor of Film and Television

**Aims & Objectives**

This unit aims to introduce students to the basic principles of video camcorder technology, production, lighting, video terminology and audio recording, enabling students to put into practice video production theory and gain experience in the safe and competent operation of equipment. At the completion of this unit students should be able to:

- Use MiniDV and HDV based, prosumer video production technology;
- Use the principles of shooting to edit, demonstrating how location shooting impacts on the editing and program creation process;
- Employ video specifications, formats and prevailing industry technical standards;
- Demonstrate competency in basic lighting techniques, as well as safe operation of production lighting and grip equipment;
- Explore the principles of lighting, with the focus on creating 3-dimensional images that enhance the unit of study or convey a given mood;
- Control colour temperature and mix light sources;
- Document television industry specific production procedures and workflows in technical journal;
- Complete a series of camera and audio exercises, demonstrating competency of basic camcorder technology.

**Content**

Lectures and exercises covered will include:

- Function and operation of MiniDV and HDV camcorders;
- Operation of external microphones and basic location recording;
- Lighting equipment, lighting techniques as well as production grip equipment;
- Shooting for editing;
- Analogue and digital video broadcast standards;
- Formats and specifications;
- Aspect ratios (4x3 and 16x9);
- Progressive and interface acquisition modes, television industry production protocols;
- Processes and workflows;
- Film and Television industry technical information and terminology.

**Reading Materials**


Eisenstein, S 1947 The Film Sense, Harvest Books, San Diego.

Eisenstein, S 1949 The Film Form: Essays in Film Theory, Harvest Books, San Diego.

Fitt & Thornton, 2001 Lighting Technology, Focal Press.


**HDFTV113 Postproduction and Editing**

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisites Nil • Teaching methods: Lectures; Demonstrations; Consultations; Special presentations including guest lecturers from industry; Assessment: e.g. Assessment task 1: Editing exercises (20%); Assessment task 2: Edit set drama sequence (30%); Assessment task 3: Edit and submit a short film project (50%)

A unit of study in the Bachelor of Film and Television

**Aims & Objectives**

This unit of study aims to introduce students to postproduction, with an emphasis on different editing pathways from capturing original footage to the final output, editing techniques and the use of non-linear editing software.

At the completion of this unit students should be able to:

- Apply knowledge of the postproduction process from logging and capturing of original rushes, through to editing from a first-cut to fine-cut;
- Apply technical skills learnt in Final Cut Pro to edit a short film;
- Apply project management and file management skills in editing on Final Cut Pro;
- Evaluate what constitutes good editing by participating in self and peer critique;
- Review different styles of editing employed in cutting drama, documentary and commercial films.

**Content**

Topics may include:

- Methods and principles for Final Cut Pro;
- Editing techniques including audio and video settings, preferences, scratch disks;
- File naming conventions for projects, clips, bins and sequences;
- Postproduction project management;
- Postproduction industry issues.

**Reading Materials**

Murch, W 2001 In The Blink Of An Eye: A Perspective On Film Editing, Silman-James Press.


Dancyger, K 2002 The Technique of Film and Video Editing, Focal Press.
HDTV121 Documentary Production
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Delivery of the unit may include: Lectures; Screenings; Workshops; Practical demonstrations; Special presentations, including guest lecturers from industry; Consultations • Assessment: e.g. Assessment task 1: Documentary treatment (30%); Assessment task 2: Documentary Production (20%); Assessment task 3: Postproduction & delivery of Short Documentary Film (50%)
A unit of study in the Bachelor of Film and Television.

Aims & Objectives
This unit aims to give students an overview of documentary production from a historical and theoretical context as well as hands on experience in producing a short documentary film.

At the completion of this unit students should be able to:
- Explore and define the role of the documentary in creating meaningful narratives;
- Apply research skills and methodology in developing a concept for a short documentary film;
- Review industry standard script techniques and apply them in developing the initial idea, the structure, and stylistic approach for short documentary film;
- Develop creative relationships with 'real' subjects and in doing so better understand the challenges implicit to the subject/director relationship;
- Apply professional documentary production practices in producing a short documentary film;
- Apply post-production processes in editing a non-fiction film.

Content
Content of the unit is designed to support student projects, and the development of understanding of the processes and skills required in documentary film-making. Topics discussed may therefore include:
- History and theory of documentary;
- Key elements of writing a documentary script;
- Pitching script proposals;
- Production process for non-fiction film;
- Documentary research, interview and production techniques;
- Editing for documentary.

Reading Materials
Goldsmith, D 2003 The Documentary Markers: Interviews with the Boss in the Business, Routovision SA, Switzerland.
Murch, W 2001 In the Blink of an Eye: A Perspective on Film Editing, 2nd edn. Silvan-James, Los Angeles, CA.

HDTV122 Film Screening Series - Contemporary Cinema MIFF
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Lectures; Screenings; Guest speakers; In class and online forums • Assessment: e.g. Project 1 (30%); Project 2 (65%); Project 3 (5%)
A unit of study in the Bachelor of Film and Television.

Aims & Objectives
This unit aims to introduce students to contemporary international cinema that will inform and enrich their film making capabilities. This unit will provide opportunities for students to engage with contemporary cinema from different cultures and explore production methodologies that differ from mainstream models.

At the completion of this unit students should be able to:
- Identify cultural and social differences within the work presented as expressed in cinema language including narrative, character, visual and sound aesthetic;
- Acquire a methodology and critical framework for measuring and categorising film and television;
- Develop a critical response to contemporary film culture from around the world;
- Express critical opinions and analyze clearly and rationally using written and communication skills;
- Demonstrate independent and creative thought in response to the production values and consumption of contemporary regional and international cinema;
- Interpret their own work in relation to work from differing cultures and social settings;
- Form a basis from which to evolve a personal approach to film and television production and/or work in related media.

Content
This unit centres on discussion of:
- Contemporary international cinema;
- Cultural and social differences in cinema language including narrative, character, visual and sound aesthetics;
- Production methodologies.

Reading Materials
Mamet, D 1994 A writer's processes, Faber and Faber, London.
Weston, J 2003 The film director's intuition Script analysis and rehearsal techniques, Michael Weise Productions, Studio City, CA.

HDTV123 Production Management/ Sound Design
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Production Management: Lectures; software demonstrations and individual consultation. Sound Design: lab demonstrating the use of sound editing software • Assessment: e.g. Production Management (50%); Sound Design (50%)
A unit of study in the Bachelor of Film and Television.

Aims & Objectives
This unit introduces two major areas of documentary production:

a. Production Management Students will be introduced to the methods and techniques that are used in the development and production of film and television projects. It introduces the role of the producer, and explores pre-production process and production management.

b. Sound Design This unit aims to Introduce and explore the concept of Sound Design as an integral part of film and television production. Basic concepts and technical aspects of working with sound in post-production will be introduced.

Learning Objectives At the completion of this unit students should be able to:
- Production Management:
  - Produce, production manage and co-ordinate the short documentary productions;
  - Understand the collaborative process of film & television production from runner to director;
  - Articulate the process of financing, funding and distributing film & television productions from features to television commercials;
  - Develop an understanding of the "paperwork" and software related to budgeting, scheduling, and documenting film and television pre-production, production and postproduction.

Sound Design:
- Understand the Sound Design process and its application in film production and postproduction;
- Articulate a creative and practical basis for working with sound in relation to the moving image;
- Use sound editing software and apply it to design a soundtrack for their short
2641 projects

Content
Production Management
- Producers role;
- Budgets, schedules, crew lists, call sheets, production reports, talent releases and location agreements;
- Co-ordination of the production of short film and television production;
- Industry standard documentation, terminology and procedure.

Sound Design
- Uncovering the importance of sound in film and television;
- Introduction to sound post-production;
- Practical instruction in using sound production software: setting up a session, importing sound.

Reading Materials
Kerry, T. 2002 Sound for Picture, the Art of Sound Design for Film and Television, Mix Books.

HDTV211 Scriptwriting and Directing: Film and Television Production
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: NF • Teaching methods: Lectures, tutorial and workshop sessions and the supervision of production based activities in support of student projects • Assessment: e.g. Writing A (20%); Writing B (group project) (20%); Produce and Direct Individual Project (30%); Production of Group Project (30%) A unit of study in the Bachelor of Film and Television.

Aims & Objectives
This unit aims to introduce students good and great writing and directing. The unit will provide students with an opportunity to expand their reels through the addition of a TVC (30 second Television Commercial) or a music video.

Students will be introduced to the concept of specialisation developing independent and collaborative skills by working on individual and group projects to write, direct, shoot and edit a short narrative or documentary.

On completion of this unit students should be able to:
- Explore communicative story or message in the film and television language;
- Work in the constrained timelines of film & television production;
- Pitch and sell simple film ideas;
- Conceive and write a script and ancillary written material for a TVC or Music Video;
- Direct and shoot a 30 second TVC or a Music Video;
- Identify an area of individual specialisation;
- Work in a team situation to develop a short narrative or documentary film;
- Work collaboratively to produce a short narrative or documentary film on 16mm or broadcast quality tape.

Content
Topics for discussion may include:
- The practice of film and television through key elements of writing, directing, editing, acting, cinematography, music, sound design;
- Emotional response, development and complexity of ideas;
- Writing and directing, pitch and selling for the big and small screen, the challenges of concise story telling and "mise en scene" in TVC, short narrative and documentary films and animation;
- Script formats, storyboards, directors' treatments and ancillary production documents (cast, crew and call sheets, budgets, schedules etc).

Reading Materials

HDTV212 Cinematography and Lighting - Film Production
12.5 Credit Points • 1 Semester • 48 Hours per Semester • Prahran • Prerequisite: NF • Teaching methods: Class lectures, demonstrations, practical workshops, in-class practical exercises and out of class production based projects • Assessment: e.g Brief 1: Getting an Image, in-class exercise 10%; Brief 2: Sync Sound, in-class exercise 10%; Brief 3: Animatema Super16mm, in class exercise 10%; Brief 4: Major Project: Narrative 3-8 minutes 50%; Brief 5: Technical Journal 20%
A unit of study in the Bachelor of Film and Television.

Aims & Objectives
This unit aims to afford students a thorough understanding and command of the principles of film production technology, enabling students to put into practise film production theory and gain industry relevant experience in the operation of equipment, as well as industry based production protocols and processes.

At the completion of this unit students should be able to:
- Demonstrate competency with professional motion pictures cameras, film loading and handling, labelling conventions, camera crew and paper work, and the use of tungsten and daylight light film stocks;
- Demonstrate competency with camera control, including film exposure, focus and camera optics;
- Demonstrate competency in 16mm sync sound film production technology, hard disk recorders, location recording, slating and rushes syncing;
- Complete a 16mm narrative film to a professional standard, demonstrating competency of the medium;
- Work with Aaton timecode production and post-production processes;
- Utilise standard 16mm and Super 16 aspect ratio production, with a view to providing content for digital television and cinema blow up;
- Work in a professionally oriented group environment where teamwork is essential;
- Apply the principles of film cinematography, lighting and visual aesthetics in the context of narrative.

Content
Topics may include:
- 16mm and Super 16mm cameras;
- Advanced cinematography technology and techniques;
- Loading and unloading film stock;
- Exposureing film correctly;
- Correct use of camera optics and focus;
- Sync sound, slating, location recording;
- Syncing rushes;
- Aaton timecode and hard disk audio recorders;
- Film lighting;
- Feature and studio lighting;
- Cinematography techniques and special effects lighting;
- Camera paperwork and awareness of processing;
- Telecine and post-production paths.

Reading Materials

HDTV221 Cinematography and Lighting - Broadcast Tape
12.5 Credit Points • 1 Semester • 40 Hours per Semester • Prahran • Prerequisite: NF • Teaching methods: Class lectures, demonstrations, practical workshops, in-class practical exercises and out of class production based projects • Assessment: e.g Brief 1: DVC Pro Location - camera control tasks (20%); Brief 2: Photographic Principles tasks (20%); Brief 3: Major Project: Documentary 10-15 minutes (60%)
A unit of study in the Bachelor of Film and Television.

Aims & Objectives
This unit aims to afford students a thorough understanding and command of the principles of broadcast video technology, enabling students to put into practise broadcast video production theory and gain industry relevant experience in the operation of equipment, as well as industry based production protocols and processes.

At the completion of this unit students should be able to:
- Operate a range of professional camcorders;
- Work with professional camcorder accessories and related technology, such as audio microphones, broadcast monitors, LCD camera mounted displays and grip equipment;
- Work with advanced industry standard video tape formats;
- Use advanced broadcast video technology, both in the field and in the studio.
environment, with the focus on technical competence;
- Use documentary and studio based lighting designed to maximize broadcast video tape image performance;
- Apply photographic principles to produce highly imaginative and professional images;
- Work in a professionally oriented group environment where teamwork is essential;
- Apply principles of narrative, visualisation and cinematography to produce a broadcast video documentary to a professional standard.

Content
Topics may include:
- Broadcast tape camera operation;
- Camera optics;
- Focus;
- Video exposure;
- Broadcast and LCD monitors;
- Audio recording;
- Timecode generation;
- Camera matrix and advanced menu functions;
- Image control;
- Professional video tape formats, including DVCPRO50, Digital Betacam, HDCAM and VariCam;
- Advanced cinematography technology;
- Techniques and lighting;
- Photographic composition and design.

Reading Materials

HDFTV222 Film Screening Series - Production and Direction/ MIF
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisites: Nil • Prerequisite: Nil
Prerequisite methods: Presentation style lectures involving a series of screenings and lectures of Classic Film and Television, discussion and questions to select opinions of films and film reviews, weekly tasks requiring students to engage in critical review of films and film reviews • Assessment: e.g. Assessment 1: Film Critique (30%); Assessment 2: Scene Re-make (60%); Assessment 3: Class and Online Critiques (10%)
A unit of study in the Bachelor of Film and Television

Aims & Objectives
This unit aims to expose students to a range of classic film and television that informs and enriches their film making capabilities. This unit will provide opportunities for students to make comparisons of contemporary films with classic screenings using critical parameters such as historical, auteur theory and genre to develop evaluation, analytical and critical thinking and writing skills.

At the completion of this unit students should be able to:
- Use critical thinking and analytical skills through the exploration of a range of critical reviewing styles in newspaper, internet and in-depth critical analysis studies and books;
- Engage in discussions of contemporary films in relation to classics and write critical analyses of a variety of film and television screenings;
- Articulate comparative reviews of classic and contemporary films in newspaper review and in-depth critical analysis styles;
- Critique classic films using key critical parameters identifying historical perspectives, genre and auteur theory.

Content
The history of film and television will be explored through key elements of:
- Form eg writing, directing, editing, acting, cinematography, music, sound design;
- Content eg emotional response, historical and social context and perspective, development and complexity of ideas.

Reading Materials
Agee, J 2000, Agee on Film: Criticism and Comment on the Movies, Modern Library.
Stratton, D, The Australian newspaper and 'The Movie Show' (ABC)
Wood, R 2004, Howard Hawks - Contemporary Approaches To Film And Television, Wayne State University Press.

HDFTV223 Screen Editing Techniques & DVD Authoring
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisites: Nil • Teaching methods: Lectures, Demonstration of the editing software, Consultation and class critiques, Special presentations including guest lecturers from industry • Assessment: e.g. Assessment task 1: DVD Reel flowcharting (10%); Assessment task 2: DVD Film & TV Showreel (45%); Assessment task 3: Editing exercises (20%); Assessment task 4: Edit and submit short film projects (30%)
A unit of study in the Bachelor of Film and Television.

Aims & Objectives
This unit of study aims to introduce students to two important areas of the postproduction industry:
- DVD Authoring: this section aims to introduce students to the applied principles and workflows associated with DVD-Video authoring;
- Screen Editing: this section of the unit focuses on the creative editing process and editing for different screen genres, and will introduce a range of postproduction techniques through technical and project development.

At the completion of the DVD Authoring section of this unit students should be able to:
- Use basic production skills related to DVD authoring;
- Apply production skills related to digital video compression;
- Document typical workflow scenarios for DVD authoring;
- Work to industry standard specifications in authoring DVD-Video titles;
- Apply project and time management skills for DVD authoring, mastering and distribution.

At the completion of the Screen Editing section of this unit students should be able to:
- Recognise the different postproduction techniques employed when working on a variety of screen genre including drama, documentary and television commercials;
- Apply editing conventions such as framing, scene structure, rhythm and pacing;
- Work to industry standard specifications in editing short film and commercial projects using advanced Final Cut Pro editing skills;
- Apply project and time management skills in editing short film projects.

Content
Topics for discussion may include:
- DVD Authoring:
  - DVD Studio Pro interface and Video compression environments;
  - DVD specifications and formats;
  - DVD specifications and formats; DVD as a distribution format;
  - Authoring parameters for DVD-Video - working with video compression for DVD-Video and audio compression for DVD-Video;
  - DVD-Video interactivity with DVD Studio Pro.
- Screen Editing:
  - From Script to Screen: working with marked up scripts, continuity and sound sheets in editing scenes from a television drama series;
  - Editing techniques for a variety film genre;
  - Advanced editing in Final Cut Pro;
  - Postproduction project management;
  - Postproduction industry and editing roles.

Reading Materials
Dancyger, K 2002 The Technique of Film and Video Editing, Focal Press.
Koppelman, C Behind the Scenes: How Walter Murch Edited Cold Mountain Using Apple's Final Cut Pro and What This Means for Cinema.
Labarge, R 2001 DVD Authoring and Production, OM Books, California.
Oldham, G 1992 First Cut: Conversations with Film Editors, University of California Press.
Rosenblum, R & Karen, R 1979 When The Shooting Stops: The Cutting Begins - A Film Editor's Story, Viking, New York.
Aims & Objectives

This unit will provide students with further opportunity to expand their reel through the addition of a major project and a short-form individual project, either a dialogue scene, music clip, set piece or TVC. Students will be encouraged to further develop and nurture an area of specialisation within the group dynamic as if professionally employed in the film & television industry.

At the completion of this unit students should be able to:

- Apply industry standard formatting to the development of short documents, budgets, drafts and director’s statements;
- Work collaboratively to develop ideas and apply these in the development of a major film and video production focusing on teamwork, leadership and work ethics;
- Create and write a script and ancillary production material for a major project;
- Direct and shoot an individual project: a dialogue scene, music clip, set piece or TVC.

Content

Topics for discussion may include:

- Pitching and selling ideas;
- Screenplay development;
- Production, scripts and directing paperwork;
- The practice of film and television through key elements of writing, directing, acting, cinematography, music, editing, and sound design;
- The emotional response, development and complexity of ideas.

Reading Materials

Clurman, H 1997 On Directing, Fireside, New York
Capra, F 1997 The Name Above the Title, DaCapo Press
Senses of Cinema website, The Great Directors

Aims & Objectives

This unit aims to explore the filmic soundtrack and provide the basis for the individual process of soundtrack production, focusing on the conceptual role of the soundtrack within a filmic narrative. Students will be encouraged to take a critical stance to the use of sound, and explore the potential of sound and sound production in this context.

At the completion of this unit students should be able to:

- Articulate and use sound treatment as a conceptual and narrative tool whilst engaging with technical issues;
- Apply standard methodologies in regard to sound post-production and development of listening skills in regard to sound production;
- Apply pitch, script, documentation (50%); Individual Project (50%)

Content

Topics for discussion may include:

- Industry standard formatting;
- Shooting plan, tests rehearsal;
- Producing script/ebible, budgets, schedules, contracts;
- Coordinating finance and production logistics;
- Pre-production methodology.

Reading Materials


Aims & Objectives

This unit aims to explore the uses of sound in a film context and the technical skills required in sound production. Topics may include:

- Elements of the soundtrack;
- Analysing a case study;
- What makes for a good mix;
- Approaching the soundtrack;
- Technical skills for working with the soundtrack.

Reading Materials

Australian Film Commission website www.afc.gov.au

Aims & Objectives

As the culmination of the Bachelor of Film and Television degree, this unit aims to afford students an opportunity to synthesise and integrate skills, knowledge and competencies gained throughout the course, demonstrating a mastery of the
principles of direction, producing, writing, cinematography and production. Incorporating and interpreting high level professional production processes, students are afforded the opportunity to work as part of a group to produce a film or television program(s) to an industry standard, enabling students to further develop and sharpen skills in their chosen production disciplines. Students will specialise in either Writing/Directing/Producing or Cinematography/Production. All students will also complete classes in outcomes for film and video projects. This will include pitching to industry bodies and investors, marketing and distribution. Visual and textual documentation for the production and post-production phases of the projects will also be covered. Students will synthesise and integrate skills, knowledge and competencies to a professional standard in all areas of production - direction, writing, producing, cinematography, sound design and editing of final project.

At the completion of this unit students should be able to:

- In the Production Outcomes exhibit a professional level of preparation in the interpretation of the script, camera tests and acquisition, production and planning for post-production workflow;
- Identify industry models for funding and investment, and compile appropriate documentation and materials for funding and/or distribution and marketing;
- Collaborate, plan and manage production and personnel, anticipating variables. Direction & Production;
- Prepare for production in writing and directing, demonstrating expressive maturity and a thorough approach;
- Prepare a directors treatment, and any visual preparation (ie storyboards) that will assist the production process;
- Integrate a screenplay creatively through direction and mise en scene, through to execution. Or Cinematography;
- Identify and perform industry standard camera preparation tasks, identify problems and recognise production solutions, complete and interpret tests;
- Apply principles of film and video direction, cinematography, lighting, composition, design and visual aesthetics, and professionally apply these attributes in the production of major film and television projects;
- Complete a film or television program to a professional standard, demonstrating mastery of the medium.

Content

This unit focuses on the practical implementation of the fundamental aspects of film, video and digital imaging production processes. Having extensively researched their chosen subject matter, production pathways and production techniques in the previous semester, students will utilise their completed pre-visualisation materials to create an industry standard production outcome. Students will be expected to manage their production and post-production processes in accordance with industry practice. Students will experience the production process from beginning to end, including casting, crewing, scheduling, shooting, directing, sound recording, art direction, editing, sound design and digital integration. Students will be encouraged to assist one another in the production process and to pursue areas of specific technical and/or creative research within the context of the unit outcome requirements.

Reading Materials

Capra, F 1997 'The Name Above the Title', Da Capo Press.
Tirard, L 2002 Moviemakers' Master Class: Private Lessons from the World's Foremost Directors, Faber and Faber.
Truffaut, F 1979 Hitchcock by Truffaut, Paladin, New York.

HDFTV322 Advanced Postproduction and Digital Outcomes

12.5 Credit Points • 1 Semester • 36 hours per Semester • Prerequisite: Nil • Teaching methods: Lecture, exercises, demonstration of techniques, consultation and class critiques, special presentations, industry visits • Assessment: 1. Digital postproduction workflow exercises 36% 2. Postproduction for major project activities 64%

Aims & Objectives

In this unit of study aims to introduce students to the fundamental principles of character design and development for 3D animation. At the completion of this unit students should be able to:

- Develop further competencies in the application of common postproduction hardware and software;
- Be introduced to postproduction specialised hardware;
- Demonstrate a knowledge of advanced editing techniques and application to real world learning;
- Picture edit/sound postproduction and output to tape/DVD/HD of major projects for assessment, screening, publication and distribution purposes;
- Understand the editor's and technical director's role in working with a director and importance of consultation in the editing and postproduction process.
- Demonstrate the skills in postproduction workflows and digital video compression.

Content

This unit aims to improve students editing skills and understanding of postproduction outcomes as applied to their major film and television projects. Topics discussed include:

- Advancing editing skills and use of editing applications;
- Postproduction of major projects including editing pictures and sound design;
- Liaising with postproduction facilities and film labs in postproducing their major projects;
- Introduction to professional postproduction environments and an explanation of industry standard postproduction specifications and formats;
- Colour space, conforming in post, film scanning, telecine and Digital Intermediate (DI) concepts and applications.

Reading Materials

Dancyger, 2002 The Techniques of Film and Video Editing, Focal Press.
Ocham, G 1992 First Cut: Conversations with Film Editors, University of California Press.
Rosenblum, R & Karen, R 1979 When The Shooting Stops: The Cutting Begins - A Film Editor's Story, Viking, 1st edn, NY.
Wright, S 2002 Digital Compositing for Film and Video, Elsevier, Burlington.

HDFTV332 Cinematography and Lighting - Major Film and Television Productions

12.5 Credit Points • 1 Semester • 48 Hours per Semester • Prerequisite: Nil • Teaching methods: Class lectures, demonstrations, practical workshops, and in class practical exercises • Assessment: e.g. Planning & Documentation (30%); Lighting & Cinematography (30%); Compositing and Post-production (30%); Visual Effects Aesthetic (10%) • 1 unit of study in the Bachelor of Film and Television.

Aims & Objectives

Consisting of three core components, pre-production/pre-visualisation, acquisition and post-production, this unit aims to afford students a thorough understanding and command of the principles of shooting and post-producing visual effects, enabling students to gain practical expertise of in-camera visual effects cinematography, lighting, advanced green screen acquisition and advanced visual effects post-production and compositing work.

At the completion of this unit students should be able to:

- Undertake planning for a visual effects project, including documentation, storyboarding and 3D pre-visualisation;
- Use advanced video camera technology to capture images suitable for visual effects post-production and compositing work;
- Apply the principles of lighting and studio based advanced green screen cinematography suitable for compositing;
- Use the principles of visual effects software and post-production workflows and paths;
- Demonstrate professional visual effects planning and documentation;
- Discuss the purposes and limitations of post-production compositing techniques and apply to a visual effects project, in particular, camera acquisition, focus, exposure, camera movement, formats, and perspective;
- Shoot and post-produce a visual effects piece to an industry standard level;
- Demonstrate a professional visual effects aesthetic.

Swinburne University of Technology | Undergraduate Course Handbook 2008
Content
Topics may include:
- Visual effects and compositing principles;
- Visual effects optics, focus, exposure, camera movement and perspective;
- Visual effects acquisition and lighting;
- Advanced green screen techniques;
- Visual effects software;
- Visual effects workflows, paths and processes.

Reading Materials

HDFTV411 Major Film and Television Research Project
25 Credit Points • 1 Semester • 72 hours per Semester • Prahran • Teaching methods: Lecture style presentations, project-based learning tutorials using screenings, site visits, guest speakers, pitching and interview workshops, interactive pitching sessions, one on one project workshops • Assessment: e.g. Brief 1: Journal/blog/vlog (10%), Brief 2: short documents / script/visual research (50%)
A unit of study in the Bachelor of Film and Television (Honours).

Aims & Objectives
This unit aims to explore methods and techniques that are used in the development and production of film and television projects, with particular emphasis on understanding and conveying of meaning. The unit will explore the numerous roles in development and production of work. Students will have the opportunity to collaborate on a major project of their choice. At the completion of this unit students should be able to:
- Apply industry standard formatting to the development of short documents, budgets, drafts and director's statements;
- Use advanced techniques in writing and directing for the screen and television;
- Articulate major considerations in production including shooting in multi-camera studios;
- Pitch and "sell" concepts, treatments and scripts;
- Work collaboratively to develop ideas and apply in the development of a major film and video production focusing on teamwork, leadership and work ethics;
- Develop and articulate an aesthetic approach that takes in account a process driven development model as well as a thorough understanding of meaning and subtext of the work developed.

Content
- Film genre and directorial approaches;
- Pitching and visualization;
- Script editing;
- Co-ordination of the financing and production;
- Developing pre-production/ directorial proposals.

Recommended Reading
Aristotle/Horace/Langris, Classical Literary Criticism, Penguin, Melbourne.

HDFTV412 Producing and Preproduction of Major Film and Television Project
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Teaching methods: Lecture style presentations, project - based learning, tutorials using screenings, site visits, guest speakers, and individual project workshops • Assessment: e.g. Pre-production research documentation (50%); Individual contributions (15%)
A unit of study in the Bachelor of Film and Television (Honours).

Aims & Objectives
This unit aims to investigate the methods and techniques that are used in the producing and pre-production of film and television projects, with an emphasis on sophisticated understanding of these processes. The unit will explore the numerous roles in development and production of industry standard work. The students will have the opportunity to prepare for the production of their Major Film and Television projects.
At the completion of this unit students should be able to:
- Apply industry standard formatting to the development of pre-production documents including budgets, schedules, animatics, and storyboards;
- Communicate the development of ideas and apply those in the development of a major film and video production;
- Articulate an aesthetic approach that takes in the account the genre and sensibility of the project;
- Present / pitch pre-production of film and television projects.

Content
This unit is primarily driven by independent project work. Additional topics and support may include guest lecturers from industry, screenings and analysis of film and television productions, and discussion based on individual project requirements.

Reading Materials

HDFTV413 Advanced Film and Television Production Techniques
12.5 Credit Points • 1 Semester • 48 Hours per Semester • Prahran • Teaching methods: Class demonstrations, and in class practical exercises, practical workshops and multicam studio classes and projects • Assessment: e.g. Brief 1: Advanced Cinematography and Lighting tasks (50%), Brief 2: Multicam Studio workshops and Group Project (50%)
A unit of study in the Bachelor of Film and Television (Honours).

Aims & Objectives
This unit aims to provide experience in advanced film and broadcast video-tape technology, both in the field and in the studio environment. A high level of competency is to be developed in production and cinematic skills, and in the application of industry standard specifications.
At the completion of this unit students should be able to:
• Demonstrate the principles of advanced cinematography, with a focus on technical competence;
• Work consistently with advanced industry standard film and video-tape formats;
• Work competently with professional cinematographic accessories and related technology, such as audio microphones, broadcast monitors, LCD camera mounted displays and grip equipment;
• Apply professional location and studio based lighting, including working in a multi-camera studio;
• Work professionally in a group environment where teamwork is essential;
• Apply high level photographic composition, design, colour, lighting, lens choice, exposure, filters, stock selection, testing, working in low light levels to produce imaginative and professional images.

Content
This unit aims to develop production skills for a major film and television research project. Topics for discussion may therefore include:
• Advanced film and broadcast tape camera operation, camera optics, focus, telecine transfer and grading, audio recording, time-code generation, camera matrix and advanced menu functions, and image control;
• Location and studio based lighting suitable for film and video-tape acquisition;
• Multi-camera studio production, including live television recording and editing;
• Broadcast tape post-production, including broadcast digital ingestion.

Reading Materials

HDFTV421 Production of Major Film and Television Project
25 Credit Points • 1 Semester • 72 Hours per Semester • Prahran • Teaching methods: In class workshops & rehearsal and individual consultation on production and postproduction of major projects • Assessment: Class workshops and Major Research Project deliverables
A unit of study in the Bachelor of Film and Television (Honours)

Aims & Objectives
In this unit of study, students will:
• Develop and enhance an understanding of the graduate attributes linked to this unit of study
• Complete the development of a screenplay or “bible” for a full or complete feature film or television series
• Complete storyboards, director's treatment and shooting plan for a feature film or television series (narrative or documentary)
• Co-ordinate with the Producer and other production personnel on issues of scheduling, budgeting, crewing and casting prior to going into production
• Rehearse and directional tests if required
• Direct/ do the cinematography/ art direction on the production, either a feature film or television series trailer/ or selected scenes (narrative) or documentary project
• Picture edit/ do the sound postproduction and output to tape/ DVD for assessment and distribution purposes.

Content
This unit aims to develop production skills in a major film and television research project. Topics include:
• Individual/collaborative meeting, discussions during the pre-production/ production and postproduction
• of major research projects
• Shooting schedules, tests and rehearsal for major production
• Production of a feature film or television series trailer or documentary project (ie direction/ cinematography and lighting/ art direction and crew)
• Postproduction editing pictures and sound design of major research project.

Reading Materials

HDFTV422 Film and Television Digital Broadcasting
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Teaching methods: This is a lecture, demonstration and discussion based unit of study with guest speakers where appropriate, group discussion of readings and research, and constructive appraisal of work in progress. • Assessment: 100% project work
A unit of study in the Bachelor of Film and Television (Honours)

Aims & Objectives
In this unit of study, students will:
• Develop and enhance an understanding of the graduate attributes linked to this unit of study.
• Develop an understanding of the role of digital broadcasting in emerging sectors of the Film and Television industries.
• Explore digital broadcasting through viewing, reading, research, and application through production.
• Enable participants to achieve digital broadcasting outcomes in Film and Television through planned, informed, and competent production and post-production processes.
• Consider different methods of digital broadcasting delivering Film and Television product across different platforms.
• Undertake student centred learning and further develop skills in project management.

Content
This unit aims to introduce students to the world of digital broadcasting technologies. Topics include:
• Designing and producing digital broadcast projects.
• An introduction to a wide range of emerging digital broadcasting methods and techniques.
• Exploration of the variety of outcomes, problem-solve and make informed decisions for production.
• Research and discussion regarding the uptake and implementation of this new sector of the Film and Television industries. This sector includes broadcasting for mobile telephony, portable media players, Digital Video Broadcasting: DVB-T (terrestrial) and DVB-H (handheld), and video games consoles.

Reading Materials
URL: http://www.dvb-t-online.org/ URL: http://www.dvb.org/

HDFTV423 Advanced Film and Television Post-production Techniques
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Lectures; Demonstration of editing software, editing techniques and postproduction workflow; Consultation and class critiques on editing of student Major Project work. Special presentations including guest lecturers from industry; Post-production industry facility visit(s) • Assessment: Post-production Documentation 20%; Consultation & Screening of Major Projects 20%; Major Project Outcomes 60%
A unit of study in the Bachelor of Film and Television (Honours).

Aims & Objectives
In this unit of study, students will:
• Demonstrate a knowledge of advanced editing techniques and application to real world learning.
• Enhance knowledge of advanced editing software in editing picture, sound and
This unit provides students with a framework by which studio and project work will be conducted, and the potential for achievement of the learning objectives of this unit. The studio equips designers with the research, design and project management skills to tackle the ongoing state of social and demographic flux. Different societies are faced with an immensely broad range of rapidly changing social factors which range from the spaces and objects with which we interact on a daily basis to the systems and interfaces that continue to challenge us. This studio attempts to position projects at a juncture which identifies the successes (and failures) of what has gone before and articulates possible solutions which position design at the edge of social change.

Aims & Objectives

This unit aims to introduce students to the relationship between social patterns and design and the formers' impact on "design" project outcomes. In this unit, students will:

- Engage in an investigative and research-based studio project;
- Develop and extend individual projects which engage directly with the themes articulated for this design studio;
- Explore the relationship between a broader vision of research and design practice;
- Articulate the studio project outcomes and themes through a well-developed and well-structured design solution.

This unit is broadly based on the themes of:

- Changing Patterns,
- Changing Populations,
- International Markets,
- Demographic Shift,
- Designer Agency.

Students are encouraged to utilise these themes and the specialist knowledge of the academic staff in developing projects. Initial proposals will be considered from a very specific range of design issues. All project proposals will be considered on their merits, on the basis of appropriate depth and scope for an Honours level qualification and the potential for achievement of the learning objectives of this unit.

Recommended Reading

Students will be given a reading list and ongoing readings for discussion over the course of the semester. These readings will constantly change to reflect the topics discussed in the Design Research Studio.

Recommended Reading


HDG401 Design Research Studio - Social Patterns

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: Nil • Teaching methods: Conducted in a student-centred studio environment, through lectures, group discussions, site visits, demonstrations and critiques • Assessment: 100% project work

A unit of study in the Bachelor of Design (Communication Design)(Honours)

Aims & Objectives

The studio equips designers with the research, design and project management skills to tackle the ongoing state of social and demographic flux. Different societies are faced with an immensely broad range of rapidly changing social factors which range from the spaces and objects with which we interact on a daily basis to the systems and interfaces that continue to challenge us. This studio attempts to position projects at a juncture which identifies the successes (and failures) of what has gone before and articulates possible solutions which position design at the edge of social change.

Content

This unit aims to introduce students to the relationship between social patterns and design and the formers' impact on "design" project outcomes. In this unit, students will:

- Engage in an investigative and research-based studio project;
- Develop and extend individual projects which engage directly with the themes articulated for this design studio;
- Explore the relationship between a broader vision of research and design practice;
- Articulate the studio project outcomes and themes through a well-developed and well-structured design solution.

This unit is broadly based on the themes of:

- Changing Patterns,
- Changing Populations,
- International Markets,
- Demographic Shift,
- Designer Agency.

Students are encouraged to utilise these themes and the specialist knowledge of the academic staff in developing projects. Initial proposals will be considered from a very specific range of design issues. All project proposals will be considered on their merits, on the basis of appropriate depth and scope for an Honours level qualification and the potential for achievement of the learning objectives of this unit.

Recommended Reading


HDG402 Design Research Analysis - Social Patterns

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: Nil • Teaching methods: Conducted in a student-centred studio environment, through lectures, group discussions, site visits, demonstrations and critiques • Assessment: 100% project work

Aims & Objectives

The studio equips designers with the research, design and project management skills to tackle the ongoing state of social and demographic flux. Different societies are faced with an immensely broad range of rapidly changing social factors which range from the spaces and objects with which we interact on a daily basis to the systems and interfaces that continue to challenge us. This studio attempts to position projects at a juncture which identifies the successes (and failures) of what has gone before and articulates possible solutions which position design at the edge of social change.

Content

This unit provides students with the opportunity to apply appropriate research to a design outcome through analysing collected data and presenting it in a form appropriate to the articulation of design research. In this unit, students will:
• Engage in an investigative and design-focused research project;
• Develop and extend individual projects which engage directly with the themes articulated for this research analysis;
• Explore the relationship between a broader vision of research and design practice;
• Articulate the studio project outcomes and themes through a well-developed and well-structured research outcome.

This unit is broadly based on the themes of:
• Changing Patterns,
• Changing Populations,
• International Markets,
• Demographic Shift,
• Designer Agency.

Students are encouraged to utilise these themes and the specialist knowledge of the academic staff in developing projects. Initial proposals will be considered from a very specific range of design issues. All project proposals will be considered on their merits, on the basis of appropriate depth and scope for an Honours level qualification and the potential for achievement of the learning objectives of this unit.

Recommended Reading
Students will be given a reading list and ongoing readings for discussion over the course of the semester. These readings will constantly change to reflect the topics discussed in the Design Research Studio.

HDG403 Design Research Methods - New Technologies
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: A core lecture series plus projects conducted in a student-centred studio, on a work-in-progress basis. Group discussion, site visits, research, consultation, evaluation, critique sessions and presentations are conducted as appropriate • Assessment: 100% project work

Aims & Objectives
This unit of study will introduce students to a range of design research and investigation strategies. Students will produce a self-initiated project brief as well as undertake a relevant literature and artefact review. Research will be centred within the broader theme of new technologies and provide students with a range of strategies by which to develop design research methods. The project outcomes of this unit will relate to both Design Studio and Design Research Analysis.

This unit provides students with a framework by which studio and project work will continue to develop. The unit focuses on the development of core research skills that have direct relevance to current design practice and design theory. Via research and investigation, students will learn to select specific design project outcomes from a range of studio themes.

Content
At the completion of this unit students should be able to:
• Conduct design research through literature and artefact review and apply these to a design proposal;
• Use a range of analytical and research skills to facilitate the articulation of a design project;
• Apply existing design research to a complex project brief;
• Explore the relationship between a broader vision of research and design and social practice;
• Articulate the investigative process and outcomes through concise, coherent and well-structured documentation, reports and presentations.

Recommended Reading

HDG404 Design Research Studio - New Technologies
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Conducted in a student-centred studio environment, through lectures, group discussions, site visits, demonstrations and critiques • Assessment: 100% project work

Aims & Objectives
The studio equips designers with the research, design and project management skills to navigate through an ever-increasing volume of new technologies by which to articulate design outcomes. These technologies range from the mundane and everyday (eg, CCTV, ATM technology), to the revolutionary and innovative (eg, interaction systems, public interfaces). This studio attempts to position projects at a juncture to exploit new technologies and tools for design across a range of projects which deal with the core concepts of user-centred design.

Content
This unit aims to introduce students to the relationship between new technologies and design and the potential for its impact on "design" project outcomes. In this unit, students will:
• Engage in an investigative and research-based studio project;
• Develop and extend individual projects which engage directly with the themes articulated for this design studio;
• Explore the relationship between a broader vision of research and design practice;
• Articulate the studio project outcomes and themes through a well-developed and well-structured design solution.

This unit is broadly based on the themes of:
• Digital Design for Future end-users,
• New materials and technology,
• Games and Play,
• New Narratives,
• Virtual and Digital Communications,
• Interaction and entertainment design.

Students are encouraged to utilise these themes and the specialist knowledge of the academic staff in developing projects. Initial proposals will be considered from a very specific range of design issues. All project proposals will be considered on their merits, on the basis of appropriate depth and scope for an Honours level qualification and the potential for achievement of the learning objectives of this unit.

Recommended Reading
Students will be given a reading list and ongoing readings for discussion over the course of the semester. These readings will constantly change to reflect the topics discussed in the Design Research Studio.

HDG405 Design Research Analysis - New Technologies
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: conducted in a student-centred studio environment, through lectures, group discussions, site visits, demonstrations and critiques • Assessment: 100% project work

Aims & Objectives
The studio equips designers with the research, design and project management skills to navigate through an ever-increasing volume of new technologies by which to articulate design outcomes. These technologies range from the mundane and everyday (eg, CCTV, ATM technology), to the revolutionary and innovative (eg, interaction systems, public interfaces). This unit presents students with an avenue for the option of either a thesis-based or project-based outcome to their design research investigation. The outcomes of this unit will reflect the project outcomes embedded in the studio work undertaken in that semester.

Content
This unit provides students with the opportunity to apply appropriate research to a design outcome through analysing collected data and presenting it a form appropriate to the articulation of design research. In this unit, students will:
• Engage in an investigative and design-focused research project;
• Develop and extend individual projects which engage directly with the themes articulated for this research analysis;
• Explore the relationship between a broader vision of research and design practice;
• Articulate the studio project outcomes and themes through a well-developed and well-structured research outcome.

This unit is broadly based on the themes of:
• Digital Design for Future end-users,
• New materials and technology,
• Games and Play,
• New Narratives,
• Virtual and Digital Communications,
• Interaction and entertainment design.
Students are encouraged to utilise these themes and the specialist knowledge of the academic staff in developing projects. Initial proposals will be considered from a very specific range of design issues. All project proposals will be considered on their merits, on the basis of appropriate depth and scope for an Honours level qualification and the potential for achievement of the learning objectives of this unit.

**Recommended Reading**

Students will be given a reading list and ongoing readings for discussion over the course of the semester. These readings will constantly change to reflect the topics discussed in the Design Research Studio.

**HDG406 Professional Context**

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Conducted in a student-centred studio environment, through lectures, group discussions, site visits, demonstrations and critiques • Assessment: 100% project work

**Aims & Objectives**

This studio allows students to engage with a wide variety of highly industry relevant projects and outcomes. These may relate directly to a theory of practice and cover an outlet for wider industry exposure through vigorous involvement in industry and design practice.

**Content**

This unit aims to allow students to actively select and participate in industry through engagement in competition, portfolio and presentation. In this unit, students will:

- Develop industry connection through a studio brief;
- Respond to industry relevant project outcomes through articulation of their studio work;
- Explore the relationship between a broader vision of a theory of practice and design outcomes;
- Articulate the studio project outcomes and themes through a well-developed and well-structured design solution.

Students will be provided with a range of national and international design competition briefs and opportunities to develop further on existing presentation and portfolio skills. Competition briefs may be developed from organisations such as:

- The Design Institute of Australia,
- AGIDEAS,
- IFI (International Federation Interieur) and IDEA (Interior Design Educators of Australia),
- The Dyson Design Award,
- Lab 3001 Design Competition,
- The Premier’s Design Award.

**Recommended Reading**

Students will be given a reading list and ongoing readings for discussion over the course of the semester.

**HDG512 Product Interaction and Smart Environments**

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Projects are conducted in a student-centred studio, on a work-in-progress basis. Group discussion, site visits, research, consultation, evaluation, critique sessions and presentations are conducted as appropriate. Projects involve both group and individual work. • Assessment: 100% project work

**Aims & Objectives**

This unit of study brings issues of usability to the forefront of the design process for products and environments. The focus is on scenario-based design, allowing designers to understand how real people might use products and environments and how products can differ significantly in their usability.

**Content**

The studio provides practical design experience and enhanced understanding of interaction design through structured projects, especially where usability and the user experiences are key determinants of design activity. Projects focus on design innovation through the development of ‘smart’ domestic environments and products that respond to the needs and circumstances of users by exploring the aesthetic, functional and technological potential of materials, both new and familiar, and new manufacturing processes. A variety of trends are explored in respect of intelligent systems that adapt to the behaviour and habits of the users, including built-in sensors, mechatronics, artificial intelligence and networking (Bluetooth, WiFi, Broadband). A range of usability criteria and evaluation methods are applied to test the integrity and appropriateness of the design outcomes.

**Recommended Reading**


**HDG415 Professional Practice 7**

37.5 Credit Points • 26 Weeks • 3 Days per Week • Prahran • Prerequisite: Nil • Teaching methods: Participants are assigned to working groups for individual projects • Assessment: 100% project work

**Aims & Objectives**

- To develop students’ professional design abilities through applied projects.
- To extend students’ professional design management skills to prepare them for industry practice.
- To serve as an internal, school-based, version of Industry Placement.

**Content**

The following aspects will be covered as appropriate: client liaison, brief taking, contract reporting, supervision and coordination of suppliers, preparation of written quotations and creative proposals, project and production management, group leadership, concept presentation to clients and marketing.

Projects will be undertaken in the National Institute of Design’s Design Centre. The Design Centre is a working design studio that develops innovative design projects, especially where innovation is supported by applied design research. Projects may include both commissioned projects and self-determined projects.

**Reading Materials**


**HDG418 Information Design**

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Lecture and discussion based with guest speakers, group discussion of readings and research, and constructive critique of work in progress • Assessment: 100% project work

**Aims & Objectives**

- To challenge participants to explore the distinctive principles and design processes of information design for print, for the web or for related standalone applications in multimedia design.
- To allow participants to investigate elements and methods that constitute a viable information design project, including concept and design development, design context, audience/user profile, technical requirements, project planning and project management.
- To enable participants to achieve advanced solutions in visual communication, through planned, systematic research collection, analysis and interpretation of information.
- To develop advanced understanding of design process and concept development for print and/or the web.

**Content**

Projects that will address diverse experiences in this most functional field of Communication and Multimedia Design, where design is the interface between the message and the user/reader. Participants respond creatively to a design
brief to produce a print and/or web based project using information visualisation and interface design principles. These may include ‘wayfinding’ and signage systems or web design. Participants consider the structural and spatial organisation of information and issues of creativity, aesthetics and usability. The history of information design and the design innovations that have arisen out of digital technology are discussed.

**Recommended Reading**


**HDG420 Professional Practice 8**

37.5 Credit Points  •  20 Weeks  •  3 Days per Week  •  Prerequisite: Nil  •  Teaching methods: Participants are assigned to working groups for individual projects  •  Assessment: 100% project work

**Aims & Objectives**

- To develop students' professional design abilities through applied projects.
- To extend students' professional design management skills to prepare them for industry practice.
- To serve as an internal, school-based, version of Industry Placement.

**Content**

The following aspects will be covered as appropriate: client liaison, brief taking, contract reporting, supervision and coordination of suppliers, preparation of written quotations and creative proposals, project and production management, group leadership, concept presentation to clients and marketing.

Projects will be undertaken in the National Institute of Design's Design Centre. The Design Centre is a working design studio that develops innovative design projects, especially where innovation is supported by applied research design. Projects may include both commissioned projects and self-determined projects.

**Reading Materials**


**HDIND121 Industrial Design Studio - Ergonomic Interaction**

12.5 Credit Points  •  1 Semester  •  36 Hours per Semester  •  Prerequisite: Competence in Illustrator, Photoshop, Microsoft Office suite. Workshop Induction is essential  •  Teaching methods: Studio tutorials; Project based discussions; Progressive project reviews; Industry site visits; Guest speakers  •  Assessment: e.g. Project 1: research documentation (10%); Project 2: concept development (40%); Project 3: design proposal development (50%)

A unit of study in the Bachelor of Design (Industrial Design).

**Aims & Objectives**

Students will further develop their understanding of the product design and development process through the practical experience of undertaking product design projects responding to the theme of "ergonomic interaction". This studio aims to introduce ergonomics and anthropometrics though the exploration of the human-machine interface, cultural, psychological and social implications of product design.

The completion of this unit students should be able to:

- Use foundational research and scholarly skills;
- Consider and integrate ergonomic and anthropometric information into design projects;
- Use perspective drawing and rendering to effectively communicate design intent;
- Communicate a design proposal in a succinct manner using hard sketches, basic computer generated or formatted images and 3D form studies;
- Describe basic manufacturing processes and the importance of material selection for product outcomes;
- Apply and articulate a practical design methodology and process to design projects.

**Content**

Students will participate in design projects with the content being generated by a specific briefs that may include national/international associations, user groups, industry sponsored projects, and/or internally proposed design briefs within the Ergonomic interaction context. Research and Project focus may include the following:

- Product research, concept development, and design methodology in context of the human/machine interface;
- Utilizing Anthropometric data;
- History of Ergonomic principles and Changing data;
- Product Surface textures and their relevance to product ergonomics;
- Product dimensions and their relevance to product ergonomics;
- Analysis of existing products, functions, performance, and construction;
- Product use time and ergonomic factors.

**Reading Materials**


**References**


**HDIND221 Industrial Design Studio - Sustainable Environment**

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: 36 Hours per Semester • Prahran • Prerequisite: Competence in MS Word, MS PowerPoint and Solidworks CAD • Teaching methods: Project based and delivered through lectures, studios and tutorials • Assessment: e.g. Project 1: Group project - topic investigation and presentation (25%); Project 2: Individual design project (75%)

A unit of study in the Bachelor of Design (Industrial Design).

**Aims & Objectives**

This unit aims to introduce students to the concepts of sustainability and the principles of ecologically sustainable design by introducing a range of Design for Environment philosophies and strategies. This unit explores the influence that product design has in relation to environmental issues such as climate change and environmental degradation. There is a significant emphasis on ecological philosophies and design strategies.

At the completion of this unit students should be able to:
- Investigate and articulate the implications of product design processes for Design for Environment (DFE);
- Describe the relationship of material selection, manufacturing processes and specification to ecologically sound product outcomes;
- Use appropriate communication tools (Models, renderings, drawings or virtual models) to articulate a project intent, content and proposal and communicate a clear design process;
- Define a product design that reflects careful consideration of multiple factors related to DFE;
- Record, refine and evaluate concept and design development in relation to DFE principles;
- Use product detailing practices for manufacture through the preparation of AS1100 Engineering Drawings.

**Content**

Topics for discussion may include:
- Environmental Degradation caused by consumption;
- Climate change and resource issues;
- Interaction of economic, social, cultural and environmental considerations and issues in Western Society;
- Eco Philosophies and Tools;
- Eco-design guidelines and strategies;
- Industrial best practice relating to environmental design;
- Future industrial and manufacturing strategies.

**References**


Journal of Sustainable Product Design, Inside Magazine and Curve all have articles on environmental design issues

**HDIND222 Processes Technology**

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Project-based studio learning and may include lectures, tutorials and site visits where appropriate • Assessment: Assessment Task 1: Minor Research Project (15%); Assessment Task 2: Group project (20%); Assessment Task 3: Design project (60%); Assessment Task 4: Exam (15%)

A unit of study in the Bachelor of Design (Industrial Design).

**Aims & Objectives**

This unit aims to give students an introduction to various materials and manufacturing process technologies in relation to the product design process. With a focus on design for manufacture, students will engage in practical application of investigation, evaluation and specification for manufacture within design projects.

At the completion of this unit students should be able to:
- Undertake and document investigations in methods of manufacture;
- Critically assess materials and methods of manufacture, employ creative strategies to devise alternate proposals;
- Apply and document design process methodologies to develop practical design outcomes;
- In the context of sheet material manufacture for product design, develop a design project that articulates alignment of design intent, manufacturing, materials and specifications;
- Articulate design intentions, processes and technical decision-making through verbal and visual methods;
- Identify, source, and use information to resolve design requirements for manufacture.

**Content**

The process technologies that in this subject may include:
- An introduction to material properties;
- Woods and Laminates;
- Glass and Ceramics;
- Sheet metal fabrication;
- Combining and Subtracting Methods;
- Introduction to Model Making and Prototyping Technologies;
- 3D Scanning and Reverse Engineering.

**References**


**HDIND311 Manufacturing Technology**

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Experience in a 2D or 3D CAD package such as AutoCAD or Solidworks • Teaching methods: Project-based studio learning encouraging ongoing project development and self-directed research • Assessment: e.g. Group Research Project (10%); Mid Semester Concept Presentation (15%); Final Project Presentation (60%); Exam (15%)

A unit of study in the Bachelor of Design (Industrial Design).

**Aims & Objectives**

This unit aims to explore plastics, composites and metal casting technologies whilst developing skills in design communication and specification. With a focus on design for manufacture, students will engage in practical application of investigation, evaluation and specification for manufacture within a staged design project and group activities.

At the completion of this unit students should be able to:
- Undertake and document investigations in methods of manufacture for metal casting and plastics molding;
- Explore and critically evaluate materials, trends, and manufacturing of existing products;
- Employ creative strategies and methods to devise design concepts;
- Apply and document design process methodologies to develop practical design outcomes;
- Develop a design project that demonstrates sophisticated alignment of design intent, manufacturing, materials and technical specifications;
- Clearly and succinctly articulate design intentions, processes and technical decision-making through verbal and visual methods;
- Identify, source, and use information to resolve design requirements for metal casting and plastics molding.

**Content**

The process technologies that in this subject may include:
Types of Plastics and Additives;
• Composites;
• Injection Molding;
• Gas-Assisted Injection Molding;
• Blow Molding;
• Extrusion;
• RIM - Reaction Injection Molding;
• Rotational Molding;
• Thermforming;
• Plastic Finishing and Joining;
• Types of Metals and Mechanical Properties;
• Sand Casting;
• Investment casting;
• Die Casting;
• Metal Finishing and Joining.

Reading Materials

HDIND312 Sporting Directions
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: Some competence in Solidworks, 3D StudioMax, Illustrator, Photoshop, Microsoft Office suite. Workshop induction is essential • Teaching methods: Project-based studio learning including Studio tutorials; Project-based discussions; Progressive project reviews; Industry site visits; Guest speakers • Assessment: e.g. Stage 1: Research and project definition 40%; Stage 2: Design project 60%
A unit of study in the Bachelor of Design (Industrial Design) and Bachelor of Design (Interior Design).

Aims & Objectives
This unit aims to give students the opportunity to investigate and focus on the infrastructures and design outcomes relating to the sporting domain, recreation and associated activities. The unit emphasises developing research, problem identification, and appropriate communication of design concepts for production/ construction. Projects may address specific sporting sectors or recreational activities and environments.

At the completion of this unit students should be able to:
• Investigate the sports and recreation area and formulate a design brief that responds to historical, technological, commercial and cultural perspectives derived from research;
• Synthesise technical, social, cultural and environmental information into a design project;
• Generate design proposals that respond to branding and market positioning of the selected sports/recreational category;
• Consider and apply ergonomic and anthropometric information into design projects;
• Communicate design ideas in both 2 and 3 dimensions;
• Articulate a design outcome relating to sports and recreation that addresses function, ergonomics, performance and aesthetics.

Content
Students will develop one major design project, with the content being generated by a brief that may include national/international sporting bodies and associations, industry sponsored projects, or internally proposed design briefs within the sporting/recreational context. Topics for discussion may include:
• Current and future trends in sports/recreational area;
• Use of technology in sports/recreation design;
• Ergonomics/anthropometrics in relation to sports design;
• Sports injury and its impact upon design;
• Standards and legislation within sports industry;
• Appropriate project documentation to communicate design proposals.

References
Byars, M 1999 50 Sporting Wares-Innovations in Design and Materials; Rotovision.
At the completion of this unit students should be able to:

- Investigate and document markets, trends, manufacturing processes;
- Use investigations to establish design requirements, constraints and implications;
- Undertake self-directed project development, engaging with industry;
- Create a project brief that aligns design goals, scheduling, and product requirements;
- Generate technical specifications for quotation and manufacture of a physical prototype;
- Use professional project management processes in order to realise an independent project;
- Critically evaluate and articulate design outcomes with reference to the project brief.

Content
The topics outlined in the subject may include:

- Brief writing, goal setting and the Product Design Specification;
- Material and Manufacturing Selection Criteria;
- Task Management and Evaluation Methods;
- Design for Manufacture and Assembly;
- Keeping up with technology - appropriate design specification for different industries;
- Liaison methods for prototyping and production;
- Model Making and Prototype Technologies - what is available, how to find effective solutions.

References

HDINT111 Interior Design Studio - Context, Space, Place and Dwelling
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran •
Prerequisite: Nil • Teaching methods: Project-based studio learning with ongoing project development and assessment tasks • Assessment: e.g. Review 1: 4 small projects 40%; Review 2: Major project 60%
A unit of study in the Bachelor of Design (Interior Design)

Aims & Objectives
This unit aims to engage students in the design process through research, conceptual development, design development and communication. Students will begin to make an analysis of how design impacts on the interior and the built environment as built form, and explore concepts of design in interior-specific contexts, particularly relating to experiencing spaces for living. There is an emphasis on the development of knowledge and skills in design as a reflective practice.

At the completion of this unit students should be able to:

- Explore a range of conceptual design methodologies and ways of thinking;
- Explore concepts of form and communication;
- Critically analyse space and human environments and evaluate the effectiveness of a design from multiple perspectives;
- Engage in, and articulate, the conceptual design process in the context of constructing space as places of experience;
- Use sketching to produce a series of possible solutions quickly and efficiently;
- Manipulate scale and resolve aspects of drawings as a tool for communication;
- Work independently and in teams to articulate work in progress and completed projects visually and verbally.

Content
The following topics may be considered / discussed:

- Abstract compositions of form, texture and scale;
- Additive and subtractive forms;
- Spatial dynamics;
- Orientation and context;
- Materiality;
- Aesthetics and senses in design;
- Typologies and design methodologies;
- Place and place making, spatial planning and dynamics;
- Scale, meaning, proportion;
- Context and detailing;
- Verbal and visual communication.

References
Abalkis, I 1956 The good life: a guided visit to the houses of modernity, Fachbild, G 1958 The Poetics of Space, Boston Beacon Press.

Swinburne University of Technology | Undergraduate Course Handbook 2008
HDINT121 Interior Design Construction Technology
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Project-based studio learning with ongoing project development and assessment tasks • Assessment: e.g. Review 1: A series of small documentation exercises 40%; Review 2: Full documentation project and portfolio 60%

A unit of study in the Bachelor of Design (Interior Design).

Aims & Objectives
This unit aims to introduce students to local and national building codes and standards, and the skills and knowledge for simple documentation related to the construction of simple buildings. It will introduce various ways of designing and constructing doors, openings, windows, walls and stairs, and focus on the methods for researching materials, and documenting to Australian standards and codes. The unit also introduces students to sound, sound indices, heat gain and loss factors and the role of sketch drawing in the development of detail drawing.

At the completion of this unit students should be able to:
- Demonstrate appropriate building methods for small-scale construction and detailing projects via drawings;
- Use appropriate documentation conventions;
- Resolve a design intention through detailing;
- Produce a set of domestic contract documents;
- Recognise and articulate the relationship between construction technology and design intention.

Content
The following topics may be considered / discussed:
- Primary construction methods;
- Fundamentals of load bearing construction (frames, columns, walls etc);
- Building terminologies, for design documentation;
- Sketch drawing to the development of detail drawing;
- Detailing of openings; Cladding and linings; Stairs;
- Research materials for documentation to Australian standards and codes for the construction of simple buildings;
- Design documentation to Australian codes and standards;
- Designing for sound, light, heat gain and loss.

References
References can be found in the Brief for this Unit. These will be characterised as:
- Listed Precendent Projects; Online Resources; Standard Terminology; Technical Standards.

HDINT122 Contemporary Interior Design Theory
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Projects will be conducted in a studio environment on a work-in-progress basis • Assessment: e.g. Assignment 10%; Tutorial Questions 30%; Seminar (Group Presentation) 20%; Major Project 40%

A unit of study in the Bachelor of Design (Interior Design).

Aims & Objectives
In this unit, students will learn ways by which to make connections between the concept of design investigation and how it applies to the theory and practice of Interior Design. Students will undertake a variety of research-based tasks which graphically and textually show an enriched understanding of investigative techniques and methods.

At the completion of this unit students should be able to:
- Consider environmental, spatial and cultural issues, and use them to inform concepts of interior space;
- Articulate contemporary interior Design practice within an historical and theoretical context;
- Critically evaluate and argue key aspects of design theory, in an industry-relevant context;
- Explore the social implications of the design of human space, and embed within interior design projects;
- Apply contemporary interior Design theories, such as notions of interiority and the human form, to research and design projects;
- Demonstrate the relationship between theory, research and design project outcomes;
- Verbally, textually and visually articulate research, theoretical underpinnings, concepts, process and outcomes of design projects.

Content
Students will be required to produce a book of readings. This reader will be made available from Week 1 of the semester. While there are no formal readings for this unit, the following readings may be recommended to guide each week's topic.


HDINT211 Interior Design Studio - Changing Patterns and Social Space
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Project-based studio learning with ongoing project development and assessment tasks. Lectures and tutorials will support set projects, and there is an emphasis on interactive, group-based discussion and project reviews. • Assessment: e.g. Review 1: A series of small written, analytic and sketch diagram projects 40%; Review 2: Major project 60%

A unit of study in the Bachelor of Design (Interior Design).

Aims & Objectives
This unit aims to examine spatial, social and ethical dimensions of designing for future need, particularly changing patterns and social space. Explorations of experiential place making and contextual framing of space, will focus on the application of theory to practice through the development of a design project.

At the completion of this unit students should be able to:
- Gather visual resources, apply knowledge and critique design concepts as reflective practice;
- Recognise design as having ethical, social and environmental consequences;
A unit of study in the Bachelor of Design

HDINT212 Digital Representation

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran •
Prerequisite: Nil • Teaching methods: This unit will be a combination of formal lectures, weekly individual consultations, and research and seminar presentations • Assessment: e.g. Assignments 60%, Folio Submission 40%
A unit of study in the Bachelor of Design (Interior Design)

Aims & Objectives
Design communication skills are primary employment requirements for all design graduates. This unit takes a theoretical approach to skill-based content so that students may begin developing their own specific, individual approaches to digital and visual representation. The focus of this unit will be on deployment of the appropriate communication skills required to produce a design portfolio that describes a body of design work. This portfolio should be of a standard appropriate for presentation to prospective employers.

At the completion of this unit students should be able to:

• Practice and analyse drawing and diagramming methods, and undertake critical precedent studies;
• Use detailing to resolve spatial design in interior design projects;
• Employ digital communication and representation methods relevant to the built environment;
• Use individual methods of production appropriate to a specific design intention or aesthetic;
• Undertake critical appraisal and review of peer and own design development;
• Develop a critically considered folio of work that responds to feedback from class members and teaching staff.

Content
Students will produce a set of AutoCAD drawings and accompanying 3D model and renderings to an interior design project. Topics for discussion will include:

• Representation theories and practice;
• Use of ICT for design development processes;
• Spatial exploration and representation;
• Representation theories and practice;
• Rendering, lighting and materiality;
• Scale, proportion, composition, reproduction;
• Advanced 3D modelling;
• Exploration of computer technologies for design development;
• Application of geometry, perspective theory and method to CAO processes;
• Hand vs Digital drawings;
• Digital layout

HDINT221 Interior Design Studio - Virtual Space
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran •
Prerequisite: Basic competence in AUTOCAD, 3d Studio Max, Adobe Photoshop •
Teaching methods: Projects will be coordinated within a studio-based learning environment with ongoing project development and assessment tasks • Assessment: e.g. Project 1: Graphic presentation; visual research 10%; Assignment 2: Conceptualisation and representation skills 20%; Major Project: Project development; presentation 70%
A unit of study in the Bachelor of Design (Interior Design)

Aims & Objectives
This unit aims to explore the different and often contrasting definitions of the term ‘virtual’ and how it can be used as an aid in the development of spatial outcomes and in the exploration of spatial thinking and representation. The studio will enable students to explore the extents of virtual and real space through a combination of research-based tasks, and hands-on practical experience with several digital technology and representation tools.

At the completion of this unit students should be able to:

• Graphically present design concepts;
• Undertake visual research;
• Utilise conceptualisation and representation skills;
• Use problem-solving skills specific to the practice of interior design;
• Apply a set of digital skills to a designed project;
• Develop and present a digital project.

Content
Students will develop an interior design-specific project from design development to presentation stage. Areas for discussion may include:

• Digital technologies and spatial representation;
• Paradigm of digital technology and information and communication technologies;
• Malleable space and architectural representation;
• The nexus between the digital and the practice of interior design;
• Sense of scale and presence within the digital realm;
• Translation from virtual to real / vice-versa.

Recommended Reading
While there are no formal readings for this unit, the following, suggested readings may be recommended to guide each week’s topic.

HDINT222 Construction Technology - Documentation and Detailing
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran •
Prerequisite: Nil • Teaching methods: Project-based studio learning with ongoing project development and assessment tasks • Assessment: e.g. Tasks 1-3 30%; Tasks 4-6 30%; Project 40%
A unit of study in the Bachelor of Design (Interior Design)

Aims & Objectives
This unit aims to introduce students to small-scale construction and project detailing via industry relevant documentation methods.

Learning Objectives
At the completion of this unit students should be able to:

• Identify appropriate building methods for small-scale construction and detailing projects;
• Detail building components used in small-scale construction;
• Clearly express interior design-specific terminology in a project-based context;
• Develop and produce contract documentation;
• Apply local and national building codes and standards to documentation drawings;
• Resolve a design intention through project detailing;
• Demonstrate an understanding of the relationship between detailing and documentation, through construction related projects;
• Develop and produce a set of domestic contract documents.

Content
Students will develop a full set of formal design documents for a residential construction project. Areas for discussion will include:

• Fundamental construction techniques;
• Structural supporting strategies;
• Structural terminologies (frames, columns, walls etc);
• Cladding and linings;
• Detailing of openings;
• Design documentation;
• Joinery construction and detailing;
• Set and formal documentation processes.
Aims & Objectives
This unit aims to introduce students to the concept of sustainability and to the principles of ecologically sustainable design. Sustainability and ecologically sustainable design (ESD) will be examined through both a lecture series and a series of studio-based activities organized around the development of the student's own design project.

The completion of this unit should enable students to:

- Interpret and document sustainability scholarship relevant to the design problem context, i.e. sustainability and ecologically sustainable design (ESD) scholarship;
- Analyse project specific opportunities based on ESD / sustainability scholarship and apply as relevant to an individual project;
- Examine, re-examine and elaborate the ESD implications of the questions identified (above) within the student's own design project;
- Communicate the their own research / project work both visually and verbally, through presentations and peer discussions;
- Develop a design project that responds to the sustainability issues explored, and coherently demonstrates an understanding of the implications of that design in this context.

Content
The following topics will be considered / discussed throughout the semester:

- Principles of sustainability;
- Environmental degradation & environmentalism;
- Sustainability & design practice;
- Consumption and the environmental impacts of consumption;
- Living within ecological limits;
- Social effects of the environmental crisis & design practice;
- Ecological sustainable design (ESD) - models & methodologies;
- Sustainable design strategies - applying ESD techniques to a design project;
- Communicating design project outcomes.

Reading Materials

References

HDI1322 Construction Technology - Documentation and Specification
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: Nil • Teaching methods: Project-based studio learning with ongoing project development and assessment tasks • Assessment: e.g. Tasks 1-3 30%;
Aims & Objectives
This unit aims to teach students how to customise building technology in response to specific project requirements.

Learning Objectives
At the completion of this unit students should be able to:
- Adapt innovative technology solutions to project-specific requirements;
- Identify building methods for small-scale commercial or retail projects;
- Apply interior design specific terminology in a commercial or retail context;
- Apply contract documentation conventions within a project context;
- Apply local and national building codes and standards within the contract documentation process;
- Resolve a design intention through detailing within a commercial or retail project context;
- Identify the relationship between documentation and specification;
- Develop and produce a complete set of commercial contract documents.

Content
Students will develop a full set of formal design documents for an interior design construction project. Areas for discussion will include:
- Detailing theory;
- Articulation, expression;
- Interior detailing;
- Preparation of materials and finishes schedules;
- Preparation of technical drawings;
- Schedules;
- Specifications.

HDMMD101 Design for Multimedia 1
12.5 Credit Points • 1 Semester • 3 Hours per Week • Prahran, Sarawak • Prerequisite: Nil • Teaching methods: Studio (Computer Laboratory) Tuition with Continual Practical Experience through Exercises and Set Tasks • Assessment: Assignments, Folio, Presentations.
A unit of study in the Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Networks and Computing), Bachelor of Multimedia (Multimedia Software Development), Bachelor of Multimedia and the Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies).

Aims & Objectives
To develop an understanding of basic design principles and visualisation techniques.

Content
- Understanding and rehearsing the elementary use of the elements of design: line, shape, form, colour, tone, and texture, as well as primary extensions into pattern, repetition and combination in an electronic environment.
- Typography for electronic media.
- Elementary integration of design elements into extended 4D environment.
- Basic storyboarding, script concept and development.
- Layout and visual hierarchy for electronic media.
- Use of appropriate design software, i.e. Adobe Illustrator.

Reading Materials

HDMMD102 Design for Multimedia 2
12.5 Credit Points • 1 Semester • 3 Hours per Week • Prahran, Sarawak • Prerequisite: Nil • Teaching methods: Studio (Computer Laboratory) Tuition with Continual Practical Experience through Exercises and Set Tasks • Assessment: Assignments, Folio, Presentations.
A unit of study in the Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Networks and Computing), Bachelor of Multimedia (Multimedia Software Development), Bachelor of Multimedia and the Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies).

Aims & Objectives
To develop an understanding of basic design principles and visualisation techniques.

Content
- Understanding and rehearsing the elementary use of the elements of design: line, shape, form, colour, tone, and texture, as well as primary extensions into pattern, repetition and combination in an electronic environment.
- Typographic design concepts.
- Elementary integration of design elements into extended 4D environment.
- Basic storyboarding, script concept and development.
- Use of appropriate design software, i.e. Adobe Illustrator.

Reading Materials

HDMMD111 2D Animation
12.5 Credit Points • 1 Semester • 3 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Studio (Computer Laboratory) Tuition with Continual Practical Experience through Exercises and Set Tasks • Assessment: Assignments, Folio, Presentations.
A unit of study in the Bachelor of Design (Multimedia Design).

Aims & Objectives
This unit aims to introduce students to the fundamental principles and basic techniques of 2D animation. Students will be given the opportunity to explore various animation techniques using digital tools and encouraged to develop independent study, research and development skills.

At the completion of this unit students should be able to:
- Use observation, visualisation and drawing skills in the context of digital media;
- Explore the history of animation and its influence on contemporary design and communication;
- Explore a range of animation techniques, principles and options;
- Apply concept development, design principles, sound and editing skills to...
animations;
- Explore meaning and mood through animated abstract graphic elements and sound;
- Use frame by frame and rotoscope techniques effectively.

Content
Areas for discussion may include:
- Observation skills;
- Drawing and visualisation skills;
- Animation techniques eg frame by frame and rotoscoping;
- Metamorphosis and abstraction;
- Spatial dynamics and scene-to-scene transitions;
- Sound as a vehicle to convey meaning, mood and motion;
- Design aesthetics.

Reading Materials

Aims & Objectives
This unit aims to introduce students to the basic principles of drawing and imaging for narrative and storyboards. Students are encouraged to experiment and to explore within the drawing medium and to develop skills and techniques for creating pre-visualisation material for film and animation productions. At the completion of this unit students should be able to:
- Utilise skills of visual perception, drawing, concept development and composition;
- Convey information in the form of symbolic and graphic representation;
- Apply skills and techniques for creating pre-visualisation material for narrative, film and animation productions.

Content
Studio classes will include information and demonstrations relating to:
- Drawing techniques, such as pencil, charcoal, ink, colour pencil, water colour;
- Visual styles;
- Storyboarding styles;
- Methods for transforming narrative and written concepts into a visual medium.

Reading Materials

HDMMD121 Interactive Design for Web Technology
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Nil • Teaching methods: Lectures, online video tutorials and individual consultation • Assessment: e.g. Practical tasks (40%); Major project (60%)
A unit of study in the Bachelor of Design (Multimedia Design)

Aims & Objectives
This unit aims to introduce students to a range of web technologies. It will explore the limitations and benefits of these technologies, and the processes of decision-making in web application development. The unit will focus on the practical application of technology, utilising principles of interaction and usability to inform design concepts in the development of an interactive web product. At the completion of this unit students should be able to:
- Investigate and articulate the strengths and weaknesses of a range of web technologies;
- Participate in the analysis and critique of interactive design and identify usability issues through online and in class discussions;
- Use fundamental principles of interaction design, web usability and design composition in the development of a design concept;
- Develop a thoughtful design concept and use iterative processes to refine the coherence of aesthetic, animation and audio components in response to a specific project brief;
- Proficiently apply a range of technologies in the development of a working interactive web product.

Content
Topics for discussion may include:
- Practical application of web technology
- Interaction principles
- Usability principles
- Development processes

Reading Materials
http://www.undergrad.swinburne.edu.au/design/tutorials/

HDMMD122 2D Character Animation
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran • Prerequisite: Knowledge of Adobe Illustrator, Photoshop and Macromedia Flash • Teaching methods: Studio based learning focusing on project work and assessment tasks. Delivery may include: Classroom lectures; Presentations; Demonstrations; Screenings of animations; Individual consultations. • Assessment: e.g. Project 1 (50%), Project 2 (50%)
A unit of study in the Bachelor of Design (Multimedia Design)(Honours)

Aims & Objectives
This unit aims to introduce students to the basic principles of character design and story telling, and emphasises the value of extensive research in formulating and developing a believable character. The unit will also explore lip-synching, walk cycles and other animation techniques that may be used to enhance character personality. At the completion of this unit students should be able to:
- Explore the basic principles of designing an original character;
- Use digital tools to develop the basic principles of synchronised dialogue for talking characters;
- Apply the planning process required to develop and execute a concept as a short animation;
- Develop writing techniques for a short animated sequence;
- Explore pacing, editing and sound within the context of a story;
- Articulate the importance of research to aid generation of ideas.

Content
Students will develop a number of animated projects from design development to presentation. Areas for discussion may include:
- Observation, drawing and visualisation skills;
- Character development;
- Animation techniques;
- Synchronising dialogue;
- Storytelling and narrative;
- Production skills - script story boards, production time lines;
- Animation as a form of expression and communication;
- Dramatic pacing and editing in time-based media.

Reading Materials
The following topics may be discussed in this unit of study:

This unit of study aims to introduce students to the fundamental principles of character design and development for 3D animation.

At the completion of this unit students should be able to:

- Work independently to gather technical and design resources specific to character design for 3D animation and use these resources to generate design concepts;
- Research key character designers, developers and animators to inform project development;
- Demonstrate fluency in the language and terminology that applies to 3D character modelling and animation;
- Use planning and management strategies specific to the production of animated 3D projects;
- Apply visualisation and pre visualisation techniques for 3D character design and animation including character illustration and storyboarding methods;
- Apply fundamental principles of character animation, narrative structure, art direction, cinematography and lighting to character animation;
- Articulate the application and technical methodologies of character animation within linear and interactive outputs.

### Content

The following topics may be discussed in this unit of study:

- 3D animation language, terms and definitions;
- Fundamental animation concepts including: lip synching, walk cycles, expression, emotion;
- 3D animation concepts including: key framing, links and chains, bone deformation, inverse kinematics;
- Textures and materials for animated objects;
- Lighting for 3D animation;
- Cinematography for 3D animation;
- Voice and sound application principles to character animation;
- Rendering and output methods;
- Interfacing with third party software for post-production.

### Reading Materials


**HDMMD211 Interactive Design for Games and Web Applications**

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran

Prerequisite: Nil • Teaching methods: Lectures, online video tutorials and individual consultation • Assessment: e.g. Project 1: Technical tasks and design briefs (50%); Project 2: Design and develop a web application (50%)

A unit of study in the Bachelor of Design (Multimedia Design).

### Aims & Objectives

This unit aims to explore designing for the web and developing interactive applications. Focusing on the application of technology, it will explore theories and practical examples in different application contexts, decision making with regard to narrative and technical plans, culminating in working in a range of interactive, screen based applications as project outcomes.

At the completion of this unit students should be able to:

- Participate in online and in-class critical and analytical discussions related to contemporary interaction design, technologies and theory;
- Develop design proposals that identify appropriate technologies and their limitations, and the application of interactivity principles and narrative theory;
- Take part in peer-based support networks;
- Use appropriate exploration and design process techniques to conceptualise, develop and refine visual aspects of interactive and web-based products;
- Apply specific technologies to develop a completed working web-based application.

### Content

Topics for discussion may include:

- Practical applications of web technology;
- Interaction theory and practical development processes;
- Exploration and design process techniques;
- Development testing processes.

### Reading Materials


*Moock, C 2002* *Actionscript for Flash MX: The Definitive Guide*, O'Reilly Media.

*Krug, S 2005* *Don't Make me Think! New Riders Press.*

*Makur, J & Winarczyk, B 2004* *Flash MX 2004 Game Design Demystified*, Macromedia Press

*Lerof R & Titore, K 2002* *Programming PHP*, O'Reilly Media.

*Max, C 2007* *Writing for Animation, Comics, and Games*, Focal Press.

*Man, NFG 2006* *Character Design for Mobile Devices*, Focal Press.

**HDMMD212 Digital Video Camera Techniques**

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prahran

Prerequisite: Nil • Teaching methods: Class lectures, demonstrations, practical workshops, in-class exercises, presentations and practical projects • Assessment: e.g. Technical Journal (15%); Online discussion (15%); Shooting for Editing (15%); Location & Studio Lighting (15%); Television Commercial (40%)

A unit of study in the Bachelor of Design (Multimedia Design).

### Aims & Objectives

This unit aims to introduce students to the basic principles of video camera technology, production, lighting, video terminology, audio-recording, narrative and editing techniques.

At the completion of this unit students should be able to:

- Demonstrate competency of basic camcorder technology, using MiniDV, prosumer video production technology;
- Correctly use video specifications, formats and prevailing industry technical standards, including safety standards;
- Undertake television industry specific production procedures and workflows and maintain a technical journal;
- Use the principles of shooting to edit, particularly how location shooting impacts on the editing and program creation process;
- Use principles of lighting, with the emphasis on creating 3-dimensional images that enhance or convey a given mood;
- Develop a narrative for a television commercial which utilises a critical awareness of concept development, script writing and narrative styles for commercial advertising;
- Complete an applied project in the given timeframe, demonstrating project management, planning and collaborative skills.

### Content

Working in a group environment, and based on class lectures and studio workshops, students will complete a series of exercises designed to raise technical competency in MiniDV prosumer video production technology. Students will complete an applied television commercial, utilising the digital camera and editing skills they have practiced within the class exercises.

Lectures and exercises will cover a wide range of relevant areas, such as:

- Function and operation of MiniDV camcorders;
- Operation of external microphones and basic location recording;
- Lighting equipment, lighting techniques and production grip equipment;
- Shooting for editing;
- Analogue and digital video broadcast standards, formats and specifications;
- Television industry production protocols, processes and workflows;
- Introduction to scripting and narrative for applied projects;
- Introduction to editing techniques;
- Sound for commercials;
- Copyright regulations for commercial application.

### Reading Materials

This unit introduces the fundamental characteristics of type and communication for the electronic screen and its contrast with type for print media. The unit will focus on the 3D modelling of objects and interior/exterior environments.

Aims & Objectives
This unit of study aims to introduce students to the fundamentals of creating static Three Dimensional Computer Generated Images (3D CGI) and animated outputs via camera movement. The unit will focus on the 3D modelling of objects and interior/exterior environments.

Content
The following topics will be discussed in this unit of study:

- Work independently to gather technical and design resources specific to 3D computer modelling and use those resources to generate design concepts;
- Investigate a variety of key designers of interior spaces, object forms, cinematography and developers of 3D computer modelling to inform project development;
- Utilise basic planning and management strategies specific to the production of 3D CGI projects;
- Use fundamental visualisation techniques for 3D conceptual design;
- Use spatial thinking through the representation of objects and environments in a computer generated 3D space;
- Demonstrate competencies in camera angles, camera movement, lighting, materials for 3D objects and environments;
- Develop fluency in the language and terminology that applies to 3D modelling of objects and environments;

Reading Materials

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Swinburne University of Technology | Undergraduate Course Handbook 2008

Eisenstein, S 1947 The Film Sense, Harvest Books, San Diego.
Eisenstein, S 1949 The Film Form: Essays in Film Theory, Harvest Books, San Diego.
Fitt & Thorneley, 2001 Lighting Technology, Focal Press.

HDMMD213 3D Modelling for Objects and Environments
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisites: Nil • Teaching methods: Studio based learning environment, supported by weekly lectures and tutorials • Assessment: e.g. Project 1 (50%), Project 2 (50%) • A unit of study in the Bachelor of Design (Multimedia Design)

Aims & Objectives
This unit of study aims to introduce students to the fundamentals of creating static Three Dimensional Computer Generated Images (3D CGI) and animated outputs via camera movement. The unit will focus on the 3D modelling of objects and interior/exterior environments.

At the completion of this unit students should be able to:

- Work independently to gather technical and design resources specific to 3D computer modelling and use those resources to generate design concepts;
- Investigate a variety of key designers of interior spaces, object forms, cinematography and developers of 3D computer modelling to inform project development;
- Utilise basic planning and management strategies specific to the production of 3D CGI projects;
- Use fundamental visualisation techniques for 3D conceptual design;
- Use spatial thinking through the representation of objects and environments in a computer generated 3D space;
- Demonstrate competencies in camera angles, camera movement, lighting, materials for 3D objects and environments;
- Develop fluency in the language and terminology that applies to 3D modelling of objects and environments.

Reading Materials

HDMMD221 Typography for Screen and Motion
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisites: Nil • Teaching methods: Studio based learning environment, project work and presentations • Assessment: e.g. Project 1: design concept and production (50%); Project 2: design concept and production (50%) • A unit of study in the Bachelor of Design (Multimedia Design) and Bachelor of Film and Television.

Aims & Objectives
This unit introduces the fundamental characteristics of type and communication for the electronic screen and its contrast with type for print media. The unit will explore typographic terminology, structure and the historical context of letterforms and Roman alphabets, and their application in visual and information hierarchies within the electronic screen environment.

At the completion of this unit students should be able to:

- Demonstrate a knowledge of typographers and type design in screen and print contexts;
- Use typographic design and motion to explore meaning and mood in the screen environment;
- Investigate and apply consistent navigation and information hierarchies in the electronic screen environment for real world contexts;
- Apply knowledge of relevant industry standards and information management in a screen environment;
- Work independently to demonstrate through workbooks a range of conceptual typographical, motion and navigation solutions;
- Articulate project work visually and verbally.

Content
This unit will explore a range of historical, theoretical and practical topics relevant to screen-based typography and design. These may include:

- History of typography, particularly the roman alphabet;
- Typographic principles including: kerning, tracking, leading, hyphenation, grid structure, line length etc;
- Readability and legibility of typographic displays;
- Historical development of screen navigation principles;
- Contemporary standards for screen-based text displays;
- Application and meaning of typography in a screen context;
- Methods of concept development of motion, colour and typographic design for the screen.

Reading Materials
Baines, P 2005, Type and Typography, London, Lawrence King.

HDMMD222 Post Production for Film and Video
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisites: Nil • Teaching methods: Project based, and may include Lectures; Screenings; Demonstrations; Critiques; In-class and online discussions • Assessment: e.g. Project 1: Television Commercial (50%); Project 2: Showreel (50%) • A unit of study in the Bachelor of Design (Multimedia Design).

Aims & Objectives
This unit of study aims to introduce students to commercial film industry practices in the area of TVC development and personal showreels. There will be a focus on developing creative outcomes based on an understanding of the audience and development of an appropriate conceptual strategy. Students will extend their digital video production and postproduction techniques, and work both collaboratively and individually to achieve completed productions.

At the completion of this unit students should be able to:

- Investigate and analyse marketing strategies in relation to television commercial (TVC) development;
- Investigate and articulate communication intent with regard to a range of audience groups;
- Develop scripts and storyboard to communicate concepts for the production of a TVC and personal showreel;
- Produce and post-produce an industry standard TVC and personal showreel;
- Independently apply project management processes in the production of commercial projects;
- Consistently work to industry standard specifications.

Content
Topics may include:

- Project management processes including: developing concept treatments, scripts, storyboards, production schedules and shot lists;
- Production and postproduction techniques in working on commercial projects;
- Television commercial and marketing strategies;
- Postproduction industry specifications;
- Shooting to edit.

Reading Materials
Katz, SD 1991 Shot by Shot, Michael Wiese Productions.
This unit of study aims to introduce students to advanced principles of 3D character animation, environment design and narrative structures for linear and interactive outcomes. At the completion of this unit students should be able to:

- Articulate appropriate output methodologies for print and video including advanced compression and environment design for animation; and the team as a whole;
- Undertake theme-based research, and analysis of that research, to develop relevant and viable product and exhibition proposals;
- Identify and use appropriate design responses, methods and processes in the development of a final design outcome;
- Use the principles of design responsibility and identity copyright/ethical issues related to professional design practice;
- Articulate project outcomes and individual contribution within a framework of professional practice.

### Content

This unit explores a wide range of topics related to the design and development of both product and exhibitions. Topics discussed may include:

- Project management;
- Team management;
- Research and strategy;
- Concept generation;
- Visual development;
- Translating concepts across various media formats;
- Technical development;
- Exhibition design and production;
- Exhibition experiences;
- Design for marketing materials;
- Assemblage for exhibition.

### Reading Materials

- Murch, W 2001 In The Blink Of An Eye: A Perspective On Film Editing, Silman-James Press.
- Dancyger, K 2002 The Technique of Film and Video Editing, Focal Press.

HDMMD300 3D Character and Environment Design for Animation

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: Competency in Advanced 3D modelling methods including polygons, solids, nurbs, etc.; Cinematography for 3D animation including animated camera techniques and lighting; Fundamental 3D animation concepts including lip synchron, walk cycles, expression, emotion, key framing, links and chains, bone deformation and inverse kinematics; Voice and sound application principles for character animation; Rendering and output methods including interfacing with third party software for digital video and post-production • Teaching methods: Studio based learning environment, including weekly lectures and tutorials • Assessment: e.g. Technical exercises (50%), Major Project (50%)

### Aims & Objectives

#### This unit of study aims to introduce students to advanced principles of 3D character animation, environment design and narrative structures for linear and interactive outcomes.

At the completion of this unit students should be able to:

- Work independently to gather technical and design resources specific to 3D character and environment design for animation, and use those resources to generate concept designs;
- Research key designers, developers, cinematographers, directors and animators and use analysis of that research to inform project development;
- Develop fluency in the language and terminology that applies to 3D character and environment design for animation;
- Consistently use advanced planning and management strategies specific to the production of animated 3D projects;
- Practice thorough and sophisticated visualisation and pre-visualisation techniques that are appropriate to 3D character design and animation, including character illustration and storyboarding methods;
- Apply complex texting and rendering for low and high polygon applications;
- Articulate appropriate output methodologies for print and video including advanced compression / decompression principles;
- Demonstrate professional competencies in the development of conceptual character animation, narrative structure, art direction, cinematography and lighting for linear and interactive outputs.

#### Content

This unit explores advanced 3D animation techniques. Topics for discussion may include:

- Advanced 3D animation language, terms and definitions;
- Advanced 3D animation concepts for linear and interactive outputs;
- Advanced 3D compositing techniques;
- Advanced texturing and materials for animation and composting;
- Lighting for 3D animation and composting;
- Advanced cinematography and narrative structures for 3D animation;
- Audio design and application principles for linear and interactive outcomes;
- Advanced Rendering and output methods linear and interactive outcomes.

#### Reading Materials

- Danash, D 2005 Introducing Maya 7: 3D for Beginners, John Wiley & Sons.
- HDMMD311 Group Research Project

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: Advanced Knowledge of Multimedia Design software, such as Illustrator, Photoshop, After Effects, Flash, Maya, or Final Cut Pro • Teaching methods: Project-based learning and teaching methods that may include class lectures, demonstrations, consultations and work-in-progress reviews • Assessment: e.g. Exhibition Design & Development (40%); Concept Design Studio (30%); Individual Contribution (30%)

### Aims & Objectives

A unit of study in the Bachelor of Design (Multimedia Design).

#### Aims & Objectives

This unit aims to enhance collaborative and project management skills and raise awareness of the scope of Multimedia design, through the development and production of an exhibition. Working in a group environment, students will collaborate on a number of levels within the group and towards overall exhibition outcome. This unit is designed to raise awareness of group dynamics, project management, multimedia design in real-world context and exhibition design. Students will be required to work across a range of media formats in order to produce an exhibition. Working within groups, students will complete an applied project to be viewed publicly in an exhibition.

At the completion of this unit students should be able to:

- Work within a theme based brief and contribute in a consistent manner to a product and exhibition;
- Work in a collaborative group environment, delegate responsibilities and resolve issues by identifying and capitalising on the strengths of individuals and the team as a whole;
- Undertake theme-based research, and analysis of that research, to develop relevant and viable product and exhibition proposals;
- Refine exhibition concepts to a professional quality taking into consideration user experience, technical issues and content requirements;
- Identify and use appropriate design responses, methods and processes in the development of a final design outcome;
- Use the principles of design responsibility and identity copyright/ethical issues related to professional design practice;
- Articulate project outcomes and individual contribution within a framework of professional practice.

### Reading Materials


HDMMD312 Multimedia Design New Technologies

12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: Advanced Knowledge of Multimedia Design software, such as Illustrator, Photoshop, After Effects, Flash, Maya, or Final Cut Pro • Teaching methods: Project-based learning and teaching methods that may include class lectures, demonstrations, tutorials, consultations and work-in-progress reviews • Assessment: e.g. Tasks: 50%; Major Project: 50% A unit of study in the Bachelor of Design (Multimedia Design).

#### Aims & Objectives

This unit aims to provide advanced skills in specialised software related to multimedia design practice. Through practical tasks and critical exploration of the relationship between design concept and software capabilities, students will extend their understanding of the constraints of particular software and ways in which software drives design. Students will develop an in-depth designed outcome based on this understanding.

At the completion of this unit students should be able to:

- Articulate the potential and constraints of specific software related to multimedia design;
- Use a number of specialised software to an advanced level;
- Identify mainstream and alternate technologies, and articulate the impact of...
new technologies on a design practice;
• Develop a multimedia design project that integrates conceptual development, technology and stylistic decision making, and resolution to a professional level;
• Present a coherent final designed outcome with demonstrable development of processes, technical experimentation and justification of decision-making.

Content
This unit explores a range of study areas related to technology within multimedia design. Students can choose a specific study area they are interested in. Topics discussed may include:
• Code languages;
• Editing and post production techniques;
• Research and strategy;
• Concept generation;
• Visual development;
• Technical development;
• Usability;
• User Evaluation;
• Convergent media and future applications.

Reading Materials

HDMMD321 Individual Research Project
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite • Prerequisite: Advanced knowledge of Multimedia Design software, such as Illustrator, Photoshop, After Effects, Flash, Maya, Final Cut Pro, etc • Teaching methods: This unit employs a project-based learning and teaching method that may include class lectures, demonstrations, consultations and work-in-progress reviews • Assessment: Research Documentation and Project Proposal (30%); Final Project and project documentation (50%); Formal Presentation and evaluation (20%)
A unit of study in the Bachelor of Design (Multimedia Design).

Aims & Objectives
This unit aims to encourage independent learning and research through a self-initiated project incorporating identity system design. The unit emphasizes individual development and the use of peer collaboration to articulate and discuss ideas, technology, production issues and implications. Students are encouraged to explore their own specialist areas of interest within multimedia design, whilst working across a range of media formats in order to produce an individual project that encompasses research, documentation and the resolution of a sophisticated practical outcome.
At the completion of this unit students should be able to:
• Conduct and document a thorough investigation into the professional multimedia industry that underpins specialist areas of concern and identifies intended strategy;
• Identify and articulate individual strengths and weaknesses that inform project direction;
• Write a clear and concise brief that defines the aims and intentions of the individual brief within a specific area;
• Challenge current styles and trends within specific areas of study in order to generate, articulate and debate concept and design development;
• Develop a significant individual project that incorporates a resolved identity system and demonstrates coherence and capability across a variety of media formats;
• Use the principles of design responsibility and identify copyright/ethical issues related to professional design practice;
• Articulate and evaluate project outcomes through documentation, reports and presentations.

Content
This unit explores a wide range of topics related to the design and development of individual projects. Topics discussed may include:
• Concept generation;
• Visual development;
• Translating concepts across various media formats;
• Time management;
• Research and strategy;
• Technical development;
• Production;
• Identify system design;
• Information design;
• Typographic details;
• Project documentation.

Reading Materials

HDMMD322 Multimedia Design: Advanced Technology
12.5 Credit Points • 1 Semester • 36 Hours per Semester • Prerequisite: Advanced competency in multimedia design software such as Illustrator, Photoshop, After Effects, Flash, Maya, or Final Cut Pro • Teaching methods: Task and project-based learning and teaching methods that may include class lectures, demonstrations, tutorials, consultations and work-in-progress reviews • Assessment: e.g. Tasks: 30%; Major Project: 70%
A unit of study in the Bachelor of Design (Multimedia Design).

Aims & Objectives
This unit aims to explore the relationship between technology, innovation, media, content and culture, whilst providing a forum for students to further develop their skills in specialized software related to multimedia design practice. Through practical tasks and critical exploration of the relationship between design, designers, users, media and software innovation, students will extend their understanding of the implications of software use and ways in which technology may impact on design and content. Students will develop an in-depth designed outcome based on this understanding.
At the completion of this unit students should be able to:
• Explore and articulate the implications of software innovations to the aesthetics of design;
• Identify mainstream and alternate technologies, and articulate the impact of new technologies on a design practice, cultures, media, content and usage;
• Develop a multimedia design project that integrates conceptual development, technology and stylistic decision making, and resolve to a professional level;
• Present a coherent final designed outcome with demonstrable development of processes, technical experimentation and critical justification of decision-making.

Content
This unit explores a range of study areas related to technology within multimedia design. Students can choose a specific study area they are interested in. Topics discussed may include:
• Code languages;
• Editing and post production techniques;
• Research and strategy;
• Visual development;
• Technical development;
• Production;
• Identify system design;
• Information design;
• Typographic details;
• Project documentation.

Reading Materials
HDP050 Industry Placement 1
37.5 Credit Points • 1 Semester • Prahran • Prerequisite: Successful completion of 200 credit points. Students must apply and be interviewed for IP • Teaching methods: To experience through contact, observation and practice the disciplines of the design and film and television industries while under the supervision and guidance of professional practitioners • Assessment: An academic member of staff is appointed to supervise student progress and liaise with the employer
An optional third year, first semester unit of study in the Bachelor of Design (Communication Design), Bachelor of Design (Multimedia Design), Bachelor of Design (Industrial Design), Bachelor of Design (Interior Design) and Bachelor of Film and Television.

Aims & Objectives
Generally, to provide the opportunities for selected students to further their practical design or film and television education while working in industry.
Specifically, to develop practical design and film and television production skills, to help clarify career paths, to develop interpersonal skills and to promote professional and business awareness.

Content
Students are placed in an appropriate industrial situation organised by the Faculty of Design in cooperation with employers.

HDP055 Industry Placement 2
37.5 Credit Points • 1 Semester • Prahran • Prerequisite: Successful completion of 200 credit points. Students must apply and be interviewed for IP • Teaching methods: To experience through contact, observation and practice the disciplines of the design and film and television industries while under the supervision and guidance of professional practitioners • Assessment: An academic member of staff is appointed to supervise student progress and liaise with the employer
A unit of study in the Bachelor of Design (Communication Design), Bachelor of Design (Industrial Design), Bachelor of Design (Interior Design), Bachelor of Design (Multimedia Design) and Bachelor of Film and Television.

Aims & Objectives
Generally, to provide opportunities for selected students to further their practical design and film and television education while working in industry.
Specifically, to develop practical design and film and television production skills, to help clarify career paths, to develop interpersonal skills and to promote professional and business awareness.

Content
Students are placed in an appropriate industrial situation organised by the Faculty of Design in cooperation with employers.

HDPD214 Product Design Engineering 1
12.5 Credit Points • 1 Semester • Hawthorn, Prahran • Prerequisites: HD3D003, HD3D004, and HD3D005 Communication Technology 1 • Teaching methods: Project-based learning, lectures and tutorials, and industry visits as required • Assessment: e.g. Design studio 60%; Design and culture journal 20%; Digital visualisation fully 20%
A unit of study in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
This unit aims to build upon innovative idea generation and visualisation skills with the practical implementation of engineering studies of Materials and Processes into design projects. The unit contains a digital visualisation module to enable skills in the areas of photographic manipulation, digital page layout and presentation. The unit will also explore design and engineering history, the relationship between design and cultural change and the societal impact of design and engineering innovations throughout the unit theme of "Design and Culture".

At the completion of this unit students should be able to:
• Apply practical engineering methodology to determine effective and efficient design;
• Articulate the social, ecological and political implications of a product design engineer and responsibilities of the designer through research journal outcome;
• Explore the historical development of the design process and industrialisation as a way of informing new product development;
• Utilise computer image enhancing and digital presentation techniques to communicate visually;
• Use perspective drawing and manual rendering to effectively communicate design intent;
• Apply product semantics and ergonomics to achieve successful product design outcomes.

Content
This unit is comprised of three delivery modes that will explore the studio theme, Design and Culture.
1. Design and Culture Introduces students to the history of design in the 19th and 20th Centuries. It explores the historical development of design as a way of informing new product development. The lecture series may cover a range of topics that includes those indicated below (subject to variations):
   • Industrial Revolution; Birth of Modernism;
   • Rise of International Modernism;
   • Reactions against Modernism, and the rise of Post-Modernism;
   • The second Industrial Revolution - new materials and technologies;
   • The Social Responsibility of the designer;
   • Investigation of the design professional and history of design;
   • The relationship between design and cultural change and the social impact of design and engineering innovations.
2. Design Studio:
   • Material and Processes;
   • Concept development and design methodology;
   • Engineering documentation;
   • Basic principles of product design specifications;
   • Perspective drawing and rendering techniques and exercises;
   • Analysis of product reliability, performance and complexity;
   • Ergonomic principles and analysis of product semantics;
   • Product illustrations and digital rendering techniques;
   • Research and design application of findings.
3. Digital Visualisation. This component enables students to create digital presentations of their designs through the use of digital communication software including:
   • Introduction to Adobe Photoshop and Illustrator software;
   • Introduction to photo-manipulation and page layout and presentation techniques.

Reading Materials
Datscheffski, E 2001 The Total Beauty of Sustainable Products, Rotovision, Switzerland.

HDPD224 Product Design Engineering 2
12.5 Credit Points • 1 Semester • Hawthorn, Prahran • Prerequisite: HD3D003 Product Design Studio; HD3D004 Product Communication; HD3D005 Communication Technology 1. Students are also expected to be fluent in the use of MS PowerPoint and SolidWorks • Teaching methods: Project-based studio activities including lectures, tutorials and industry visits, as required • Assessment: e.g. Design studio / sustainable design - 80% of overall unit mark made up of: Project 1 Cast Metal Product (30%); Project 2 Sustainable Product Design (50% group mark); Esquisses (15%); Introduction to Plastics journal and exercises (20%)
A unit of study in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
This unit aims to evolve student's product design skills and incorporate the engineering subjects of Materials and Manufacturing and Electronic Systems into design projects. Students will further explore skills in 3D CAD and engineering documentation and explore product semantics. Students will develop an understanding of eco design principles and sustainability through the subject theme of Sustainable Design. The unit focuses on the impact of manufacturing process and materials on global ecosystems and the world's diminishing resources from a design and manufacturing perspective. The unit will explore Environmental Design Methodologies and apply these to a group design
Aims & Objectives
This unit aims to build upon innovative idea generation, problem solving and visualisation skills with the practical implementation of engineering studies such as Thermodynamics 1 and Machine Design. This unit will use industry related projects to further develop design skills and application of engineering knowledge. Through the theme of product interaction understanding of ergonomics and human factors will be explored, with a focus on research, the application of ergonomics and consideration of the human interface requirements in the product design process.

On completion of this unit, students should be able to:
- Apply knowledge of product semantics and product interaction to design challenges;
- Demonstrate the practical application of human factors and ergonomic data to design outcomes;
- Review designs in relation to the social, ecological and political implications and responsibilities of the designer;
- Incorporate the engineering sciences of Thermodynamics 1 and Machine Design into project problem solving;
- Apply engineering methodology to determine effective/efficient design outcomes using appropriate engineering specifications and processes;
- Use 3D CAD modelling skills and develop methods of engineering drawing and documentation to a professional level (Australian standards AS1100);
- Select appropriate material and manufacturing processes for low and high volume quantities;
- Work individually and as a team member demonstrating effective project management skills.

Content
This unit is comprised of two delivery modes as follows:
1. Product Interaction / Ergonomics and Human Factors
   - Product semantics;
   - Anthropometrics and ergonomics;
   - User centred design;
   - Test-rigs, computer modelling, drawing.
2. Design Studio
   - Thermodynamics 1 and Machine Design;
   - Research techniques required for product designers;
   - Engineering specifications of materials and manufacturing processes;
   - Utilisation of 3D CAD in product detailing and specifications;
   - Research and implementation of ergonomic data;
   - Exploration of low volume manufacturing techniques including sheet metal forming and fabrication techniques.

Reading Materials

Students will be referred to reference texts depending on specific project content.

HDPD324 Product Design Engineering 4
12.5 Credit Points • 1 Semester • 48 Hours per Semester • Hawthorn, Prahran
Prerequisite: HDPD206 Communication Technology 2, HDPD214 Product Design Engineering 1 • Teaching methods: Project-based studio activities including lectures, tutorials, and industrial visits, as required • Assessment: Product Design 60% of unit mark; Project 1: Entrepreneurial Design (40% Group mark); Project 2: Design for care (60%); FEA (Finite Element Analysis) 20%, PLASTICS 20%.
A unit of study in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
This unit aims to develop an understanding of user-centred design through the subject theme of ‘Social Responsibility’. The subject focuses on user-centred design for aged care, health care, childcare and users with disabilities or other
special needs. Students will develop engineering communication and project management skills required for the entrepreneurial development of products. Product Design Engineering 4 will use industry initiated design projects to incorporate the engineering sciences of Design for Manufacture. The unit will also introduce CAD-based finite element analysis and prototyping systems.

At the completion of this unit students should be able to:
- Incorporate the engineering sciences of Design for Manufacture in project-based problem solving;
- Apply Australian and International standards to user-centred design project;
- Apply finite element analysis (FEA) principles to plastic and metal components to validate design solutions;
- Apply appropriate material and manufacturing processes to product design;
- Articulate plastic material properties, manufacturing processes and plastic part design;
- Research and liaise with community user groups to achieve innovative solutions that address social need, changing demographics and the requirements of specific user groups;
- Engage with retailers and producers to design, package, manufacture and market a saleable retail product.

Content
This unit is comprised of three delivery modes as follows.

1. Product Design
   - Design for Manufacture; User centred design;
   - Ethical issues;
   - Engineering specifications, 3D CAD data, engineering drawings, assembly drawings, and ergonomic analysis;
   - Design for the manufacture and distribution of a limited volume product;
   - Project planning and critical path analysis, research industrial processes, material selection, cost analysis, break-even analysis, and application of manufacturing processes;
   - Basic Marketing concepts, product life cycle, retailing, concepts of value-adding, packaging, distribution;
   - Dimensional and tolerance analysis of plastic and metal assemblies;
   - Analysis and application of ISO and Australian standards.

2. FEA (Finite element Analysis) CAD
   - FEA CAD user interface and menus;
   - Principles of finite element analysis using CAD data;
   - Principles of CAD based thermal analysis;
   - Apply principles to basic assemblies and components.

3. Plastic Part Design
   - Plastic characteristics and selection;
   - Plastic moulding and forming processes;
   - Successful plastic part design.

Reading Materials
Hamilton, C 2005 Affluence: When Too Much is Never Enough, Allen & Unwin, Crows Nest, NSW.

HDPD512 Professional Project 1
12.5 Credit Points • 1 Semester • 48 Hours per Semester • Hawthorn, Prahran • Prerequisite: HDPD324 Product Design Engineering 4 • Teaching methods: Lectures, tutorials and consultation sessions • Assessment: e.g. Concept Proposal, presentation of proposed project (pass/fail requirement); Preliminary Technical Report 20%, Final Technical Report 40%, Digital Project Presentation 15%; Concept design folio 25%
A unit of study in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
The Professional Project provides students with an innovative and detailed product development process that enables skilled research and project management. It is not a redesign of an existing product; new technology or processes must be utilised. All projects must integrate mechanical engineering solutions into the final outcome.

The Professional Project aims to develop students' research, design and engineering skills to a professional manner while maintaining project development with industry. Consultation with industry and research organisations will be utilized to develop an innovative product. The initial research will focus on the latest available technology using various sources including the following areas; materials and manufacturing technology, customer needs, ergonomics, market evaluation and existing products.

On completion of this unit students should be able to:
- Collaborate with industry partners and research organisations to develop an innovative product;
- Investigate the latest available materials and manufacturing technologies to develop a project outcome which references customer needs, ergonomics, literature, market evaluation and existing products;
- Write and present a major project technical report;
- Integrate knowledge and skills acquired during the course in a design context;
- Utilise new technology or processes that integrate mechanical engineering solutions in a design solution;
- Demonstrate the ability to complete a full project from inception to achieving stated deliverables;
- Present a professional seminar.

Content
The following topics may be covered as appropriate:
- Research skills, report writing and referencing;
- Project Planning and Management techniques;
- Idea Generation and Concept Selection;
- Advanced materials and manufacturing technologies;
- Intellectual property and patent searches;
- Market analysis, SWOT / PEST analysis, product benchmarking/evaluation;
- Customer Needs surveys and analysis methods;
- Defining Product Design Specifications (PDS).

Reading Materials
Further references as recommended by the supervisor to support the student's project.

HDPD514 Product Design Engineering 5
12.5 Credit Points • 1 Semester • 48 Hours per Semester • Hawthorn, Prahran • Prerequisite: HDPD314 Product Engineering 5 • Teaching methods: Lecture style presentations; Guest lectures: Engineering tutorials to support project deliverables; industry visit, as required • Assessment: Assessment is based on assignments, Project(s), Critiques, Peer Discussions, Presentations and Folio. Major Project: 65%, Enquiries 35%.
A unit of study in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
Product Design Engineering 5 will incorporate product design and engineering skills to a professional level using design projects to develop professional presentation techniques, product detailing and project management skills.

This subject aims to:
- Apply design engineering skills gained throughout course to product design;
- Apply business and project management skills to product design projects;
- Utilise Australian and International standards to detail products to professional level.

The unit will develop an understanding of problem solving and team building through the subject theme of 'Innovative Methodology'. The subject focuses on problem solving.
solving techniques, innovation, case studies and the application of new materials and processes. At the completion of this unit students should be able to:

- Apply innovative and emerging design and engineering methodology to the product development process;
- Develop innovative design and engineering solutions utilising new processes and materials;
- Demonstrate design communication skills at a professional level through folio and presentation;
- Work effectively as a team member whilst demonstrating project management skills;
- Explore the social, ecological and political implications and responsibilities of the product design engineer.

Content
Topics discussed may include:

- Practical applications of the engineering sciences of 'Human Factors';
- Applications of advanced technology in the manufacturing industry;
- Concept development and design methodology, innovative idea generation techniques;
- Design for recycling and ecologically sustainable products;
- Benchmarking, design for quality, concurrent engineering;
- Reverse engineering techniques;
- Use of computer methods for efficient product and tooling design;
- Design and detailing of plastic components to AS1100 engineering drawing standards;
- FEA analysis of component assemblies;
- Evaluation of rapid prototyping systems;
- Problem solving methodology.

Reading Materials
Handouts that are supplied in class must be read and used as references as appropriate. Students will be referred to specific reference texts depending on project content. The following are recommended reading/reference materials:

- Huang, GQ 1995 Design for Concurrent Engineering Imperatives, Chapman & Hall
- Pugh, S 1996 Creating Innovative Products Using Total Design, Addison Wesley
- Longman, Boston
- Rees, H 1996 Understanding Product Design for Injection Molding, Hanser

HDPD522 Professional Project 2

12.5 Credit Points • 1 Semester • 48 Hours per Semester • Hawthorn, Prahran • Prerequisites: HDPD512 Professional Project 1 • Teaching methods: Lectures, tutorials and consultation sessions • Assessment: e.g. Revised Report submission (pass/fail requirement); Engineering design sign off (pass/fail requirement); Final Technical Report 50%; Design documentation folio and model/prototype 30%; Digital Project Presentation 20%

A unit of study in the Bachelor of Engineering (Product Design Engineering)

Aims & Objectives
The Professional Project aims to develop student's research, design and engineering skills to a professional manner while maintaining project development with industry. HDPD522 will utilise the research conducted in HDPD511 and concentrate on concept refinement, form studies, testing, engineering detailing and prototyping to meet the customer needs and product specifications.

On completion of this unit students should be able to:

- Collaborate with industry partners and research organisations to develop an innovative product;
- Utilise new technology or processes and integrate mechanical engineering solutions in a design outcome;
- Write and present a major project technical report;
- Integrate knowledge and skills acquired during the course in a design context;
- Apply research skills in the areas of literature, prior art, customer needs and market analysis;
- Conduct, formulate and define problems, generate and select solutions, and

analyse and prepare designs;
- Plan, manage and complete a full project from inception to achieve stated outcome, including the build and testing of a design;
- Present a professional seminar.

Content
The following topics may be covered as appropriate:

- Research skills
- Project management and critical path analysis
- Advanced materials and manufacturing technologies
- Design for the environment (DEE)
- Design for Manufacturing and Assembly and Disassembly (DFMA)
- Failure mode effects analysis (FMEA)
- Implementation of CAD based FEA analysis
- Manufacturing costing analysis techniques

Reading Materials

Further references as recommended by the supervisor to support the student's project.

HDPD524 Product Design Engineering 6 - Professional Attributes

12.5 Credit Points • 1 Semester • 48 Hours per Semester • Hawthorn, Prahran • Prerequisites: HDPD524 Product Design Engineering 4 • Teaching methods: In-class demonstrations to support project outcomes; industrial site visits, as required; Guest and staff lectures; Consultations/tutorials; Research materials and supporting project materials provided online in the Unit's Blackboard site • Assessment: Design Studio quizzes 20%, Exhibition design and planning 20%, Participation in workshops 10%

A unit of study in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
This unit aims to develop student's professional attributes and fine-tune their product design skills. It will provide students with an opportunity to explore their entrepreneurial skills and design ethically, further develop their digital presentation skills to industry standard, and gain project management and interpersonal skills. Through a series of esquisses, content will be developed for a professional design folly.

At the completion of this unit students should be able to:

- Implement fine element analysis to industrial applications;
- Articulate knowledge of plastic product design and product detailing skills through highly articulated design solutions;
- Communicate and refine designs with 3D modelling and rapid prototyping;
- Develop engineering drawing documentation to a professional level (Australian Standard AS1100);
- Use appropriate design communication skills through the development of a professional portfolio;
- Apply skills in project planning and management to design and exhibition projects;

Content
Topics for discussion may include:

- Professional Folio development;
- Application of product illustration and digital rendering techniques to a professional level;
- Presentation and interpersonal skills;
- Application of quality management systems to product designs;
- Analysis of product reliability, performance and complexity;
- Application of ergonomic principles and analysis of product semantics;
- Design, management and construction of exhibition design.
Reading Materials
Handouts that are supplied in class must be read and used as references as appropriate.

Recommended Reading

HED400 Professional Experience in Engineering
0 Credit Points • 12 Weeks (minimum) • Hawthorn • Prerequisite: HED400
Introductory Seminar • Corequisite: Nil • Teaching methods: Approved relevant engineering practice-experience. There is no formal teaching component. • Assessment: Reflective journal, Portfolio.
A unit of study in the Bachelor of Engineering (Civil Engineering) Bachelor of Engineering (Civil) / Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business, Bachelor of Engineering (Product Design Engineering), Bachelor of Engineering (Robotics and Mechatronics), Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering,Bachelor of Engineering (Biomedical Engineering), Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Science (Photonic) / Bachelor of Engineering (Telecommunication and Network Engineering), Bachelor of Engineering (Telecommunication and Internet Technologies), Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Software Engineering, Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems) and Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
This unit aims to:
• Help students to gain practical experience in their chosen discipline of engineering.
• Encourage students to gain first-hand experience in an engineering-practice environment outside the university.
• Improve awareness of a range of issues associated with professional practice.
• Ensure that students' perceptions of engineering during degree studies do not develop in isolation from the realities of practice.

Content
Students undertake a minimum of the equivalent of 12 weeks of approved relevant engineering-practice experience, which may include one or more of:
• Practical experience (paid or unpaid) in an engineering environment outside the teaching establishment.
• Classes and activities on professional ethics and conduct.
• Participation in classes conducted by guest presenters with industry experience.
• Industry visits and inspections.
• Industry based projects (including but not only final year projects).
• Industry research for feasibility studies.
• Study of industry policies, processes, practices and benchmarks.
• Interviewing engineering professionals.
• Industry based investigatory assignments.
• Direct industry input of data and advice to problem solving, projects and evaluation tasks.
• Electronic links with practising professionals (eg guest presenters in online discussion forums).
• Case studies.
• Venture Cup.
• or other activities approved by the HED400 Unit Convenor.

HEF1000 Professional Engineering
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Teaching methods: Lectures (12 hrs) and tutorials (12 hrs); Laboratories (36 hrs) • Assessment: Professional issues involving reports and presentations (50%), CAD section involving assignments and test (50%)
A unit of study in the Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Biomedical Engineering) / Bachelor of Business, Bachelor of Engineering (Biotechnology) / Bachelor of Science (Biotechnology), Bachelor of Engineering (Civil Engineering), Bachelor of Engineering (Civil Engineering) / Bachelor of Business, Bachelor of Engineering (Electrical and Electronic Engineering) and Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
During the course we aim:
• To develop and improve students investigation, teamwork and time management skills.
• To develop understanding and basic knowledge of: Professional careers within Engineering and Science. Professionalism in engineering, including ethical aspects of engineering. Critical analysis and problem solving strategies. Professional presentation and engineering report writing.
• To develop students' ability to graphically communicate ideas & designs using engineering standards and conventions, and to gain understanding of: Graphical communication fundamentals. Development of design ideas using sketches. Sketching and drawing in isometric projection. Spatial relations of lines and surfaces. Dimensioning. Presentation of drawings according to professional standards. Relationships between 2D and 3D graphical presentations. Concepts of 3D visualisation. Orthogonal projection. Intersections and auxiliary views. Assembly drawings. Graphical presentation of design projects.

At the end of this unit students will be able to:
• Link and to use their existing knowledge for engineering purposes.
• Demonstrate understanding of history of a particular engineering discipline.
• Demonstrate understanding of emerging trends in a particular engineering discipline.
• Demonstrate development of investigative skills.
• Demonstrate understanding of engineering approach in problem solving.
• Demonstrate understanding of engineering systems.
• Demonstrate understanding of design process.
• Demonstrate ability to communicate design outcomes effectively using sketches and CAD drawings.
• Demonstrate ability to write engineering reports.
• Demonstrate ability to give formal professional presentations.
• Demonstrate awareness of engineering ethics.
• Demonstrate understanding of social and environmental implications of engineering practice.

Content
• History, current challenges and future of a particular engineering discipline
• Fundamentals of engineering communication (graphical, written and oral)
• Interview fundamental and functions
• Engineering projects phases and stakeholders
• Fundamentals of project management
• Problem-solving process and strategies
• Professionalism in engineering and professional associations
• Engineering ethics
• Social and environmental aspects of engineering activities
• Sustainable development

Reading Materials

Textbooks
To be advised.
HES0000  Careers in the Curriculum
0 Credit Points • 1 Semester • 1 hour per week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Class • Assessment: Assignment (job application and introduction letter)
A unit of study in the Bachelor of Engineering (Civil Engineering) and the Bachelor of Engineering (Civil Engineering) / Bachelor of Business

Aims & Objectives
To introduce students to the techniques for successfully gaining desired employment and the skills necessary for effective career planning and career management.

Content
Identification of skills and values
- Writing a winning resume
- Writing cover letters
- Networking, graduate attributes, employer expectations
- Interview theory
- Interview practice
- Topic selected in consultation with Faculty, guest speakers
- Further selection processes
- Career Action Plan

Reading Materials
Lewis, M & O'Noel, K, Your Careers Change Action Kit, 1993.

HES0001 Careers in the Curriculum
0 Credit Points • 1 Semester • 1 hour per week • Hawthorn • Prerequisite: Nil • Teaching methods: Class • Assessment: Assignment (job application and introduction letter)
A unit of study in the Bachelor of Engineering (Mechanical Engineering), Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business, Bachelor of Engineering (Robotics and Mechatronics) and Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering)

Aims & Objectives
To introduce students to the techniques for successfully gaining desired employment and the skills necessary for effective career planning and career management.

Content
Identification of skills and values:
- Writing a winning resume
- Writing cover letters
- Networking, graduate attributes, employer expectations
- Interview theory
- Interview practice
- Topic selected in consultation with Faculty, guest speakers
- Further selection processes
- Career Action Plan

Reading Materials
Lewis, M & O'Noel, K, Your Careers Change Action Kit, 1993.

HES0002 Careers in the Curriculum
0 Credit Points • 1 Semester • 1 hour per week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Class • Assessment: Assignment (job application and introduction letter)
A unit of study in Bachelor of Engineering (Product Design Engineering), Bachelor of Technology (Air Transportation Management), Bachelor of Technology (Air Transportation Management) / Bachelor of Business, Bachelor of Technology (Aviation) and Bachelor of Technology (Aviation) / Bachelor of Business

Aims & Objectives
To introduce students to the techniques for successfully gaining desired employment and the skills necessary for effective career planning and career management.

Content
Identification of skills and values:
- Writing a winning resume
- Writing cover letters
- Networking, graduate attributes, employer expectations
- Interview theory
- Interview practice
- Topic selected in consultation with Faculty, guest speakers
- Further selection processes
- Career Action Plan

Reading Materials
Lewis, M & O'Noel, K, Your Careers Change Action Kit, 1993.

HES1101 Climate Change
12 Credit Points • 1 Semester • 36 Contact Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures (18 Hours); Tutorials and Project Work (18 Hours); Flexible Delivery • Assessment: Project Assignment and Presentation 40%; Tutorial participation 20%; Exam 40 %
Elective subject in: Bachelor of Engineering (Civil Engineering), Bachelor of Engineering (Civil Engineering) / Bachelor of Business. Also an elective subject available for all Faculties through Elective Plus Sequence.

Aims & Objectives
During the course we aim:
- To develop understanding and basic knowledge of: Natural cycles and geological history of the earth; Environmental implications of human activities; Parameters affecting and driving the climate; Global warming and the role of solar radiation and greenhouse gases; Sustainable development; Critical
analysis and problem solving strategies; Professional presentation and engineering report writing.

- To provide students with the opportunity to experience peer reviewed oral presentations.
- To develop and improve students' investigation and teamwork skills.

**Content**

- Geological history of the earth and life
- Earth's atmosphere and factors affecting climate
- Solar radiation
- Geo/Bio/chemical natural cycles
- Ecology and ecosystems
- Energy use, renewables and emissions
- Atmospheric warming and greenhouse gases
- Sequestration techniques
- Sustainable development and the built environment
- Risk management principles
- Global business and political framework

**Aims & Objectives**

To provide students with a unique opportunity to perform real-life engineering tasks such as: analysis of design documentation; basic calculations; preparation of engineering specifications; preparation of design documentation.

To provide students with an opportunity to interact with experts in different sub-disciplines of civil engineering.

At the completion of this unit, students should be able to:

- Demonstrate understanding of basic elements and functions of civil engineering systems.
- Demonstrate understanding of design strategies.
- Demonstrate development of research/investigation skills.
- Demonstrate capability to generate alternative engineering solutions.
- Demonstrate capability to analyse critically various alternative design.
- Demonstrate awareness of engineering ethics.
- Demonstrate understanding of engineering approach in problem solving.
- Demonstrate ability to communicate design outcomes effectively.
- Demonstrate ability to give formal professional presentations.
- Demonstrate ability to write engineering reports.
- Demonstrate understanding of social and environmental implications of engineering practice.

**Reading Materials**


**HES1105 Civil Engineering Project**

12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Teaching methods: Lectures (24 hours) Tutorials (12 hours) Group work (24 hours) • Assessment: Professional reports, projects, professional presentations and tests (100%).

A unit of study in the Bachelor of Engineering (Civil Engineering) and Bachelor of Engineering (Civil Engineering) / Bachelor of Business.

**Aims & Objectives**

To provide students with the opportunity to further improve skills in the following areas: Teamwork, time management; problem solving; professional presentation; engineering report writing.

To provide students with a unique opportunity to perform real-life engineering tasks such as: analysis of design documentation; basic calculations; preparation of engineering specifications; preparation of design documentation.

To provide students with an opportunity to interact with experts in different sub-disciplines of civil engineering.

At the completion of this unit, students should be able to:

- Demonstrate understanding of basic elements and functions of civil engineering systems.
- Demonstrate understanding of design strategies.
- Demonstrate development of research/investigation skills.
- Demonstrate capability to generate alternative engineering solutions.
- Demonstrate capability to analyse critically various alternative design.
- Demonstrate awareness of engineering ethics.
- Demonstrate understanding of engineering approach in problem solving.
- Demonstrate ability to communicate design outcomes effectively.
- Demonstrate ability to give formal professional presentations.
- Demonstrate ability to write engineering reports.
- Demonstrate understanding of social and environmental implications of engineering practice.

**Content**

- Basic elements of civil engineering systems such as structural, geotechnical, hydraulic and environmental engineering.
- Basic functions of civil engineering systems.
- Fundamentals of civil engineering construction methods.
- Fundamentals of project management.
- Design principles and process.
- Basic calculations.
- Engineering ethics.
- Sustainable development.
- Social and environmental aspects of engineering activities.

**Reading Materials**

There are no prescribed texts, though the early lectures will introduce students to a wide range of information resources available through the library and the procedures for accessing that information.

**HES1115 Sustainable Design**

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisites: Nil • Corequisite: Nil • Teaching methods: Lectures; Tutorials; Assessment: Assignment, Tutorial participation, Exam

A unit of study in the Bachelor of Engineering (Civil Engineering) and Bachelor of Engineering (Civil Engineering) / Bachelor of Business.

**Aims & Objectives**

During the course we aim:

- To develop and improve students' investigation and teamwork skills.
- To develop an understanding of the basic knowledge of: Environmental implications of engineering activities. Sustainable design. Sustainable development and incorporating it into engineering practice. Critical analysis and problem-solving strategies. Professional presentation and engineering report writing.
- To provide students with the opportunity to experience peer reviewed oral presentations.

**Content**

Global and local environmental issues:

- Ozone depletion, atmospheric warming, biodiversity, renewable resources, social issues, impact of population and quality of life.
- Social and environmental aspects of engineering activities.
- Sustainable development.
- Energy Use.
- Greening of Industry.
- The Built Environment.
- Sustainable Urban Transport.
- Achieving 'Zero Waste'.

**Reading Materials**


**HES1125 Mechanics of Structures**

12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: Nil • Teaching methods: Lectures (24 Hours) Tutorials (22 Hours), Laboratory (2 Hours), Class Tests (8 Hours) • Assessment: Examinations (80%), Lab Reports (10%)

A unit of study in the Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Civil Engineering/Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Mechanical Engineering) Bachelor of Engineering (Mechanical)/Bachelor of Business, Bachelor of Engineering (Product Design Engineering)/Bachelor of Engineering (Robotics and Mechatronics), and Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering).

**Aims & Objectives**

During this unit, we aim to introduce first year engineering students to the basic principles of equilibrium and provide an environment where students can learn about and evaluate the behaviour of structural members under applied loads. In particular, structural behaviour of members under axial load, shear force and bending actions.

On completion of this unit, students should be able to:

- Recognise and estimate the magnitude of loads acting on simple structural members.
- Demonstrate an understanding of rigid body equilibrium by: Drawing free body diagrams showing the function of simple structural elements; Calculating the force(s) or moment required to maintain a structure in equilibrium; Calculating external reactions on structural members under applied loading; Drawing axial
force, shear force and bending moment diagrams for simple beams.

• Demonstrate an understanding of the behaviour of structural material by:
  • Calculating section properties for simple member cross sections; Calculating internal axial stresses, shear stresses, and bending stresses, in structural members.

Note: Structural members include beams, trusses, ties, struts, shafts and bolts.

Content


• Structural Analysis of Trusses and Design of Simple Connections (25%): Free Body Diagrams and External Reactions Calculations, Analysis of Trusses by Method of Joints and Method of Sections, and Zero Force Members, Simple Analysis of Truss Connections by axial and shear stress, with an introduction in allowable stress vs. ultimate stress.

• Internal Loadings - Shear Force and Bending Moment Diagrams (30%): Analysis of point loads, uniformly distributed loads, and non-uniformly distributed loads, Internal Actions of Beams: Axial Forces, Shear Forces and Bending Moments, Axial Force, Shear Force and Bending Moment Diagrams, Relationships between loads, shear and bending moments.

• Section Properties of Structural Members (10%): Location of Centroids (Centre of Gravity or Area) for Composite Bodies/Areas, Second Moments of Area (Moments of Inertia) by Integration, Second Moments of Area (Moments of Inertia) by the Parallel Axis Theorem for Composite Areas.

• Internal Stresses - Shear and Bending Stresses (20%): The Flexural Formula and Bending Stresses in Beams, Bending Stress distributions across Beam Sections, The Shear Formula and Shear Stresses in Beams, Shear Stress distributions across Beam Sections.

Textbooks


HES1300 Materials and Processes

12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures; Tutorials; Laboratory; Online • Assessment: Examination, Laboratory, Tutorials, Quizzes

A unit of study in the Bachelor of Engineering (Civil Engineering) Bachelor of Engineering (Civil)/Bachelor of Business, Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Mechanical Engineering) Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business Bachelor of Engineering (Product Design), Bachelor of Engineering (Robotics and Mechatronics), and Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering)

Aims & Objectives

Aims of the course can be identified as follows:

• To develop an awareness within students of the correlation between the structure of materials at the nano, micro and macro level and the properties of the three major classes of materials, namely, metals, polymers and ceramics.

• On the basis of structure/properties correlations, introduce students to the concepts involved in the designing the structure of a material to achieve a predetermined set of properties.

• To demonstrate and explore through the use of practical laboratory experience the structure/property relations of materials and their effect on performance.

• To provide students with the opportunity to work in small groups and carry out a research project in which they determine the structure/property relations of materials used in well known products, and present their findings in peer reviewed oral presentations.

• To make students aware of failure in materials and thereby develop an understanding of the principles of materials selection.

• Focus student awareness on the fact that many materials are derived from non-renewable sources and suffer from degradation in many forms in their application. Hence, bring students to the realisation that materials and technology can cost-effectively contribute to building an ecologically friendly and sustainable environment.

• Excite students in the knowledge that advances in modern materials are playing critical roles in many new technologies.

• At the completion of this unit, students should be able to:
  • Describe the difference in atomic/molecular structure between the major classes of materials that give rise to differences in material properties.
  • To analyse material response to mechanical and physical stimuli.
  • Compute mechanical properties of all major classes of materials on the basis of experiment.
  • Use mathematical knowledge and skills to calculate basic physical properties of materials.
  • Ability to comment, particularly at the design and selection stage, on the suitability of different methods of strengthening of materials and the potential for material degradation.
  • Possess a basic methodology for materials selection in respect of the method of manufacture and its influence on structure/properties and anticipated performance, and the potential for recyclability.

Content

• Structure of Materials.

• Atomic structure, electron configuration, bonding.

• Crystal structure, unit cells, planes and direction, x-ray diffraction, density.

• Amorphous structures, composition.

• Dislocation theory, critical resolved shear stress.

• Mechanical test of Metals, polymers, ceramics, mechanical testing.

• Mechanical properties of Engineering materials Structure and mechanical properties of metals: elastic, plastic, tensile properties, shear, slip.

• Structure and mechanical properties of polymers and ceramics.

• Recovery, recrystallisation, grain growth.

• Fatigue, ductile, brittle, impact, creep.

• Material degradation and recycling.

• Corrosion: composition cell, stress cell, concentration cell, dry corrosion, and corrosion protection.

• Materials selection strategies.

• Typical properties, properties by class of material, relationship between properties and failure modes, materials selection.

Textbooks


Recommended Reading


HES1300 Robotics and Mechatronics Project 1

12.5 Credit Points • 1 Semester • 72 Hours • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures; Laboratories • Assessment: Assignments, Class exercises, Practical Examination, Tests

A unit of study in the Bachelor of Engineering (Robotics and Mechatronics) Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business and Bachelor of Engineering (Mechanical Engineering)

Aims & Objectives

During the course we aim to:

• Develop skills in visualisation and graphical communications.

• Learn basics of technical drawing and engineering terminology.

• Understand the principal and develop practical skills in CAD.

• Provide tools and techniques that will assist students when undertaking engineering projects.

• Introduce programming principles.

• Introduce the C programming language.

• Develop programming knowledge and skills applicable to the content area.

• Learn and understand different approaches of robot programming required for completion of Robotics and Mechatronics Project 2 in the second semester

At the end of this course students will be able to:

• Communicate graphical skills by simple sketches.

• Interpret technical drawings.

• Understand engineering terminology.

• Use CAD software to the level specified by AS1100 Engineering Standards
A unit of study in the
At the end of this course students
Reading

Robotic

HES1305 Robotics and Mechatronics Project 2
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures; Laboratories; Tutorials; Workshops • Assessment: Examinations, Journal, Literature Review, Oral Presentation, Pracs, Report.

A unit of study in the Bachelor of Engineering (Robotics and Mechatronics), Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering)/Bachelor of Engineering (Mechanical)/Bachelor of Business, and Bachelor of Engineering (Mechanical Engineering)

Aims & Objectives
At the end of this course students will be able to demonstrate:
- Understanding of current challenges facing robotics and mechatronics engineering discipline.
- Understanding of history of a their chosen discipline.
- Understanding of emerging trends in a particular engineering discipline.
- Understanding of engineering education environment and emerging trends in engineering education.
- Awareness of skills necessary to perform engineering tasks.
- Understanding of skills required from engineering students and engineering graduates.
- Development of investigation skills.
- Understanding of engineering approach in problem solving.
- Understanding of engineering systems and systemic approach in engineering.
- Understanding of design process.
- Capability to generate alternative engineering solutions to solve simple engineering problem.
- Capability to analyse critically various alternative engineering solutions.
- Ability to communicate design outcomes effectively using sketches and CAD drawings.
- Ability to write engineering reports.
- Ability to give formal professional presentations.
- Ability to interview practicing engineer in a particular engineering discipline.
- Awareness of engineering ethics.
- Understanding of social and environmental implications of engineering practice.
- Capability of writing detailed computer programs in C.
- Capability of finishing a given task within a certain time frame using limited resources.
- Capability of making simple parts using lathe and milling machines.
- Capability of using welding for different applications.

Content
Robotic Project:
- Embedded systems
- Sensors
- Actuators
- Interface design
- Behaviour programming and software design
- Specification design
- Troubleshooting
- Application of structural programming principals in behaviour programming.

Technical Communication:
- History, current challenges and future of a particular engineering discipline.
- History, current challenges and future trends of an engineering education of a particular branch of engineering.
- Fundamentals of engineering communication (graphical, written and oral).
- Interview fundamental and functions.
- Engineering projects phases and stakeholders.
- Fundamentals of engineering design.
- Fundamentals of project management.
- Problem solving process and strategies.
- Professionalism in engineering and professional associations.
- Engineering ethics.
- Social and environmental aspects of engineering activities.
- Sustainable development.

Machining workshop:
- 40 hours of practical machining and welding workshop

Reading Materials


Handy Board Documentation: http://el.www.media.mit.edu/groups/el/Projects/handy-board/technics/index.html


Mackay, H: Why Don’t People Listen, Australia, Pan, 1994.


HES1490 Introduction to Chemistry
12.5 Credit Points • 1 Semester • 60 Hours • Prerequisite: Nil • Teaching methods: Lectures, Tutorials, Practical Classes, Mathematical Competency, Web Based Unit Presence • Assessment: Practical work (15%), Practical exam (5%), Tutorial tests and Scientific Communication (20%), Maths Competency Test (5%), End of Teaching period Exam (55%).

A unit of study in: Bachelor of Science (Biochemistry and Chemistry), Bachelor of Science (Biology and Chemistry), Bachelor of Science (Biotechnology) / Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology) / Bachelor of Business, Bachelor of Science (Psychology and Biochemistry), Bachelor of Health Science (Public and Environmental Health)

Aims & Objectives
During the unit we aim:
- To provide an introduction to the basic concepts of chemistry necessary for environmental and biotechnology related studies
- To provide an understanding of the basic structure of elements and compounds and how this determines their interaction with each other.
- To study the various reactions elements and compounds undergo.
- To establish a thorough understanding of the quantitative aspects of chemical reactions.
- To study how useful electrical energy can be obtained from chemical reactions.
- To introduce basic practical skills for the handling and analysis of chemicals.
- To establish the importance of chemical safety and precautions in the chemical laboratory and other hazardous environments.

Students will gain the following knowledge in the areas of:
- Stoichiometry and Elementary Chemistry
- Demonstrate the ability to name and write the symbols of elements, and the names and formulae of various molecular and ionic compounds.
- Use chemical equations to calculate relative amounts of reactants and products and express the result in various forms, i.e. mass or mole of a reactant or product, % purity of product, identify the limiting and excess
Reading Materials

HES1490 Online Resources:
- Detailed Unit Description and Information.
- Academic Staff contact details.
- Pre-recorded lecture material (lecture notes and video).
- Animated Problem Solving Examples.
- HES1490 Lab Reference Manual (Safety and Technique Information).
- Study booklet for Tutorial and Lecture Problems.
- Chemistry Topic Discussion Boards.
- A Library tour video.
- General Help sheets and Unit Information.
- Troubleshooting Guide and Discussion Boards.
- Further information and documents available in the HES1490 Unit Description document available on the unit website: http://www.mysubjects.swin.edu.au

Textbooks

Chemistry, 8th edn, Raymond Chang (McGraw-Hill).

All students should obtain a copy of this text. It is available from the Swinburne Bookshop. It is essential that students have access to this book as the course is designed around this text. The library has limited numbers of the current edition for limited time loan.

Aims & Objectives

To provide a thorough introduction to the basic concepts of chemistry necessary for biochemical and biotechnology studies.

- To provide an understanding of the basic structure of elements and compounds and how this determines their interaction with each other.
- To study the various reactions elements and compounds undergo.
- To establish a thorough understanding of the quantitative aspects of chemical reactions.
- To study how useful electrical energy can be obtained from chemical reactions.
- To introduce basic practical skills for the handling and analysis of chemicals.
- To establish the importance of chemical safety and precautions in the chemical laboratory and other hazardous environments.

Stoichiometry and Elementary Chemistry Skills

- Demonstrate an ability to name and write the symbols of elements, and the names and formulae of various molecular and ionic compounds.
- Use chemical equations to calculate relative amounts of reactants and products and express the result in various forms, i.e. mass or mole of a reactant or product, % purity of product, identify the limiting and excess reactants.
- Using calculations predict the solubility of salts in a given reaction.
- Perform calculations associated with practical work, e.g. dilutions, back-titration etc.
- Perform calculations with aqueous and gaseous species in terms of volumes and pressures, using equations based around the Ideal Gas Law.
- Show the relationship between Kp and Kc and calculate the equilibrium constant given equilibrium concentration data.
- State the relationship between the reaction quotient and equilibrium constant and predict the direction a reaction will proceed to reach equilibrium.
- Use the concepts of equilibrium to determine the concentration of all species in a solution.
- Show how changing concentration, volume, pressure, or temperature will shift the reaction so that equilibrium will be maintained using Le Chatelier’s Principle.
- Understand the concept of pH and calculate the pH of a strong acid or base of given concentration.
- Show and be able to interconvert between Ka, Kb, pKa and pKb.
- Explain how a buffer works and be able to calculate the pH of a buffer.
- Understand how an acid-base indicator works and reasoning behind the choice of an indicator for a given titration.
- Predict which direction pH will change on addition of different types of chemicals and understand the common ion effect on a given system.
- Predict, using calculations, the solubility of sparingly soluble salts in aqueous solution and be familiar with the factors that increase or decrease the solubility in aqueous solution.
- Understand the effect of complex ions on equilibria and solubility.
- Understand the effect of a catalyst has on equilibrium concentrations.

Acids & Bases

- Define an acid or base according to the Lowry-Bronsted scheme and write the conjugate of a given acid or base and be able to identify a weak and a strong acid or base.
- Understand the concept of pH and calculate the pH of a strong acid or base of given concentration.
- Show and be able to interconvert between Ka, Kb, pKa and pKb.
- Explain how a buffer works and be able to calculate the pH of a buffer.
- Understand how an acid-base indicator works and reasoning behind the choice of an indicator for a given titration.
- Predict which direction pH will change on addition of different types of chemicals and understand the common ion effect on a given system.
- Predict, using calculations, the solubility of sparingly soluble salts in aqueous solution and be familiar with the factors that increase or decrease the solubility in aqueous solution.
- Understand the effect of complex ions on equilibria and solubility.

Content

- Elementary chemistry: structure of atom, mole concept, formulae, naming, introduction to Periodic Table and simple calculations.
- Writing and balancing molecular, ionic and redox equations.
- Stoichiometry: calculations covering all types of chemical reactions with amounts of reactants and products expressed as mass, mole, concentration and volumes of gases. Review of gas laws and relevant calculations.
- Properties of gases in solution.
- Equilibria: quantitative and qualitative aspects of gaseous, heterogeneous, acid-base, solubility and complex-ion equilibria.
- Major emphasis on properties of acids and bases and pH measurement.
- Practical work covers measurement and errors, a study of chemical reactions and volumetric analyses.
- Safety in the laboratory and application to potentially hazardous environments.

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in aqueous solution.

- Understand the effect of complex ions on equilibria and solubility

Electrochemistry
- Balance redox equations in acidic or basic solutions.
- Given an electrochemical cell (Galvanic) and the using Standard Reduction Potentials, calculate the standard cell potential
- Ecell and hence determine if a cell reaction is spontaneous.
- Use Ecell to calculate equilibrium constants of reactions.
- Use the Nernst equation to calculate Ecell under non-standard conditions and hence to predict the direction of reaction.
- State the advantages of different types of battery systems.
- State one cause of corrosion and relate the methods employed to protect vulnerable materials.

Content
- Elementary chemistry: structure of atom, mole concept, formulae, naming, introduction to Periodic Table and simple calculations.
- Writing and balancing molecular, ionic and redox equations.
- Stoichiometry: calculations covering all types of chemical reactions with amounts of reactants and products expressed as mass, mole, concentration and volumes of gases. Review of gas laws and relevant calculations. Properties of gases in solution.
- Equilibria: quantitative and qualitative aspects of gaseous, heterogeneous, acid-base, solubility and complex-ion equilibria. Major emphasis on acid-base equilibria, buffers, properties of acids and bases, pH measurement.
- Energy from chemical reactions. Galvanic cells, standard potentials and Nernst Equation.
- Practical work covers measurement and errors, a study of chemical reactions and volumetric analyses including acid-base redox and complexometric reactions.
- Safety in the laboratory and application to potentially hazardous environments.

Reading Materials
HES1510 Online Resources: Detailed Unit Description and Information Academic: Staff contact details Pre-recorded lecture material (lecture notes and video) Animated Problem Solving Examples HES1510 Practical Manual HES1510 Lab Reference Manual (Safety and Technique Information) Study Booklet for Tutorial and Lecture Problems Chemistry Topic Discussion Boards A Library tour video General Help sheets and Unit Information Troubleshooting Guide and Discussion Boards Further information and documents are available in the HES1510 Unit Description document available on the unit website: http://www.mysubjects.swin.edu.au

Textbooks
Chemistry, 8th edn, Raymond Chang (McGraw-Hill).

All students should obtain a copy of this text. It is available from the Swinburne Bookshop. It is essential that students have access to this book as the course is designed around this text. The library has limited numbers of the current edition for limited time loan.

HES1525 Chemistry 2
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: HES1510 Chemistry 1 (Introduction to Chemistry) or a credit in HES1490 Introduction to Chemistry (HES1500E) or equivalent • Teaching methods: Lectures, practical classes, web based unit presence (Blackboard). • Assessment: Analytical test 25%, practical reports 25%, exam (physical & organic) 50%

A unit of study in the: Bachelor of Health Science (Public and Environmental Health), Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology)/Bachelor of Business and Bachelor of Science (Psychology)/Biotechnology.

Aims & Objectives
This unit of study aims:
- To build on the fundamentals of modern chemistry introduced in Chemistry 1.
- To prepare students for later studies which require a basic fundamental understanding of chemical principles.
- To introduce, and to begin to develop skills in, organic, physical and analytical chemistry.

At the end of this unit of study students will be able to:
- Use skills developed in introductory chemistry to carry out detailed chemical analysis of at least one compound (e.g. borax composition, acidity of red wine).
- Apply a basic understanding of thermodynamics to calculations involving, for example, the increase in temperature of a given substance when a given amount of heat is added.
- Carry out complex calculations involving the pH of weak acids and buffers.
- Apply basic knowledge of organic chemistry to determine the composition of an unknown sample.
- Show experience in the writing of aims, methodology and results associated with chemical experimentation.
- Be able to prepare, under loose guidelines, a laboratory report communicating the results of chemical experimentation.
- Understand the basic principles of analytical chemistry, particularly acid-base titrations, potentiometric and conductimetric titrations.
- Have planned and executed one project based laboratory exercise designed to identify a chemical unknown.
- Understand the nature of the chemical bond that the resultant shape of molecules.
- Know the classes of organic compounds (based on their functional groups) and how to name them (nomenclature).
- Know how to test for solubility and the common functional groups of organic chemicals.
- Have an understanding of the first law of thermodynamics and its application to heat transfer.
- Gain an introduction to chemical kinetics.
- Use appropriate problem solving skills to perform quantitative analysis of chemicals, calculations involving chemical kinetics and application of the first law of thermodynamics.
- Work cooperatively, but individually, in a team environment.
- Understand the importance of chemical safety and precautions in the chemical laboratory and other hazardous environments.
- Understand why it is now considered important to design degradable polymers and how to do so.
- To have some exposure to the errors and uncertainty associated with experimental chemistry.
- To understand that natural and living entities exhibit analysis which varies from sample to sample and to begin to have an understanding of the variation to be expected.
- Appreciate the requirement for safety in the laboratory and duty of care for fellow students.
- Know how to record scientific observations correctly and honestly.
- Appreciate the requirement for safety in the laboratory and duty of care for fellow students.

Content
- Organic Chemistry: A basic introduction to organic chemistry - the classes and structure of organic chemicals including the importance of functional groups.
- Nomenclature (naming of simple and complex organic molecules).
- An introduction to reaction mechanisms involving organic chemicals and including ways to categorise those reactions.
- Basic techniques in organic chemistry, including testing for functional groups.
- Analytical chemistry: Quantitative analysis of chemical using acid-base titrations, potentiometric and complexometric titrations and gravimetric analysis.
- How to obtain good precision in chemical analysis.
- Physical and Polymer Chemistry: A general introduction to polymers - their chemical structure and physical properties.
- Composition and formation of biological polymers and their structural properties.
- A general introduction to physical chemistry.
- Enthalpy and the first law of thermodynamics.
- An introduction to chemical kinetics.
Textbooks
Your textbook from first semester (HES1510, HES1400) should be retained. Those who do not have this text book should consult with the lectures involved as to the advisability of purchasing it.


Printed notes for each of the topics will also be available and should be purchased from the book shop. A prac manual is essential and is you should consult your lecturer to obtain details of how to obtain one.

HES1555 Consumer Science
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil, however HES1510 Chemistry 1, HES1490 Introduction to Chemistry or the equivalent is highly recommended. • Corequisite: Nil • Teaching methods: Lectures, practical classes, student based learning, web based unit presence • Assessment: Assignment (5%), final examination (50%), practical reports (20%), mid semester test (25%)

A unit of study in the Bachelor of Science (Biotechnology), Bachelor of Science (Psychology and Biochemistry), and Bachelor of Science (Biochemistry and Chemistry).

Aims & Objectives
• To build upon, and reinforce, the knowledge gained in HES1510 (Chemistry 1).
• To introduce students to real world examples of the use of chemistry.
• To strengthen the areas of organic, physical and inorganic chemistry!
• To provide a basic understanding of the structures and functions of the major types of molecules.

Content
Agricultural Products and Soil Chemistry:
• Chemical and ‘organic’ fertilisers, their analysis, content, purpose and use.
• The N:P:K ratio in fertilisers.
• The structure of clay and sand and their distinction based on particle size.
• The role of Ca²⁺ in clay structure.
• The importance of nutrient adsorption onto soils for plant uptake. pH measurement and significance in soils.
• Pesticides and herbicides in the environment: an introduction.

Advertising and Mis-advertising of Consumer Products:
• Misleading advertising in the supermarket.
• How to compare products.
• The mathematics involved in consumer choice.
• Choosing ‘healthy’ products on the basis of their chemical constituents, and the science behind those choices.

Cleaning Products:
• How do common surfactants work?
• What are the important ingredients in soap powder, pool chlorine etc., and what are their roles?
• Formulation of household cleaners.

Consumer Guide to Chemicals:
• What are the chemicals found in common materials and products?
• Food, beverage, medical, pharmaceutical, cosmetic and paper applications.
• The chemistry of swimming pools.

Recommended Reading

HES1610 Concepts of Biology
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, practical classes, web based unit presence • Assessment: Written test (30%), practical reports (20%), written assignments (10%), final examination (40%)

A unit of study in the Bachelor of Health Science (Public and Environmental Health), Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology)/Bachelor of Business and Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives
This unit of study aims:
• To develop an understanding of the fundamentals of biology.
• To gain an understanding of the structure and function of living organisms, their life processes and diversity.
• To provide a strong basis for later applications and extensions of this knowledge in various fields, including biotechnology, human biology and the environment.

At the end of this unit of study students will be able to:
• Demonstrate an understanding of the processes of scientific experimentation, querying and critical analysis, and the significance of these.
• Demonstrate an understanding of the major types of living organisms and the characteristics of and fundamental differences in their body plans/organisation and functions.
• Demonstrate an understanding of the various types of microscopic life forms.
• Demonstrate an understanding of the structures and functions of the major cell and tissue types of higher animals, particularly humans.
• Demonstrate an understanding of the structures and functions of the major cell and tissue types of higher plants.
• Develop a solid understanding of the fundamentals of genetics and reproduction.
• Apply the knowledge of genetics to addressing genetic problems in humans and other organisms, such as pedigree analysis and disease prediction.
• Demonstrate an understanding of the structure, properties and central functions of DNA as the genetic material.
• Gain an introduction to molecular biology/molecular genetics and biotechnology.
• Understand the basic principles of the key biochemical processes utilised by living organisms for acquiring and utilising energy.
• Demonstrate the use of light microscopes in a competent fashion, for investigations of microorganisms, and various animal, human and plant cells and tissues.
• Demonstrate hands-on practical skills in the above areas.
• Appreciate the need for safety precautions in a lab environment.
• Work co-operatively.

Content
• The diversity of life: characteristics of living organisms, the domains and kingdoms of organisms and their characteristics.
• The methods of science: methods of scientific investigation, experimental design.
• The molecules of life: structure and functions of the major types of molecules that make up the living systems: carbohydrates, fats and lipids, proteins, nucleic acids.
• Cells as the fundamental unit of life: the structure and functions of prokaryotic and eukaryotic cells.
• Structures and roles of intracellular organelles.
• The major cell and tissue types in animals, particularly humans, their organisation and functions.
• The major cell and tissue types in plants, their organisation and functions.
• Cell replication: processes of mitosis and meiosis, the significance of each process.
• Introduction to the cell cycle and its regulation.
• Fundamentals of genetics: Mendelian genetics and the extensions/exceptions to it, human genetics, applications of genetic principles: problem solving in plants, animals, humans, pedigree analysis, disease prediction, introduction to linkage.
• Introduction of molecular biology; flow of genetic information: gene structure,
transcription, translation.
  - Fundamentals of the biochemical processes of obtaining and utilising energy, energy storage molecules; enzymes as biochemical catalysts.

Reading Materials
Lecture notes (provided via Blackboard).
Laboratory manual (to be purchased from the University bookshop).

Textbooks
Campbell, NA & Reece, JB, Biology, Ed VI, Benjamin Cummings, USA, 2005.

HES1616 Concepts of Biotechnology
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil but HES1610 (Concepts of Biology) is highly recommended • Teaching methods: Lectures, practical classes, web based unit presence • Assessment: Written tests (25%), assignment (10%), practical reports (20%), final examination (45%)
A unit of study in the Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology), Bachelor of Science (Biology)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology)/Bachelor of Business and Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives
The unit of study aims to provide:
  - An understanding of the basic principles of metabolic processes within the cell and how these processes can be harnessed for biotechnology.
  - An understanding of the central role of the genetic material, DNA, in the flow of genetic information in the cell and in influencing the structural and functional characteristics of organisms.
  - An understanding of some of the basic principles of manipulation of DNA for useful applications in a number of areas such as the environment, medicine and agriculture.
  - Basic knowledge regarding the structure and properties of micro-organisms, including those of clinical, environmental and industrial importance.
  - A variety of laboratory exercises where students can apply their theoretical knowledge to practical situations and demonstrations, in the above areas.

At the end of this unit of study students will be able to:
  - Demonstrate an understanding of the major mechanisms of metabolism, energy exchanges and homeostasis in cells.
  - Recognise the linkage between the structures, chemical properties and chemical processes of certain molecules and macromolecules, and their roles in cells and biological processes, and in certain diseases.
  - Gain an introduction to molecular biotechnology.
  - Demonstrate an understanding of the basic principles of various techniques of genetic analysis and manipulation and biotechnology.
  - Gain an understanding of the applications of biotechnology in diverse fields such as agriculture, medicine and the environment and the significance of these developments.
  - Demonstrate an understanding of some of the social, ethical and legal issues associated with some aspects of biotechnology.
  - Demonstrate an understanding of the diversity of micro-organisms and their characteristic properties, growth and handling.
  - Demonstrate an understanding of their significance in infectious diseases, environmental processes and industrial applications.
  - Demonstrate hands-on practical skills in the above areas.
  - Appreciate the need for safety precautions in a lab environment.
  - Work co-operatively.
  - Record scientific observations correctly and interpret these honestly.

Content
  - Overview of main types of energy transformations within the cell, role of enzymes and their action, rates of metabolic processes. Application of enzymes to biotechnology processes.
  - Microorganisms: overview of broad types of bacteria, viruses, protists and other microorganisms. Growth and handling. Structure, function, modes of replication or transmission of selected bacteria, viruses.
  - Roles of microorganisms in disease, role in environmental cycles, industrial applications of microorganisms, use of microorganisms in biotechnology.
  - Brief overview of classical genetics, Mendelian genetics and variations.
  - Brief overview of DNA structure, the flow of genetic information, DNA replication, gene transcription, protein translation.
  - Principles of major molecular biology and genetic engineering techniques, including restriction enzymes and their uses, major types of cloning vectors, construction of libraries, Southern and Northern blotting, hybridisation, PCR, DNA typing.
  - Applications of above techniques in human health and welfare, medicine, agriculture and the environment. Introduction to the human genome project, gene therapy, molecular diagnostics, forensics, creation and uses of transgenic plants and animals, animal cloning, use of micro-organisms in industrial biotechnology.
  - Introduction to some of the ethical, legal, and social issues and scientific problems associated with the above technologies.
  - Relevant practical exercises in the above areas.

Reading Materials
Lecture notes (provided via Blackboard).
Laboratory manual (to be purchased from the University bookshop).

Textbooks
Campbell, NA & Reece, JB, Biology, 4th edn, Benjamin Cummings, USA, 2002.

HES1628 Professional Skills for Biotechnologists
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Tutorial, Discussion Session, Web Based Presence • Assessment: Written Assignments (60%), Oral Presentations (20%), Workshops and Discussions (20%)
A unit of study in the Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology)/Bachelor of Arts (Media and Communications) and Bachelor of Science (Biotechnology)/Bachelor of Business.

Aims & Objectives
The unit of study aims to provide:
  - An understanding of some of the basic techniques of biotechnology.
  - An understanding of the applications of biotechnology in numerous areas such as agriculture, the environment, animal health, human health and various industries.
  - An introduction to some of the scientific, ethical, moral and legal concerns related to some aspects of biotechnology.
  - Skills required for the students' other professional development, for example, skills in literature search, distinguishing between types of information available (peer-reviewed or otherwise validated information, other types of information), critical analysis of literature, preparing and delivering oral presentations, extensive use of computers, laboratory report writing, scientific essay writing, team work.

At the end of this unit of study students will be able to:
  - Show an awareness of some of the current, global issues and trends related to human health and welfare and the environment.
  - Demonstrate an understanding of the applications and the potential of biotechnology in various fields.
  - Demonstrate an understanding of some of the ethical, moral and legal implications of some of the new trends and developments in biotechnology.
  - Conduct focussed literature search for scientific information on a certain topic, using a number of sources such as scientific journals, databases and websites.
  - Critically evaluate the scientific literature, discuss it and summarise it.
  - Communicate complex ideas and concepts at peer and lay levels, thereby improving communication skills.
  - Demonstrate skills in preparing and delivering oral presentations and written communications of various types.
  - Demonstrate skills in preparing formal, written laboratory reports.
  - Demonstrate team work skills.

Content
The content of this unit is somewhat less formal and more flexible, to reflect the new developments and trends in biotechnology and to accommodate any specific requests from students wishing to enhance a particular skill or explore a specific area. The current unit content is as follows:
  - Participating in a workshop on literature search, in order to gain the skills in conducting various types of search (e.g. searching for literature on a specific topic, or in a specific journal, or by a specific author, searching catalogues of other libraries), accessing the information in peer-reviewed scientific journals,
Aims

During the course we aim:

- To introduce the student to the basic principles of communication, negotiation and conflict resolution skills appropriate to the needs of the environmental health profession.
- To examine the major approaches to social policy and Australian health policy development.
- To review the history of public health in Victoria and the impacts of environmental health.
- To understand the professional role of the environmental health officer in government and industrial settings.
- To study the administrative structure of local and state environmental health and environmental protection agencies, and the application of legislative and policy initiatives available to them.

Content

- Introduction to verbal and non-verbal communication skills, active listening, recognizing conflict situations, methods of interpersonal conflict resolution, assertiveness skills, interpersonal negotiation skills, and stress management.
- Group and individual exercises will allow students to put these principles into practice to develop skills that will be of practical use in the workplace and community environments.
- A review of major theoretical and ideological approaches to social policy, and introduction to key policy issues, such as problem identification, policy implementation, evaluation and monitoring, and an introduction to Australian health policy.
- The history of public health in Victoria and the impact of environmental health on the prevention of spread of disease.
- The professional role and practice of the environmental health officer in government and industry. Career opportunities and development. Concepts of environmental health.
- The administrative structure and role of state and local government agencies involved in environmental health and environmental protection.
- An overview of appropriate legislation, policies and codes.

Reading Materials


HES1710 Philosophy and Practice of Public and Environmental Health

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Group and Individual Exercises • Assessment: Assignments 60%, Tests 40%

A unit of study in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives

- To develop an understanding of the major approaches to Australian health policy development and the history of public and environmental health.
- To develop an understanding of public and environmental health management mechanisms including law, policy, surveillance and monitoring, and health promotion.
- To understand the professional role of the environmental health officer in government and industrial settings.
- To study the administrative structure of local and state environmental health agencies, and the application of legislative and policy initiatives available to them.
- To examine the practice of environmental health including the various tools such as risk assessment, research, ecologically sustainable development.

Reading Materials

Cromar, N, Cameron, S & Fallersfield, H (eds.) (2004), Environmental Health in Australia and New Zealand, Oxford University Press


HES1715 Environmental Measurement

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Demonstrations, Computer Laboratory Practicals • Assessment: Assignments, Examinations

A unit of study in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives

During the unit we aim to:

- Provide basic training in the use of personal computer applications and software relevant to environmental health management.
- Provide an introduction to computer programming using Visual Basic for Applications.
- Introduce measurement concepts and their application to the effective use of relevant mechanical, electrical and scientific instrumentation.
- Provide an understanding of radiation technology and hazard assessment.
- Apply various relevant computer software packages, including MS-Word and MS-Excel.
- Describe concepts of mechanical and electrical technology.
- Demonstrate an understanding of measurement technology, particularly its application to scientific instrumentation used in the monitoring of the physical environment.
- Understand concepts of ionising radiation technology and bio-hazards.
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Content
- Computer hardware, peripheral devices, CPU, Operating systems, Windows, Networks and Internet.
- Application packages such as word processors and spreadsheets.
- Data acquisition from instruments.
- Use of Excel for simulation, data processing and presentation.
- Principles of scientific instrumentation.
- Electrical technology.
- Mechanical and electrical devices with applications.
- Radiation sources: materials and detection.
- Acoustics.

Reading Materials

HES1716 Health Policy and Planning
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Group Work • Assessment: Assignments 60%, Tests 40%
A unit of study in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
- To review current public health policies.
- To introduce and develop an understanding of the concepts and strategies of health promotion including integrated health promotion.
- To examine the social and cultural factors involved in health promotion.
- To understand the health needs applicable to rural, remote and vulnerable groups.

Content
- A review of the key concepts and strategies in community health, early identification, treatment, disease prevention and health promotion strategies.
- Social, cultural and psychological factors involved in health promotion and disease prevention behaviours.
- Health promotion programs. Opportunities, ethical responsibilities and funding.
- Needs Assessment Techniques.
- Program evaluation strategies, performance indicators.
- Municipal Public Health Plans and integrated health promotion.
- Examination and review of local, national and international health promotion policies and programs.

Reading Materials
DHS, Integrated Health Promotion, Department of Human Services, Victoria, 2003.

HES1900 Private Pilot Licence
12.5 Credit Points • 1 Semester • 6 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Classroom • Assessment: Examination 60%, Assessed work 40%, In addition candidates must achieve satisfactory progress in their flight training towards the CASA GPFF to receive a pass in this unit.
A unit in the Bachelor of Technology (Aviation) and Bachelor of Technology (Aviation) / Bachelor of Business.

Aims & Objectives
To provide the student with a basic understanding of flight planning, air law & procedures, navigation theory, meteorology, aircraft general knowledge, aerodynamics and human performance and limitations, sufficient to enable the student to obtain a CASA PPL theory exam credit and to enable practical flying training to the PPL level.
At the completion of this unit students will:
- Know the environmental, engineering, procedural and personal factors that impact on flying operations at the PPL level.
- Be able to achieve the CASA PPL theory exam credit.
- Be able to safely and accurately, plan and monitor flying operations at the PPL level.
- Value the safe and accurate, planning and monitoring of flying operations at the PPL level.

Content
- Flight Planning: Aircraft documentation, airspeed definitions, International Standard Atmosphere (ISA), pressure height calculations, density height calculations (ONH/Temp & declared altitude charts), take-off and landing definitions (CAO 20.7.4), take-off and landing charts (Cessna & Warrior), weight and balance definitions and limitations, Cessna and Warrior weight and balance calculations, Alpha loading system, Bravo loading system, Charlie loading system, CAAP 92.1, unlicensed aerodrome calculations, Critical Point (CP) and Point of No Return (PNR), flight plan preparation, ERSA.
- Air Law & Procedures: Privileges and limitations, aviation documents, pilot licences, flight rules and conditions of flight, air service operations, aerodromes, local airspace, emergencies and SAR, aircraft equipment, carriage of passengers, radio equipment, operation, propagation, practical operation, procedural words and phrases, emergencies and use of transponder, air traffic procedures.
- Navigation: Form of the earth, time zones, universal time co-ordinated (UTC), end of daylight (EoD), beginning of daylight (BoD), charts and publications, computations, pilot navigation, radio navigation aids.
- Aircraft General Knowledge: Terminology, direction, time, vertical measurement and other units. Power plants and systems, fuels and oils, engine icing, engine handling, malfunctions, and flight instruments, hydraulics/landing gear systems.
- Aerodynamics Theory: Lift and drag, flight controls, straight and level flight, climbing, descending, turning, taxi, take off and landing, wake turbulence and thrust stream turbulence.
- Human Performance and limitations: Basic health, health and fitness, hyperventilation, atmospheric pressure changes, basic knowledge of the anatomy of the ear, vision, spatial disorientation, illusions, motion sickness, acceleration 'g' effects, toxic hazards, the atmosphere and associated problems, hypoxia and human factors considerations.

Textbooks
Thom, T, Meteorology and Navigation, Series 2, Aviation Theory Centre.
Thom, T, Aircraft General Knowledge and Aerodynamics, Series 1, Aviation Theory Centre.

References
Civil Aviation Safety Authority, VFR Day Syllabus (as amended from time to time).
Civil Aviation Safety Authority, Aeronautical Information Publication.
Civil Aviation Safety Authority, Operational Notes (CASA), NDB, VOR and DME.

HES1905 Commercial Pilot Licence
12.5 Credit Points • 1 Semester • 6 Hours per Week • Hawthorn • Prerequisite: HES1900 Private Pilot Licence • Corequisite: Nil • Teaching methods: Classroom • Assessment: Examination 60%, Assessed work 40%, In addition candidates must achieve satisfactory progress in their flying training towards the Commercial Pilot Licence level.
A unit of study in the Bachelor of Technology (Aviation) and Bachelor of Technology (Aviation) / Bachelor of Business.

Aims & Objectives
To consolidate the theory taught in HES1900 and to further develop knowledge necessary for the student to obtain the seven, CASA, CPL theory exam credits and to enable practical flying training to the Commercial Pilot Licence level.
At the completion of this unit students will:
- Know the environmental, engineering, procedural and personal factors that
Impact on flying operations at the CPL level.

- Be able to safely and accurately, plan and monitor flying operations at the CPL level.
- Be able to achieve examination credits for all seven CASA CPL theory exams.
- Value the safe and accurate, planning and monitoring of flying operations at the CPL level.

**Content**

- Flight Planning: Climb performance, payload calculations, Echo loading system, floor loading, % Mean Aerodynamic Chord (MAC), shifting weight, adding weight, fuel as ballast, forecast limit.
- Air Law & Procedures: Privileges and limitations of CPL, classification of operations, flight & duty times, Night Visual Flight Rules (NVFR), manifesting, oxygen use, ground operations, emergency equipment, authority of Pilot-In-Command, admission to crew compartment, carriage of examiners.
- Navigation to CPL Standard: Form of the earth, time zones, universal time coordinated (UTC), end of daylight (EDT), beginning of daylight (BST), charts and publications, computations, compounded 180°, complex circular slide rule calculations, pilot navigation, radio navigation aids.
- Aircraft General Knowledge: Propellers, Constant Speed Units (CSU), compasses, gyroscopes, power plants, systems and instruments, turbochargers/superchargers, fire protection, autopilots.
- Aerodynamics: Ground handling, stability and controllability, range and endurance, turning performance.
- Human performance and Limitations to CPL Standard: Basic health, health and fitness, hyperventilation, atmospheric pressure changes, basic knowledge of the anatomy of the ear, vision, spatial disorientation, illusions, motion sickness, acceleration "g" effects, toxic hazards, the atmosphere and associated problems, hypoxia and human factors considerations.

**Textbooks**

Aviation Theory Centre, Meteorology and Navigation, Series 2.
Aviation Theory Centre, Aircraft General Knowledge and Aerodynamics, Series 1.

**References**

- Civil Aviation Safety Authority, VFR Day Syllabus, as amended from time to time.
- Civil Aviation Safety Authority, Civil Aviation Orders, Amendments.
- Civil Aviation Safety Authority, Aeronautical Information Publication.
- Civil Aviation Safety Authority, Operational Notes (CAS), HDB, VDR, and DME.

**HES1906 Commercial Pilot Licence 1**

12.5 Credit Points • Prerequisite: HES1900 Private Pilot Licence • Teaching methods: Classroom • Assessment: Examination: 60%. Assessed Work: 40%

Candidates must in addition achieve satisfactory progress in their flying training towards the CASA PPL to receive a pass in this unit of study.

A unit of study in the Bachelor of Technology (Aviation) and Bachelor of Technology (Aviation) / Bachelor of Business.

**Aims & Objectives**

To consolidate the theory taught in HES1900 and to further develop knowledge necessary for the student to obtain the four of seven, CASA, CPL theory exams.

**Content**

- Aircraft General Knowledge: Propellers, Constant Speed Units (CSU), compasses, gyroscopes, power plants, systems and instruments, turbochargers/superchargers, fire protection, autopilots.
- Aerodynamics: Ground handling, stability and controllability, range and endurance, turning performance.
- Human performance and Limitations to CPL Standard: Basic health, health and fitness, hyperventilation, atmospheric pressure changes, basic knowledge of the anatomy of the ear, vision, spatial disorientation, illusions, motion sickness, acceleration "g" effects, toxic hazards, the atmosphere and associated problems, hypoxia and human factors considerations.

**Textbooks**

Aviation Theory Centre, Meteorology and Navigation, Series 2.
Aviation Theory Centre, Aircraft General Knowledge and Aerodynamics, Series 1.

**References**

- Civil Aviation Safety Authority, VFR Day Syllabus, as amended from time to time.
- Civil Aviation Safety Authority, Civil Aviation Orders, Amendments.
- Civil Aviation Safety Authority, Aeronautical Information Publication.

**HES1910 Human Factors & Communication**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Class Room • Assessment: Examination 50%, Assignments 35%, Presentations 15%

A unit of study in the Bachelor of Technology (Aviation), Bachelor of Technology (Air Transportation Management) Bachelor of Technology (Aviation)/Bachelor of Business, and Bachelor of Technology (Air Transportation Management) / Bachelor of Business.

**Aims & Objectives**

- To develop written, oral, and presentation skills which use available information technology tools.
- To introduce the student to Aviation Human Factors and its importance in the aviation environment.
- At the completion of this subject the student should be able to demonstrate the knowledge and understanding of:
  - Integrating the use of word processing, basic MSAccess, and MS PowerPoint in an actual class presentation
  - Basic Group Dynamics and Group Process
  - The importance of Change Management within an organisation
  - Basic Aviation Human Factors

**Content**

- Structure and Organisation Operation: Types of meetings, chairing meetings, conduct of meetings, roles and responsibilities, organisational cultures, multi-cultural environments.
- Interpersonal Skills: Types of behaviour, teamwork and group strategies, peer learning (learning communities).
- Types of presentation, conflict resolution, oral and written reporting, study skills, role playing, employment interview techniques.
- Information Technology: Role of information technology, use of computers, word processing, Internet, Microsoft. PowerPoint, Access. Excel is covered in Mathematics.
- Aviation Human Factors: Decision making concepts, situational awareness concepts, effects of stress and stress management, workload management, basic error and error management, basic automation management and safety management concepts. Safety culture.

**References**

- Covey, S., The Seven Habits of Highly Effective People, Melbourne Business Library, 1989.
- Hawkins, FH, Human Factors In Flight, 2nd edn, Ashgate, 1993
HES1915 Occupational Health and Safety
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Classroom • Assessment: Examinations 40%, Assessed work 60%
A unit of study in the Bachelor of Technology (Aviation) Bachelor of Technology (Air Transportation Management), Bachelor of Technology (Aviation) / Bachelor of Business; and Bachelor of Technology (Air Transportation Management) / Bachelor of Business

Aims & Objectives
To acquaint students with the occupational health and safety requirements of modern aviation. The unit includes a CASA approved Dangerous Goods course and an treatment of Aviation Medicine.

At the completion of this unit, students will have developed an understanding of Occupational Health and Safety principles ranging from the legislation framework, safety systems and detailed carriage of dangerous goods on aircraft as approved by CASA. Students will also be introduced to aviation medicine and appreciate the human physiological factors affecting safe aircraft operation.

Content
Occupational Safety (16 hours)
• OH&S Models, approaches and System Safety.
• Ergonomics.
• Specific Hazards.

CASA approved Dangerous Goods Course (8 hours)
• The requirements of the Civil Aviation Act and Civil Aviation Regulation as relating to the carriage of dangerous goods.
• Definitions contained in the Technical Instructions relating to dangerous goods, units of measure and conversion factors.
• Items specified as dangerous goods in the Dangerous Goods List contained in the Technical Instructions, items likely to be, or to contain dangerous goods. The classification of dangerous goods. Instructions for the carriage of excepted and limited quantities of dangerous goods. The responsibilities of an operator and shipper as outlined in the Technical Instructions, for packing, marking and labeling of dangerous goods.
• Procedures to be followed by an operator if a dangerous goods incident occurs, including reporting procedures.
• Separation of dangerous goods from other dangerous goods or cargo.
• Documents relating to the carriage of dangerous goods, including notification to pilot. Instructions in an operator’s dangerous goods manual for the handling of dangerous goods consigned for carriage on the operator’s aircraft.

Aviation Medicine (24 hours)
• Aviation Medicine; physics of the atmosphere, human responses to altitude change and asceleration (hypoxia, hyperventilation).
• Special senses: vision, balance, spatial disorientation and Illusions, physiology and pathology of the human ear, noise exposure, audiology, hearing loss prevention. Motion sickness.
• Human Factors: workload, fatigue, memory, motor control.
• Health, drugs, pilot fitness.
• Survival skills: basic procedures, first aid, thirst, hunger, protection from the elements, early recovery, survival equipment.
• Features of land and sea survival.

Textbooks
Campbell & Bragshaw, Human Performance and Limitations, 3rd edn, Blackwell

References
Anon, Dangerous Goods and Regulations, IATA.

HES1920 Private Pilot Licence
12.5 Credit Points • 1 Semester • 6 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Classroom • Assessment: Examination 60%, Assessed work 40%
A unit of study in the Bachelor of Technology (Air Transportation Management) and Bachelor of Technology (Air Transportation Management) / Bachelor of Business

Aims & Objectives
To introduce the student to flight planning, procedures, navigation theory, meteorology, aircraft general knowledge, aerodynamics and human performance and limitations, at the Private Pilot Licence (PPL) level.

At the completion of this unit students will:
• Know the environmental, engineering, procedural and personal factors that impact on flying operations at the PPL level.
• Value the safe and accurate, planning and monitoring of flying operations at the PPL level.

Content
• Flight Planning: Aircraft documentation, airspeed definitions, International Standard Atmosphere (ISA), pressure height calculations, density height calculations (QNH/Temp & declared altitude charts), take-off and landing definitions (CAO 20.7.4), take-off and landing charts (Cessna & Warrior), weight and balance definitions and limitations, Cessna and Warrior weight and balance calculations, Alpha loading system, Bravo loading system, Charlie loading system, CAAP 92.1, unlocked aerodrome calculations, Critical Point (CP) and Point of No Return (PNR), flight plan preparation, ERSAs.
• Air Law & Procedures: Privileges and limitations, aviation documents, pilot licences, flight rules and conditions of flight, air service operations, aerodromes, local airspace, emergencies and SAR, aircraft equipment, carriage of passengers. Radio equipment, performance, propagation, practical operation, procedural words and phrases, emergencies and use of transponder, air traffic procedures.
• Navigation: Form of the earth, time zones, universal time co-ordinated (UTC), end of daylight (EDT), beginning of daylight (EDT), charts and publications, computations, pilot navigation, radio navigation aids.
• Aircraft General Knowledge: Terminology, direction, time, vertical measurement and other units. Power plants and systems, fuels and oils, engine icing, engine handling, malfunctions, and flight instruments, hydraulics/landing gear systems.
• Aerodynamics Theory: Lift and drag, flight controls, straight and level flight, climbing, descending, turning, taxi, take-off and landing, wake turbulence and thrust stream turbulence.
• Human Performance and Limitations: Basic health, health and fitness, hyperventilation, atmospheric pressure changes, basic knowledge of the anatomy of the ear, vision, spatial disorientation, illusions, motion sickness, acceleration ‘g’ effects, toxic hazards, the atmosphere and associated problems, hyposia and human factors considerations.

Textbooks
Aviation Theory Centre, Basic Aeronautical Knowledge (BAK).
Civil Aviation Safety Authority Australia, VFR Flight Guide.

References
Civil Aviation Safety Authority, VFR Day Vyalus, as amended from time to time.
HES1355 Internal Combustion and Gas Turbine Engines

12.5 Credit Points • 1 Semester • 4 Hours per Week plus up to 6 Hours for laboratory classes • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Classroom and laboratory • Assessment: Examination 60%, Assessed work 40%

A unit of study in the Bachelor of Technology (Aviation) Bachelor of Technology (Air Transportation Management), Bachelor of Technology (Aviation) / Bachelor of Business; and Bachelor of Technology (Air Transportation Management) / Bachelor of Business.

Aims & Objectives
To provide students with a thorough understanding of energy systems, heat transfer and thermodynamic applications to Internal Combustion engines. An advanced understanding of the theory and operation of gas turbine engines is also addressed.

At the completion of this unit, students will have developed an understanding of basic thermodynamics as applied to engine systems. Students will have also gained a qualitative and quantitative understanding of both Internal Combustion and Gas Turbine Engines as used in aircraft.

Content
- Basic engineering units and unit conversions
- Heat transfer processes; basic heat exchanger design
- Review of first law of thermodynamics; energy and work transfers, energy equation.
- Gas processes and cycles; applications to internal combustion engines
- Aircraft IC Engine construction and performance characteristics
- Basic Gas Turbine theory
- Characteristics of gas turbine engines and basic thermodynamic analysis
- Compressor and turbine blade design, turbine cooling.
- Gas turbine combustion elements and requirements
- Subsonic intakes
- Thrust reversers
- Thrust augmentation

Textbooks

References
Kerberbrock, JL, Aircraft Engines and Gas Turbines, MIT.

HES1945 Aircraft Electrics and Avionics

12.5 Credit Points • 1 Semester • 4 Hours per Week plus 2 Hours for laboratory classes • Hawthorn • Prerequisites: Nil • Corequisites: Nil • Teaching methods: Lectures 26 hours, Presentations 12 hours • Assessment: Examination 60%, Assignments and Presentations 40%

A unit of study in the Bachelor of Technology (Aviation) Bachelor of Technology (Air Transportation Management), Bachelor of Technology (Aviation) / Bachelor of Business, and Bachelor of Technology (Air Transportation Management) / Bachelor of Business.

Aims & Objectives
To provide an overall knowledge and understanding of aircraft electrical and electronic systems and equipment, including installations and related electrical protection, flight and engine instrumentation, navigation and control systems, electrical power generation, including control and supply. An understanding of communication and navigation systems is provided including LRRA, TCAS and ACAS systems.

At the completion of this unit, students will have developed a fundamental understanding of aircraft electrical and avionic systems. Students will also have an appreciation of the integration of such systems.

Successful completion of this unit should enhance discussion with relevant aviation specialists relating to aircraft operations.

Content
- Introduction to Aircraft Systems
- Aeronautical DC circuits, electron flow, Ohm’s Law, parallel and series circuits, resistance of an electrical conductor.
- Aircraft Wiring Installations.
- Wire type selection, insulation types, shielded and twisted cables, installation and routing, identification, bonding, radio interference.
- Aircraft Electrical Power Systems.
- AC circuits, voltage/time graph, RMS, single & 3 phase, VoltAmp, A/C schematic diagrams, A/C generators, frequency selection (400 Hz.).
- Aircraft Electrical Power Distribution.
- Relays, circuit protection, Bus priority, generator failure, APU generator, external power source.
- HF and VHF Communication Systems.
- Wave modulation, HF frequency range and propagation, HF limitations, VHF frequency range, VHF limitations, incorrect use of HF and VHF.
- Digital Flight Data Recording Systems.
- History and development, method of recording, rate and duration, CVR/DFDR.
- VHF NAV (VOR / LS / MKR), Radar (X Band), antennae design, FLWR systems, basic ATC systems, transponder operation.
- Aircraft Engine Temperature Indication System.
- Thermocouple systems (reciprocating and gas turbine engines), turbine EGT.
- Ground Proximity Warning Systems and Low Range Radio Altimeter Systems.
- LRRA systems (operation and influence of external factors), GPWS (modes and operation), EGPRS.
- Traffic and Collision Avoidance Systems.
- Need for TCAS, interface with other A/C systems, A/C detection, TCAS calls versus GPWS.
- AircCommander and Reporting System (ACARS).
- Cut Off On In, ground time / flight time.

Textbooks

References
CAA Operational Notes on NDB, ADF, DME, VOR, ILS.

HES1950 Private Pilot Licence Practicum

12.5 Credit Points • 52 hours and 16 hours solo flight time • 52 hours and 16 hours solo flight time • Hawthorn • Prerequisite: Nil • Corequisites: HES1900 Private Pilot Licence (may also be undertaken prior to HES1950) Teaching methods: Pre and Post-flight briefing, Practical Flight Instruction in Aircraft and Simulator, Assessment: Practical Examination: 100% Training for the private pilot licence is competency based and while progressive assessment is recorded in the training syllabus the licence is granted on successful completion of the flight test.

Aims & Objectives
To consolidate the theory taught in HES1900 and to integrate this theory into the practical flying training for the Private Pilot Licence.

Content
A minimum of 52 hours and 16 hours solo flight time consisting of a minimum of 34 sessions of general aircraft handling and 11 cross country flight exercises. During the semester, an additional minimum of 1.5 hours pre-flight and post flight briefing is delivered for each of the 11 exercises. Additionally the student will require at least 2 hours per exercise for flight planning and pre-flight preparation.
Reading Materials
GSF VFR Standard Operating Procedures.
GSF Private Pilot Notes.
C172S Pilot Operating Handbook

Textbooks
Nil.

References
Civil Aviation Safety Authority, VFR Day Syllabus
Civil Aviation Safety Authority, Civil Aviation Orders.
Civil Aviation Safety Authority, Aeronautical Information Publication.
Civil Aviation Safety Authority, En Route Supplement Australia.
Air Services, WAC, PCA, VTC, VNC, ENC (Low) and TAC.
Civil Aviation Safety Authority form 077 10/1999 (PPL test form).

HES1955 Commercial Pilot Licence Practice 1
12.5 Credit Points • 24 hours dual instruction and 20 hours solo flight time. • 24 hours dual instruction and 20 hours solo flight time. • Hawthorn • Prerequisite: HES1950 Private Pilot Licence Practice 1 • Corequisite: HES1950 Commercial Pilot Licence 1 HES2901 Commercial Pilot Licence 2 (may also be undertaken prior to HES1955) • Teaching methods: Pre and Post-flight briefing Practical Flight Instruction on Aircraft and Simulator • Assessment: Practical Examination: 100% Training for the Private VFR rating is competency based and while progressive assessment is recorded in the training syllabus, the licence is granted on successful completion of the flight test.

Aims & Objectives
To consolidate the procedural aspects of cross country flight and instruct the student in visual flight training. Additionally the student will undertake aerobatics training designed to provide a sound foundation for upset flight recovery. A significant portion of command flight time will be accrued during this phase.

Content
A minimum of 24 hours dual instruction and 20 hours solo flight time. Comprising of Command flight, Night Visual Flight Rules (NVFR) training and Aerobatics. During this phase, an additional 20 hours minimum pre-flight and post flight briefing is delivered. Additionally the student will require at least 20 hours for flight planning and pre-flight preparation for cross country command sequences.

Reading Materials
GSF VFR Standard Operating Procedures.
GSF Commercial Pilot Notes.
GSF Aerobatic Notes.
GSF Global Positioning System Notes.
C172S Pilot operating Handbook
Bellanca BKCAB Pilot Operating Handbook

Textbooks
Nil.

References
Civil Aviation Safety Authority, VFR Day Syllabus
Civil Aviation Safety Authority, Civil Aviation Orders.
Civil Aviation Safety Authority, Aeronautical Information Publication.
Civil Aviation Safety Authority, En Route Supplement Australia.
Air Services, WAC, PCA, VTC, VNC, ENC (Low) and TAC.
Civil Aviation Safety Authority form 066 01/2003 (NVFR test form).

HES2120 Structural Mechanics
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: HES1125 Mechanics of Structures • Corequisite: Nil • Teaching methods: Lectures; Tutorials; Laboratory Projects • Assessment: Examinations, Laboratory Projects, Tests

Aims & Objectives
During the course, we aim to:
• Develop an understanding of structural and material behaviour.
• Develop skills in analysis of statically determinate and indeterminate structures.
• Understand basic design formulae against structural and material failure.
At the completion of this unit, students should be able to:
• Develop an understanding of structural and material behaviour.
• Analyse statically determinate and indeterminate structures.
• Apply the failure theories in design simple structures and machine components.

Content
• Structural behaviour (8%): Modeling of structures; equilibrium, statical and kinematical determinacy; stability of structural form; loads on structures; load paths.
• Section properties (17%): Centroids, second moment of area, section modulus, principal axes.
• Stress and strain (17%): Distributions in beams; elastic and plastic behaviour plastic section modulus. Failure theories: maximum shear stress (Tresca) maximum principal stress (Rankine) and maximum shear strain energy (Von Mises). Principal stresses, Mohr's circle. Behaviour of composite structures.
• Structural theories (17%): Concept of work, conservation of energy, principle of virtual work, energy methods and moment area methods.
• Statically determinate structures (17%): Analysis for reactions, shear force, bending moment and axial force diagrams for beams and frames; analysis of trusses. Deflection of beams.
• Statically indeterminate structures (17%): Analysis for reactions, shear force and bending moment diagrams for beams and frames. Deflection of beams.
• Column buckling (7%): Euler buckling. Design formulae for Euler buckling.

Textbooks

References

HES2125 Design of Concrete Structures
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn, Sarawak • Prerequisite: HES1125 Mechanics of Structures, HES2120 • Teaching methods: Lectures (24 hours); Tutorials (20 hours); Assignments (4 hrs) • Assessment: Examination (70%), Concrete Design Project (20%), Lab Report (5%), Test (5%)
A unit of study in the Bachelor of Engineering (Civil Engineering) and Bachelor of Engineering (Civil)/Bachelor of Business

Aims & Objectives
The aims of this unit are to:
• Develop the ability to recognise indeterminate structures and analyse them using manual methods.
• Allow the students to develop the appreciation for design.
• Provide the opportunity for the students to apply their analysis skills in developing simple conceptual designs.
• Equip students with knowledge on reinforced concrete properties and behaviour.
• Provide theoretical models for students to be able to design reinforced concrete members in accordance with relevant Australian Standards.
• Give the students, through a team project exercise, the opportunity to develop their design skills and also their team and time management skills.

Content
Analysis of Indeterminate Structures
• Idealisation of structures and determination of degree of statical indeterminacy.
• Elastic beam theory and virtual work method.
• Flexibility method for analysis of indeterminate beams and frames.
• Moment distribution method.

Design Philosophy
• Purpose of structure, design requirements and design process.
• Limit state design and working stress design methods.
• Regulations (Building Code of Australia - BCA) and standards.
• Types and definitions of loads in accordance with AS/NZS 1170.
• Structural elements, structural systems and structural forms.

Concrete Technology
Aims & Objectives
During the course we aim to:

- Provide the students with sufficient Surveying knowledge to appreciate the importance and precision of measurement.
- Analyse a data set and to make the necessary decision to accept or reject the said data.
- Undertake the necessary calculations to prove or disprove data accuracy.
- Undertake field exercises and apply the survey theory and computations in a practical manner.

At the end of this unit the students will be able to:

- Measure a distance to an accuracy of 1:6000 or better.
- Measure an angle or bearing to an accuracy of 10" or better.
- Be able to cope with practical data.
- Be able to collect data and process it.

Content

- Types of Survey and required accuracies and precisions
- Levelling
- Contouring
- Angles and Bearings

- Measurement Principals and application
- Data collection using Electronic Total Station
- Digital data processing

Reading Materials

- HES2131 Topographical Engineering: Tutorials and Practical Notes, Swinburne University Press (reviewed annually).
- HES2137 Topographical Engineering: Lecture Series, Swinburne University Press (reviewed annually).
- Survey Field Book (Student Bookshop).
- Full scientific alpha-numeric calculator.

References


HES2136 Road Engineering

- 12.5 Credit Points • 1 Semester • 56 Hours • Hawthorn, Sarawak • Prerequisite: 100 credit points • Corequisite: Nil • Teaching methods: Lectures (24 hrs); Tutorials (22 hrs); Laboratories (10 hrs) • Assessment: Examination (60%), Team-based Projects; Lab Reports & Tutorial Exercises (40%)

Aims & Objectives

During the course we aim to:

- To provide a variety of practical laboratory experiences where students can apply their theoretical knowledge to practical situations.
- Identify the major themes within the subject area and identify current best practice research and literature.
- Understand (and be able to explain) the factors involved in decision-making during design.
- To develop mathematical knowledge and skills appropriate to the content area.
- To develop an understanding and learn about:
  - The principles and practice of geometric road design, users’ safety and comfort, water sensitive design.
  - Typical construction sequence, operations and equipment for earthworks associated with a conventional flexible pavement.
  - The environmental effects of erosion resulting from earthworks and road construction and learn about methods of controlling erosion and drainage works.
  - Common material properties and testing associated with pavement materials, common methods and applications of stabilisation.

At the end of this course students will be able:

- To undertake basic design, cross-section, vertical and horizontal geometry, both by hand and using Terramodel software.
- To be able to calculate associated earthworks, produce and analyse mass haul diagrams.
- To become familiar with the latest practices described in local (Vicroads) and national (Austroads) standards/guidelines for designing urban and rural road geometry.
- To develop understanding of the principles of sustainable road design and development and the effects of material properties, construction and design standards on road performance and operation over its design life and the environment including social.
- To demonstrate an understanding of the properties and applications of road materials and the effects of traffic loading and the environment on their performance.
- To demonstrate and articulate the effect of moisture content on soil’s dry density under the same compaction effort.
- To recognise and describe the process of road drainage system construction, the appropriate equipment and controls of erosion during earthworks.
- To independently organise a team to achieve specified objectives within time constraints.
- Demonstrated ability to articulate their understanding (report-writing) of the basic design principles and the impacts of their selection of the different design elements/parameters on the users and the environment.
Content
- Road elements and Design (65%): Terminology and design of road sections, road classification, drainage structures, basics of road design and computer-aided road design, design vehicles, design speed, stopping sight distance, co-ordination and computations related to horizontal and vertical elements in road design (horizontal and transition curves, vertical curves); cut and fill balance; applications in design project, overcoming opportunity.
- Road Construction and materials (35%): Earthwork equipment and operation, compaction theory, road construction sequence, drainage and environmental issues, stabilisation, properties and testing of crushed rock and asphalt.

Textbooks
Subject notes posted on Blackboard

Recommended Reading

HES2146 Computer Aided Engineering
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: HES1300 (Mechanical Students) HEF1000 (Civil Students) • Corequisite: Nil
Teaching methods: This unit will be delivered in a computer laboratory. Online tutorials or student handbooks will be used to instruct students how to use the software studied. Assessment: Assignments, Class Participation, Computer Software Tests, CAD (50%), Computer Application (50%)
A unit of study in the Bachelor of Engineering (Mechanical Engineering), Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business, Bachelor of Engineering (Civil Engineering) and Bachelor of Engineering (Civil Engineering) / Bachelor of Business.

Aims & Objectives
During the course we aim:
- To develop the ability to prepare computer models of parts, assemblies and mechanisms using a CAD system.
- To develop abilities in the use of computer software in solving engineering problems and documenting the result.
At the completion of this unit, students should be able to:
- Create 3-dimensional computer models of parts.
- Produce engineering drawings according engineering standards.
- Create mathematical models using standard software eg excel, mathematica.
- Implement computer aided solutions on simple engineering problems.
- Prepare written / graphical reports on simple engineering problems.

Content
CAD (50%)
- Introduction to CAD, the screen, menus, toolbars, commands, drawing elements, editing, filing, printing.
- Creation of 3D parametric models of parts using solid modelling.
- Assembly of parts with constraints.
- Mechanism modelling and kinematic modelling.
- Introduction to surface modelling.
- Preparation of engineering drawings to industry standard.
Computer Application (50%)
- Computer software applications eg excel, mathematica, word, powerpoint.
- Specialised computer software applications eg spacegas, terramodel.

Reading Materials
All material to be covered will be delivered by online and printed tutorials. However, students are encouraged to explore the Internet for relevant information regarding applications of this part of the unit. An area such as computer applications in engineering is mandatory in today's industry and students should take every opportunity to further their knowledge through journals, publications, exhibitions and other suitable sources of information.

HES2155 Geomechanics
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HES2120 • Corequisite: Nil • Teaching methods: Lectures (24 hrs); Tutorials (18 hrs); Laboratory (6 hrs); Assessment: Laboratory Practical Test (5%), Examinations (50%), Investigation Project (10%), Research Assignment (10%), Oral presentation (10%), Class Tests (15%)
A unit of study in the Bachelor of Engineering (Civil Engineering) and Bachelor of Engineering (Civil Engineering) / Bachelor of Business

Aims & Objectives
To introduce students to basic geology, geological principles, engineering properties of soils and their importance to civil engineering projects. Students should be able to identify rock/soil specimens, construct simple geological cross sections, carry out a basic site classification, and determine strength and compressibility parameters of soils.
At the end of this subject, students should be able to:
- Demonstrate an understanding of the rock cycle and identify common rock forming minerals, basic types of igneous, sedimentary and metamorphic rocks in the field.
- Read and understand geological maps as well as construct geological cross-sections.
- Determine the physical engineering properties of sediments (soils) and apply these quantities to phase relationships.
- Undertake a mechanical analysis of a sediment and perform Atterberg limits on the fine fraction in order to classify sediments to Australian Standards AS1726.
- Understand the basic concepts of water flow through soil to construct a simple flow net and perform the relevant flow calculations.
- Clearly understand the effective stress concept in soils by calculating total stresses, effective stresses and pore pressures within layers of soil.
- Calculate the changes in stress resisted by soil due to external point loads, line loads and loaded areas.
- Determine a soil's strength parameters from a range of physical field and/or laboratory tests.
- Understand the principle of settlement and the distinct difference between immediate settlement and consolidation.
- Be able to simulate external soil loadings to calculate potential immediate settlements and consolidation settlements.

Content
Basic Geology and Geological Mapping (20%)
- Introduction to Geology, Geomechanics and Geotechnical Engineering and their role in Civil Engineering projects.
- The Rock Cycle - the role of magmas, the formation and identification of igneous rocks, the weathering process, formation of sediments, formation and identification of sedimentary rocks, and the formation and identification of metamorphic rocks.
- Basic Structural Geological Formations and Basic Geological Mapping.
- Brief Geological Overview of Victoria and Melbourne areas.

Engineering Properties and Classification of Soils (20%)
- Definition of Soil (Clay, Silt, Sand, Gravel, Cobble and Boulders) as per Australian Standard.
- Structure of Soil by Phase Relationships, including Weight - Volume Relationships, Water Content, Void Ratio, Porosity, Degree of Saturation, and Specific Gravity
- Mechanical Analysis of Soil (particle size determination) and classification of coarse-grained soils.
- Consistency of fine grained soils by index tests and classification of fine grained soils.
- Overall Soil Classification in accordance with Australian Standard: AS1726-1993.

Soil Hydraulics (10%)
- Water flow through soils, including the Bernoulli's principle and the determination of soil permeability coefficients from field and laboratory methods.
- Basic flow net analysis.
- Geostatic Stresses and the Shear Strength of Soil (30%)
- Effective Stress Law (Total Stress, Effective Stress and Pore Pressures).
At the completion of this unit, students should be able:

- Stresses in a Soil Mass - caused by point loads and loaded areas.
- Normal and Shear Stress on a Plane: Pole Method and Mohr-Coulomb Failure Criteria. Laboratory and Field Tests to Determine Shear Strength of Soils: Direct Shear Test, Unconsolidated Undrained Triaxial Test, Consolidated Drained Triaxial Test.
- Consolidated Undrained Triaxial Test, Unconfined Compression Test, Vane Shear Test and Penetrometer Tests.
- Compressibility of Soils (20%)
- Immediate Settlement based on Elastic Theory.
- Consolidation Theory and One-Dimensional Consolidation Test.
- Consolidation Settlement, Time Rate of Consolidation and Coefficient of Consolidation.

Textbooks

References

HES2230 Engineering Materials
12.5 Credit Points • 1 Semester • 52 Hours • Hawthorn • Prerequisite: HES1230
Materials and Processes • Corequisite: N/A • Teaching methods: Lectures (36 hours); Tutorials (12 hours); Laboratory (4 hours) • Assessment: Oral Presentation (10%), Examination (70%), Lab Reports (10%), Written Assignments (10%)

A unit of study in the Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Business, Bachelor of Engineering (Biomedical Science), Bachelor of Science (Biotechnology), Bachelor of Engineering (Mechanical Engineering)/Bachelor of Engineering (Mechanical)/Bachelor of Business, and Bachelor of Engineering (Product Design Engineering)

Aims & Objectives
During the course, we aim:

- To impart to students the basic science and technological knowledge to allow them to design and select metallic and/or non-metallic materials on the basis of properties and their modification through conventional and advanced processing methods.
- Expand student awareness of failure in materials and thereby develop an understanding of methods of strengthening in all major classes of materials and of modern concepts underpinning fracture mechanics.
- Through extensive use of case studies introduce students to advanced methods of processing which lead to greater cost effective use of materials and their potential for recyclability.
- To expand student knowledge of structure/property correlations particularly in relation to the introduction of advanced materials and advanced processing methods.
- To demonstrate and explore through the use of practical laboratory experience the effects of processing on structure/property relations and the effect of geometry on failure.
- To challenge students in small groups to research case studies in which the structure/property relations of materials have significantly affected the final performance (or failure) of a component and have their findings peer group assessed.

At the completion of this unit, students should be able:

- To describe the basis on which all major classes of materials both metallic and non-metallic are selected.
- To identify the origins of microstructure through a basic interpretation of phase diagrams, and thereby explain the effect of microstructure on properties.
- On the basis of appropriate experiment, calculate the mechanical properties of a wide range of materials.
- To carry out a basic failure analysis and, where required, make life estimations based on critical crack length.
- To cover advanced methods of surface engineering, ceramic processing and use of composite materials in making materials selection.
- Through an awareness of the science and technology of the joining of materials, select an appropriate method of joining and comment on any advantages and disadvantages that might be associated with the selected method.

Content
Ferrous and Non-Ferrous Metals (33%):
- Review of major production methods of cast iron and steel: Blast furnace, basic oxygen steel, electric arc, steel recycling.
- Phase diagrams: isomorphous, eutectic and iron-carbide, atomic structure of iron, solid solution.
- Cast Iron: grey, white, nodular, structure/properties, applications.
- Plain carbon steels: structure/properties, applications as a function of carbon content, inclusions.
- Isothermal transformation diagram, cooling curves, martensite, tempering.
- Case studies in modern steel making: nodular, high strength low alloy steel (HSLA), electro-slag refined steel (ESR), tool steels.
- Aluminium alloys, specification for cast/wrought alloys, applications.
- Strengthening of Aluminium alloys: cold work, solid solution strengthening, age hardening.

Joining of Metals (8%):
- Soldering: Lead/tin phase diagram, structure/properties as function of composition, role of fluxes.
- Brazing: Copper/zinc phase diagram.
- Welding of steel: method of fusion welding, critical metallurgical issues, carbon equivalent, case examples.

Surface Engineering (9%):
- Infusion techniques: thermal hardening using flame, induction, lasers, shot peening, residual stress, thermochemical diffusion, carburising, transformation hardening, case/core refining, nitriding, precipitation hardening, microstructure, gas/particle treatments.
- Surface Coating: electroplating, electrochemistry, decorative/industrial applications, thermal spraying, methods, microstructure/properties/applications; chemical/physical/vapour deposition, ceramic coatings, vacuum technology, unique properties.

Ceramic Materials (8%):
- Review of conventional ceramics: porcelain, glaze, applications.
- Advanced ceramics: review atomic structure in AX compounds, bonding, physical and mechanical properties.
- Case studies in advanced ceramics: optical applications, superconductivity, heat shields, tooling.

Polymers (16%):
- Major classes of industrials polymers, thermoplastics, thermosets and elastomers, amorphous and crystalline polymers, Tg, physical properties.
- Visco-elastic behaviour, mechanical properties, deformation and fracture.
- Polymer degradation and environmental failures.
- Adhesive joining of polymers.

Composites (10%):
- Particle reinforced composites, concrete, fibre phase, fibre orientation/length, stress/strain behaviour.
- Matrix phase, polymer, metals, ceramic and carbon.
- Classical strength, iso-stress, iso-strain, crack deflection.

Failure of Materials (16%):
- Static failure of materials.
- Fracture mechanics, concept of stress intensity, modes of crack opening.
- Fatigue failure, fatigue/deflection, life simulation.

Textbooks

References
HES2280 Manufacturing Technology 1
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures (36 hrs); Tutorials (18 hrs); Laboratory (6 hrs) • Assessment: Assignments (20%), Examination (60%), Laboratory Reports (20%)

A unit of study in the Bachelor of Engineering (Mechanical Engineering) Bachelor of Engineering (Mechanical)/Bachelor of Business, and Bachelor of Engineering (Product Design Engineering)

Aims & Objectives
During the course, we aim:

- To provide a general understanding of the range of modern production techniques in the manufacturing industry.
- To provide a variety of practical laboratory experiences to reinforce the theory.
- To introduce the basic principles of design of metal and plastics components and tooling in manufacturing industries.
- To introduce the concept of quality and measurements and their importance in manufacturing industry.

At the completion of this unit, students should be able to:

- Demonstrate knowledge of the range of manufacturing processes available.
- Select and/or use mathematical knowledge and skills to calculate the mechanical properties in a range of manufacturing processes.
- Apply statistical quality control principles to improve the quality of product and comment on a product attributes based on quality assessment.
- Demonstrate an understanding of polymer and composite material, manufacturing and the characteristics of major plastic and composite products.
- Understand the importance of economic factors when considering the application of a manufacturing process.

Content
- Manufacturing processes (12%): Casting and forming of metals, powder metallurgy, polymer products, material removal processes, guidelines for component and tooling design, manufacturing technologies, environmental impacts and measures developed for cleaner production.
- Material removal processes (20%): Chip formation, comparison of machining processes, calculations in machining, tool wear mechanisms, tool life, economics.
- Polymers in manufacturing (12%): Forming and moulding techniques, extrusion and injection moulding; effect of process parameters.
- Manufacturing automation (16%): Numerical control, fundamentals of CNC programming, role of robotics in increasing efficiencies.
- Design of components (12%): Sand casting, die casting, plastic moulding, die forging: precision, sheet metal forming, welding.
- Design of tools for forming processes (16%): Forging, deep drawing, sheeting, extrusion, selection of cutting tools, die sets design for metal forming and plastic moulding dies.

Textbooks

References

HES2281 Materials and Manufacturing 1
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: HES1230 • Corequisite: Nil • Teaching methods: Lectures, tutorials, laboratory, assessment: Class presentations, Assignments, Examinations, Lab Reports.

A unit of study in the Bachelor of Engineering (Mechanical Engineering) Bachelor of Engineering (Mechanical)/Bachelor of Business, and Bachelor of Engineering (Product Design Engineering)

Aims & Objectives
- To develop the knowledge of processes used in the manufacture of sheet and bulk formed metal, manufacture of plastic products and machined components.
- To develop awareness and skills in the analysis of process parameters in order to achieve quality and productivity in the application of metal forming and polymer processes.
- To develop an appreciation of materials selection, design and application based on their properties and performance.

Content
Ferrous, Non-ferrous Metals and Ceramics:
- Production of cast iron/steel, blast furnace, basic oxygen steel making, electric arc.
- Fe-Fe3C phase diagram, plain carbon steel, cast iron.
- Microstructural phase constituents, structure/property relations.
- Joining of metals, soldering, brazing, welding.
- Aluminium alloys, roddes of strengthening, heat treatment, microstructure property relations.
- Polymers and composites: manufacture and processes:
  - Crystalline and amorphous microstructures, physical properties.
  - Mechanical properties of polymers and composites.
  - Classical strength, isotress, isostain.
  - Rheological equations of state for ideal-elastic and solid viscoelastic materials.
  - Newtonian fluids, Non-Newtonian fluid flow, variation of viscosity and composites materials.
- Forming and moulding techniques, extrusion and injection moulding: effects of process parameters.
- Blow moulding: output die requirements, parisons dimensions, swelling considerations.
- Film moulding: output die requirements, material output consideration, freeze line analysis.

Material removal processes:
- Chip forming processes, machining, grinding.
- Tool wear, Taylor tool life, tool wear mechanisms.
- Tool materials, HSS, carbide, Surface coating.
- Surface integrity, economics.
- Non-traditional material removal processes.

Manufacturing automation:
- Numerical control, fundamentals of CNC programming, role of robotics in increasing efficiency, CAD/CAM.

Quality and measurements:
- Metrology: standards of accuracy, linear, thread, gear, angular measurements, measurement of surface roughness, roundness, flatness.
- Laboratory Experiments:
  - Tool life in machining, polymer extrusion, heat treatment and metrology.

References
HES2310 Machine Dynamics 1
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: HEMS112 Engineering Mathematics 2 • Corequisites: Nil • Teaching methods: Lectures (36 hrs); Tutorials (24 hrs) • Assessment: Examination (75%), Tests (25%)

A unit of study in the Bachelor of Engineering (Mechanical Engineering), Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business, Bachelor of Engineering (Product Design Engineering) Bachelor of Engineering (Robotics and Mechatronics), and Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering)

Aims & Objectives
During the course we aim to:
- To derive, as with other engineering units, satisfaction and enjoyment from the exploration and special understanding of the physical world that is available only to engineers.
- To develop the ability to analyse and solve problems involving particles and rigid bodies in plane motion.
- To develop the ability to analyse and solve problems involving particles and rigid bodies in plane motion.
- Be prepared to study higher-level machine dynamics (Machine Dynamics 2).

Content
Dynamics of a particle (25%)
- A review of rectangular motion.
- Plane curvilinear motion.
- Use of rectangular, polar and normal-tangential coordinates in plane motion.
- Use of Newton’s second law in plane motion.
- Euler motion using work and energy, impulse and momentum.

Rigid body dynamics (50%)
- Relative velocity, instant centres, relative acceleration.
- Dynamic analysis of simple mechanisms.
- Rigid body translation: fixed axis rotation.
- Rigid body plane motions: force, mass, acceleration.
- Rigid body plane motion using work and energy principle.
- Rigid body plane motion using impulse and momentum principle.

Kinematics of mechanisms (25%)
- Degrees of freedom, types of motion, links, joints and kinematic chains.
- Linkage transformation, intermittent motion, inversion, the Grashof condition, linkages of more than four bars, practical considerations.
- Quick return mechanisms.

Textbooks
Norton, RL, Kinematics and Dynamics of Planar Machinery, Prentice-Hall.

References

HES2330 Thermodynamics 1
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HEMS112 Engineering Mathematics 2 • Corequisites: Nil • Teaching methods: Lectures, Tutorials, Laboratory and Assignments • Assessment: Examinations, Labs, Class Tests

A unit of study in the Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Business, Bachelor of Engineering (Biological and Electronic Engineering) Bachelor of Engineering (Mechanical Engineering) and Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business

Aims & Objectives
During the course we aim to develop:
- A basic understanding of thermodynamics.
- An appreciation of the design principles in thermo-fluid systems.
- The ability to analyse existing thermo-fluid systems and contribute to new designs.
- The ability to analyse existing thermo-fluid systems and contribute to new designs.

At the end of this unit students will:
- Demonstrate a basic understanding of thermodynamics.
- Have an appreciation of the design principles in thermo-fluid systems.
- Have the ability to analyse existing thermo-fluid systems and contribute to new designs.

Content
- First Law of Thermodynamics (12%): Heat, work system, units, state of a working fluid, reversibility, conservation of energy, the non-flow equation, steady-flow equation.
- The Working Fluid (8%): Liquid, vapour, gas, vapour tables, perfect gases.
- Reversible and Irreversible Processes (8%): Reversible non-flow processes, reversible adiabatic non-flow processes, polytropic processes, reversible steady flow processes, irreversible processes.
- The Second Law (8%): The heat engine, entropy, the T-s diagram, processes on the T-s diagram, entropy and irreversibility, exergy.
- The Heat Engine (8%): The Carnot cycle, the constant pressure cycle, the air standard cycle, the Otto cycle, the Diesel cycle, mean effective pressure.
- Steam Cycles (16%): The Rankine cycle, superheat, the enthalpy-entropy chart, reheat, regeneration, plant efficiency.
- Gas Turbine Cycles (16%): The gas turbine cycle, intercooling, reheating, heat regenerating.
- Positive Displacement Machines (8%): Reciprocating compressors, clearance, multi-stage compression, steady-flow analysis, rotary machines, vacuum pumps, air motors.
- Reciprocating Internal Combustion Engines (8%): Four stroke, two stroke, other types, performance, efficiency, fuel systems, supercharging, emissions and legal requirements.
- Refrigeration and Heat Pumps (8%): Reversed heat engine cycles, vapour compression cycles, refrigerating load, the pressure-enthalpy diagram.

Textbooks

References

HES2340 Fluid Mechanics 1
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: HEMS112 Engineering Mathematics 2 • Corequisite: Nil • Teaching methods: Lectures, Tutorials, Laboratory Assignments • Assessment: Examinations, Labs, Class Tests

A unit of study in Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Business, Bachelor of Engineering (Biotechnology)/Bachelor of Science (Biotechnology), Bachelor of Engineering (Civil Engineering), Bachelor of Engineering (Civil Engineering) / Bachelor of Business, Bachelor of Engineering (Mechanical Engineering) and Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business

Aims & Objectives
During the course we aim to:
- To develop the fundamentals of fluid mechanics.
- To develop an appreciation of the design principles in fluid systems.
- To develop the ability to analyse existing fluid systems and contribute to new designs.

At the end of this unit students will:
- Demonstrate an understanding of the fundamentals of fluid mechanics.
- Demonstrate an appreciation of the design principles in fluid systems.
- Demonstrate the ability to analyse existing fluid systems and contribute to new designs.

Content
- Fluid Properties (10%): Density, specific weight, specific gravity, enthalpy, viscosity, heat capacity, internal energy, elasticity, vapour pressure.
- Fluid Statics (10%): Static pressure, dynamic pressure, total pressure, gauge pressure, absolute pressure, pressure heights, manometry.
- Fluids in Motion (8%): Lagrangian and Eulerian viewpoints, streamlines, uniform and non-uniform flow, steady and unsteady flow, 1-D, 2-D and 3-D flows, flow rate and continuity, flow acceleration, continuity equation, rotation.
and vorticity, separation, vortices & turbulence.

- Pressure Variation in Flowing Fluids (5%): Variations due to weight and acceleration, Euler’s equation, Bernoulli’s equation, separation and its effect on pressure variation, cavitation, applications. Hydraulic and energy grade lines.

- Momentum Principle (16%): Momentum equation, application of the momentum equation, forces on nozzles and bends, moment of momentum, introduction to the Navier-Stokes equations.

- Flow Measurement (6%): Orifice, anemometers, venturi meters, weirs.

- Dimensional Analysis & Similarity (8%): Dimensions in equations, Buckingham PI theorem, common dimensionless numbers, similitude and model analysis, pressure coefficient.

- Flow in Conduits (16%): Shear stress distribution across a pipe section, laminar & turbulent flow in pipes, criteria for laminar and turbulent flow, resistance, Moody diagram, empirical relationships, primary and secondary losses, pipe systems, pipe networks, non-circular conduits.

- Channel flow (16%): Uniform flow, specific energy, Froude number, hydraulic jump, gradually-varied flow.

Textbooks

References

HES2510 Investigative Chemistry Prac 1
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: HES1525 Chemistry 2 or HES1555 Consumer Science • Corequisite: Nil • Teaching methods: Laboratory Classes, Lecture, Web based presence • Assessment: Reports (50%) Demonstrator assessment (30%) Laboratory test (12%) and Written test (8%)

A unit of study in the: Bachelor of Science (Biochemistry), Bachelor of Science (Biotechnology), Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology)/Bachelor of Business, Bachelor of Science (Psychology)/Biochemistry.

Aims & Objectives
During the unit of study we aim:

- To build upon the first-year practical chemistry base.
- To extend investigative skills, techniques in basic organic chemistry and the safe handling of hazardous materials.
- To learn to use appropriate laboratory equipment and instruments.
- To prepare for industry-based learning.
- To extend students’ knowledge of thermodynamics to a mature view.

Content
Experiments will be performed using organic chemicals which expose students to the following techniques: extraction, distillation, purification, Instrumental analysis, macroscopic and microscale synthesis, chromatography and identification of unknown substances.

Industry-Based Learning (IBL) Orientation:
- Preparation of a written technical report in a specified journal format and a full resume for IBL employers.
- Orientation to Occupational Health and Safety (OH&S) legislation and issues.
- Talks on Intellectual Property and Patents and quality issues (TQM, GLP, GMP).

Reading Materials

HES2520 Chemistry 3
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: HES1525 Chemistry 2 or HES1555 Consumer Science plus organic chemistry. Organic chemistry can be either a pass in the organic chemistry section of HES1525 or a pass in the self-paced organic chemistry module available through the Unit of Study convenor of HES1525 or through the Program Manager • Teaching methods: Lectures, practical work and assignments • Assessment: Each topic is worth 20% and all topics will have an examination. Some topics may also include a contribution from an assignment/laboratory work. One or two topics will be examined during the semester.

A unit of study in: Bachelor of Science (Biochemistry)/Chemistry), Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology)/Bachelor of Business, Bachelor of Science (Psychology)/Biochemistry.

Aims & Objectives
During the unit we aim:

- To develop an understanding of the principles of phase equilibria and their application to common methods of purification.
- To further develop basic organic chemistry knowledge.
- To interpret inorganic principles for main group and transition metal elements and compounds.
- To quantitatively interpret chemical information presented in a spreadsheet and on a graph.

- To extend students’ knowledge of thermodynamics to a mature view.

Content
Thermodynamics:
- Revision of enthalpy, heat capacity and the Kirchoff equation, the second law of thermodynamics, entropy, free energy and spontaneity.
- Projection of spontaneity predictions to alternative temperatures.
- Calculation of equilibrium constants from tabulated data.
- Chemical potentials.
- Available work.

Phase Equilibria:
- Chemical potentials, spontaneous diffusion and stable phases.

- The Gibbs’s Phase Rule, the lever rule, one and two component phase diagrams, fractional and steam distillation, solvent evaporation, melting point test for purity, fractional crystallisation and zone refining.

Organic Chemistry:
- Acidity and basicity.
- Strength of acids and bases.
- Keto-enol tautomerism, Carbanions.
- Carbonyl -substitution and condensation reactions.
- Willig reaction.
- Applications to synthesis.

Inorganic Chemistry:
- Periodic trends in atomic properties.
- Bonding, structure, and physical properties.
- Thermodynamic and kinetic principles.
Thermochemical cycles.
- Acid-base and redox data.

Computers in Chemistry:
- Common personal computer software packages, concentrating on Excel.
- Applications involving the simulation of chromatographic resolution and kinetics using Excel.

Reading Materials

HES2526 Organic Chemistry
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: HES1525 Chemistry 2 or HES1555 Consumer Science plus organic chemistry * * organic chemistry can be either a pass in the organic chemistry section of HES1525 or a pass in the self-paced organic chemistry module available through the Unit of Study convenor of HES1525 or through the Program Manager. * Corequisite: Nil • Reaching methods: Lectures, Laboratory Classes, Web Based Unit Presence (Blackboard). • Assessment: Laboratory Reports, Demonstrator Assessment, Laboratory Test, Examinations
A unit of study in the Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology) / Bachelor of Arts (Media and Communications) and Bachelor of Science (Biotechnology) / Bachelor of Business, Bachelor of Science (Psychology and Biochemistry).

Aims & Objectives
During the unit of study we aim:
- To develop basic organic chemistry knowledge.
- To build upon the first-year practical chemistry base.
- To extend investigative skills, techniques in basic organic chemistry and the safe handling of hazardous materials.
- To learn to use appropriate laboratory equipment and instruments.

Content
Organic Chemistry:
- Acidity and basicity.
- Strength of acids and bases.
- Ketal-enol tautomerism. Carbanions.
- Carbonyl substitution and condensation reactions.
- Wittig reaction.
- Applications to synthesis.

Practical Work:
- Handling Organic Chemicals
- Extraction
- Distillation
- Purification
- Instrumental analysis
- Macroscale and Microscale Synthesis
- Chromatography
- Identification of unknown substances.

Reading Materials

HES2540 Forensic and Analytical Science
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: HES1525 Chemistry 2 or HES1555 Consumer Science • Corequisite: Nil • Reaching methods: Lectures, Laboratory classes, web based unit presence (Blackboard). • Assessment: Laboratory Reports, Demonstrator Assessment, Laboratory Test, Examinations
A unit of study in: Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology)/Bachelor of Business and Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives
During the unit of study we aim:
- To study the chemical and biochemical techniques used by forensic scientists to assist the judicial system to help solve crimes, or to help prove that a law has been broken.
- To visit a laboratory where forensic analysis is carried out.
- To study the theoretical basis and areas of application for the most commonly used areas of high-sensitivity, highly selective instrumental separation science (chromatography) and the most widely used but diverse methods of detection of chemicals (spectroscopy).
- To study the molecular structures, sizes, compositions, polarities and charges of organic chemicals used in forensic applications so that an understanding of the appropriate analytical technique to be used for their accurate measurement can be identified.

Content
Forensic Science:
- Introduction to forensic science.
- Chronological landmarks in the history of forensic science.
- Legal aspects of forensic science and the admissibility of forensic evidence in the legal system.
- Drugs in racing, sport and the workplace.
- Forensic application of Infra Red (IR), Mass Spectroscopy (MS), High Performance Liquid Chromatography (HPLC) and Gas Chromatography (GC).
- DNA fingerprinting.

Analytical Science:
- Chromatography as a separation process, systematic relationships governing the chromatographic process, typical GC and HPLC instrumentation and processes, and adaptations to commonplace applications.
- Basic spectroscopy principles and instrumentation, atomic absorption and emission spectroscopy, infrared spectroscopy and ultraviolet/visible spectroscopy.

Organic Chemistry:
- Conjugation.
- Resonance.
- Aromaticity.
- Hückel Rule.
- Arenes.
- Electrophilic and nucleophilic aromatic substitution.
- Carboxylations.
- Stabilisation.
- Rearrangements.

Reading Materials
Bowater, IC, Atomic and Molecular Spectroscopy, (printed notes), Swinburne Press.
Cross, RF, Cross Chromatography, (printed notes), Swinburne Press.

HES2541 Analytical Chemistry
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: HES1525 Chemistry 2 or HES1555 Consumer Science • Corequisite: Nil • Reaching methods: Lectures, laboratory classes, web based unit presence (Blackboard). • Assessment: Laboratory Reports, Demonstrator Assessment, Laboratory Test, Examinations
A unit of study in the Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology) / Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology) / Bachelor of Business and Bachelor of Science (Psychology and Biochemistry).

Aims & Objectives
During the unit we aim:
- To build upon the first-year practical chemistry base.
- To extend investigative skills and elevate wet-bench analytical techniques to a high level.
- To learn to use analytical instrumentation.
- To prepare for industry-based learning.
- To study the theoretical basis and areas of application for the most commonly used areas of forensic science and the admissibility of forensic evidence in the legal system.
used areas of high-sensitivity, highly selective instrumental separation science (chromatography) and the most widely used but diverse methods of detection of chemicals (spectroscopy).

Content
Analytical Science:
- Chromatography as a separation process, systematic relationships governing the chromatographic process, typical GC and HPLC instrumentation and processes, and adaptations to commonplace applications.
- Basic spectroscopy principles and instrumentation, atomic absorption and emission spectroscopy, infrared spectroscopy and ultraviolet/visible spectroscopy.

Practical Chemistry:
- Quantitative analysis.
- Volumetric titration.
- UV-visible spectrophotometry.
- Atomic absorption spectroscopy.
- Gas chromatography.
- High performance liquid chromatography.

Reading Materials

HES2621 Introduction to Biochemistry
12.5 Credit Points • 1 Semester • 60 Hours • Prerequisite: HES1525 Chemistry 2 or HES1510 Chemistry 1 (HES1500 Introduction to Chemistry) plus organic chemistry • HES1616 Concepts of Biotechnology is highly recommended. * organic chemistry can be either a pass in the organic chemistry section of HES1525 or a pass in the self-paced organic chemistry module available through the Unit of Study convenor of HES1525 or through the Program Manager. • Corequisite: Nil • Teaching methods: Lectures, Tutorials, Web based presence • Assessment: Assignments 5%, examinations 45%, Practical reports 30%, Practical exam 20%
A unit of study in the: Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology)/Bachelor of Business and Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives
This unit of study aims:
- To provide an introduction to the basic concepts of biochemistry necessary for biochemical and biotechnology studies.
- To provide an understanding of the basic structure and behaviour of biomolecules.
- To introduce students to biochemical structures and the relationship of structure to function.
- To provide an understanding of the structure, function and kinetic properties of enzymes and their role in metabolism in the living cell.
- To examine the main catabolic pathways of the cell and how they are integrated with other pathways within the cell.
- To establish an understanding of the quantitative aspects of biochemical analyses.
- To establish the importance of chemical safety and precautions in the biochemical laboratory.
- To develop basic practical biochemical skills for the handling and analysis of biomolecules.
- To develop report writing skills.
At the end of this unit of study students will be able to:
- Demonstrate an understanding of the properties of biomolecules and be able to predict behaviour of molecules from structures.
- Transform and interpret kinetic data and make predictions based on a simple model of enzyme kinetics.
- Design protocols for biochemical assays.
- Acquire and interpret data in the laboratory.
- Write a scientific report.
- Demonstrate an ability to name and write structures for representative molecules of the major classes of biochemicals.
- Calculate masses/moles of substances in aqueous solutions and find their concentration.
- Perform calculations associated with practical work, e.g. dilutions, unit conversions etc.
- Understand and use buffers and be able to calculate the pH of a buffer.
- Understand the concept of pH and calculate the pH of a weak acid or base of given concentration.
- Calculate the pH of a weak acid or base of given concentration and determine the concentration of all species present.

Content
- Structure, chemical properties and function of the main classes of biomolecules including monosaccharides, polysaccharides, amino acids, peptides and proteins, fatty acids, triacylglycerols and related lipids, nucleotides and nucleic acids.
- Protein architecture and its relationship to protein function.
- Enzyme kinetics, reaction mechanisms, methods for enzyme assay and analysis, inhibition of enzyme activity.
- Principles of bioenergetics, strategies of metabolism, types of metabolic reactions.
- Reactions of glycolysis, glycolysis, Krebs cycle and oxidative phosphorylation.
- Overview of nitrogen catabolism and lipid catabolism and their integration with carbohydrate catabolic pathways.
- Practical program to support the above theory including spectroscopy, quantitative and qualitative analysis of carbohydrates and proteins, handling of enzymes and determination of their kinetic properties.
- Safety in the laboratory.

Reading Materials
HES2621 Practical Manual, Swinburne Press.
There are many other excellent biochemistry texts in the library including those by Morran, Stryer and Molecular Cell Biology by Garrell et al.

Textbooks
Lehninger Principles of Biochemistry, 3rd edn, Nelson and Cox, 2000

Recommended Reading
Morrison & Boyd, Organic Chemistry, 5th edn, last chapters on Biomolecules including optical isomerism, saccharides, amino acids and proteins.

HES2626 Biochemistry of Genes and Proteins
12.5 Credit Points • 1 Semester • 60 Hours • Prerequisite: HES1525 Chemistry 2 or HES1510 Chemistry 1 (HES1500 Introduction to Chemistry) plus organic chemistry. HES1616 Concepts of Biotechnology is highly recommended. • Corequisite: Nil • Teaching methods: Lectures, tutorials, web based unit presence. • Assessment: Written assignment 10%, Final exam 50%. Practical reports 25%, Practical test 15%
A unit of study in the: Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology)/Bachelor of Business and Bachelor of Science (Psychology/Biochemistry). Note: Organic chemistry can be either a pass in the organic chemistry section of HES1525 or a pass in the self-paced organic chemistry module available through the unit convenor of HES1525 or through the program manager.

Aims & Objectives
The unit aims to provide:
- An understanding of the fundamentals of the structure, function and regulation of expression of prokaryotic and eukaryotic genes.
- An overview of the complexity and organisation of various types of DNA sequencse and genes in eukaryotic genomes.
- An understanding of the instability of DNA, various types of DNA rearrangements and their significance to gene function, human genetics, functions of various cells and systems, diseases.
- An overview of the specialisation and complexity involved in eukaryotic gene regulation.
- An understanding of diversity of the genetic basis of various human diseases.
- An introduction to clinical genetics and genetic counselling, ethical considerations in biotechnology.
At the end of this unit students will be able to:

- Demonstrate an understanding of the complexity of the genetic material, various mechanisms of gene regulation and the instability and mutations in DNA and their effects on the structure and function of proteins.
- Demonstrate an understanding of the need for and use of the above information in biotechnology, particularly in relation to gene discovery, genetic basis of diseases, disease diagnosis, new types of disease treatments, forensic science, agricultural and industrial biotechnology.
- Demonstrate an understanding of the linkage between the biochemical principles and the extension of these into developing new techniques for genetic analysis.
- Show an awareness of the need for critical thinking and the ethical, legal and social issues associated with some of the technology.
- Recognise the future trends in biotechnology.
- Recognise the opportunities for further study or employment in various fields utilising biotechnology, locally and abroad.
- Demonstrate hands-on practical skills in the above areas.
- Record scientific observations correctly, interpret these honestly and present the results in the form of formal laboratory reports.
- Work co-operatively.

**Content**

Overview of the structure of DNA and RNA, DNA replication, gene transcription, protein translation.

Gene structure and regulation of gene expression in prokaryotes in bacteria, using the lac operon of E. coli as an example. Composition of the eukaryotic genomes:

- Gene structure, its origin/evolution, mechanism of intron splicing, processing of mRNAs, mutations in genes and their effects, particularly in relation to human genetics diseases.
- Variable repetitive DNA sequences, VNTRs, microsatellites, applications of these in DNA typing, with particular reference to forensic science.
- Human genetic diseases associated with dynamic trinucleotide repeats.
- Multigene families encoding tRNAs, rRNAs, mRNAs.
- Telomere repeats, telomerase and its significance, applications of this information.

Rearrangements in and instability of eukaryotic genomes and the implications of these:

- Transposable genetic elements (transposons and retrotransposons), implications of their instability to gene function.
- Genetic recombinations in gene complexes encoding antibodies and their significance for the human immune system.
- Meiotic recombination, linkage studies and their significance to genetic studies.
- Faulty recombination and its implications to gene structure, function, genetics. A brief overview of gross chromosomal rearrangements and their effects, cancers.

Regulation of gene expression in eukaryotes:

- Promoters, enhancers and other regulatory sequences of eukaryotic genes.
- Various transcription factors, motifs involved in interactions of these with promoters.
- Genomic imprinting, DNA methylation.

Introduction to the laboratory applications of the above information wherever appropriate, e.g., techniques based on DNA structure and replication (e.g., DNA sequencing, hybridisations, PCR); design of various cloning vectors, DNA profiling in forensic and other areas, genetic diagnoses, drug design.

**Reading Materials**

Lecture notes (provided via Blackboard)

Laboratory manual (to be purchased from the university bookshop)

**Textbooks**


**HES2631 The Microbial World**

12.5 Credit Points – 1 Semester – 5 Hours per Week – Hawthorn – Prerequisite: HES1610 Concepts of Biology, HES1615 Concepts of Biotechnology or the equivalent is highly recommended. Teaching methods: Lectures, Practical Demonstrations, Practical Classes, Extensive Use of Multimedia Learning Resources, Learning Extension Program via the Internet. Assessment: Theory test 35%, Final exam 35%, Practical test 10%, Practical reports 20%.

A unit of study in the: Bachelor of Health Science (Public and Environmental Health), Bachelor of Science (Biochemistry)/Chemistry, Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology)/Bachelor of Business and Bachelor of Science (Psychology/Biochemistry).

**Aims & Objectives**

During the unit of study we aim:

- To develop the basic concepts of microbiology.
- To develop the practical skills and techniques required in microbiological analysis.
- To prepare students for studies in advanced topics in microbiology and applications in biotechnology.

**Content**

- A survey of micro-organisms.
- Structure and function of bacterial cells.
- Microbial metabolism including photosynthesis.
- Nutrition and growth of bacteria, counting techniques.
- Control of microbial growth, sterilisation and disinfection.
- Microbial genetics.

**Reading Materials**


**HES2636 Microbes in the Environment**

12.5 Credit Points – 1 Semester – 5 Hours per Week – Hawthorn. Prerequisite: Nil. Corequisite: HES1610 Concepts of Biology, HES1616 Concepts of Biotechnology or the equivalent is highly recommended. Teaching methods: Lectures, Practical Demonstrations, Practical Classes, Extensive Use of Multimedia Learning Resources, Learning Extension Program via the Internet. Assessment: Theory test 35%, Final exam 35%, Practical test 10%, Practical reports 20%.

A unit of study in the: Bachelor of Health Science (Public and Environmental Health), Bachelor of Science (Biochemistry)/Chemistry, Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology)/Bachelor of Business and Bachelor of Science (Psychology/Biochemistry).

**Aims & Objectives**

During the unit of study we aim:

- To introduce the fundamental concepts involved in food microbiology and its importance to the food processing industry.
- To understand the role and importance of food microbiology in food safety and quality assurance issues.
- To gain the necessary laboratory skills to undertake final-year food-related research projects.

**Content**

- Role of micro-organisms in food spoilage.
- Food borne pathogens and toxins, control methods, food preservation methods.
- Viruses.
- Host-parasite relationships.
- Host responses to infection: the immune system.
- Clinical and diagnostic microbiology.
- Fermentation microbiology: manufacture of food, bioreactors.
- Related practical exercises.
Reading Materials

HES2700 Food Science
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES1490 or HES1510 Chemistry 1 • Teaching methods: Lectures, Laboratory Practicals • Assessment: Assignments, Examinations, Lab Reports
A unit of study in the Bachelor of Health Science (Public and Environmental Health) and Bachelor of Science (Biotechnology/Biochemistry).

Aims & Objectives
During the unit of study we aim:
• To study ancient food technology.
• To study the use and function of food additives.
• To examine natural hazards associated with food.
• To develop an understanding of the instrumental techniques used in food analysis to determine compliance with the Food Standards Code.

Content
• Food Chemistry techniques used to determine carbohydrate, protein and lipid in foods. Determinants of the amount of micronutrients in food. Methods used for determining the water content of foods. Determination of the calorie of juice content of foods. Other manual and instrumental techniques used in food analysis to determine compliance with the Food Standards Code.
• Organic Chemistry. Molecules which play a major role in food composition.
• Chemical food additives will be considered under the following headings - historical aspects, permitted compounds, reasons for use, function, advantages, disadvantages, breakdown pathways, toxicity testing, regulatory control. Classes of chemical additives to be considered will include - preservatives, antioxidants, flavouring compounds, sweetening agents, flavour enhancers, nutrients and emulsifiers.
• Natural hazards associated with food inc. natural MSG, Solanine, Mycotoxins, Seafood Toxocosis. Ciguatera.

Reading Materials
Food Standards Code.

HES2705 Water Science
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES1490 Introduction to Chemistry or HES1510 Chemistry 1 • Corequisite: Nil • Teaching methods: Lectures, Field Visits, Laboratory Practicals • Assessment: Assignments, Examinations, Lab Reports
A unit of study in the Bachelor of Health Science (Public and Environmental Health) and Bachelor of Science (Biotechnology/Biochemistry).

Aims & Objectives
During the unit of study we aim:
• Study of the environmental impact of industrial and domestic pollution on natural water. Brief review of water treatment methods with emphasis on tertiary treatment.
• To study water chemistry in terms of sources of pollutants and their effects.
• To study the analysis of water for pollutant material.
• To study swimming pool chemistry.
• To examine the processes of water treatment.
• To study the processes of liquid waste treatment and disposal.

Content
Study of the environmental impact of industrial and domestic pollution on natural water. Sources of pollutants, including introduction of grey water usage. Brief review of water treatment methods with emphasis on tertiary treatment.
• Use of portable test equipment for the evaluation of natural water quality: HACH, DO meters, conductivity, pH.
• Water sampling methods.
• Significance of various water testing parameters. Identifying problems.
• Chemistry and disinfection of swimming pool and spa water. Swimming pool portable testing equipment. Laboratory titrations to evaluate pool and spa water.
• Waste water management; study of appropriate options for on-site liquid waste treatment and disposal in non-sewered areas. Anaerobic (primary) treatment.
• Secondary treatment: including absorption, transpiration, filtration, package treatment plants. Reed beds, re-use of waste water. Irrigation lay-outs.
• Site evaluation. Land assessment. Soil percolation tests. Soil characteristics.
• Maintenance of systems. Legislative and code requirements.
• Physical treatment processes for drinking water and water supply systems. Stormwater quality. Circulation and filtration plant for swimming pools and spas.

Reading Materials
Cromar, N, Cameron, S & Fallowfield, H (eds) Environmental Health in Australia and New Zealand, Oxford University Press, 2004
Environment Protection Authority, 2008: Septic Tanks Code of Practice Guidelines for Environmental Management, EPA Victoria
HES1510 Practical Manual, Swinburne Press.

HES2710 Health and Environmental Law 1
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES1490 Introductory Law • Corequisite: Nil • Teaching methods: Lectures, Tutorials, Class Exercises • Assessment: Assignments 30%, Class presentations 10%, Examinations 60%
A unit of study in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
To develop an understanding of the processes of administration of legislation relating to public health and environment protection.

Content
• The Health Act 1988. Enabling legal provisions regarding nuisance, infectious disease and accommodation.
• Tobacco Act, responsibilities and duties.
• Environmental health powers and controls of the Local Government Act.
• Food Safety Legislation: Food Act Codes. Statutory requirements and obligations of the food industry including Food Safety Programs.
• Registration, warranties, due diligence defences. Evidentiary value of Codes.
• Food recall protocol.

Reading Materials
Health Act.
Environment Protection Act.
Tobacco Act.
Class manuals.

HES2715 Built and Sustainable Communities
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Field visits • Assessment: Assignments, examinations, tests
A unit of study in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
During the unit we aim:
• To understand the history and concept of the built environment including the legislative and strategic control of urban environments.
• To understand the principles of domestic construction and examine the health issues related to housing & accommodation.
• To identify the potential environmental hazards of the arising from the built environment including noise, air, ventilation and waste disposal.
• To provide an understanding of selected sanitary engineering principles and the ways in which they can be employed to reduce particular problems.
• To examine the principles of ecologically sustainable development and the application to the built environment.

Content
• History of the built environment, land use planning processes and strategies and their application to environmental health.
• Building Code of Australia, Health issues related to housing. Statutory controls
inc., Prescribed Accommodation, Caravan Parks.

- Vibration/acoustics: theory and practice of vibration and noise control applied to equipment and plant including ventilation systems.
- Codes of practice for noise emission and control. Minimising health risks associated with high levels of vibration and noise.
- Air quality, sources of exposure, pollutants of concern, monitoring and control, sick building syndrome.
- Sustainable development, concept of ecological footprint.

Reading Materials

HES2725 Food Safety Principle and Practice 1
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HSSL100 Introductory Law • Corequisite: Nil • Teaching methods: Lectures, Field Demonstrations, Group Work • Assessment: Assignments 60%, Tests 40%
A unit of study in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
During the course we aim:
- To develop the skills necessary to effectively monitor food safety by against statutory and other requirements, and to institute legal proceedings if required.
- To understand the principles of Food safety Program development and compliance assessment, particularly in relation to the retail sector of the food industry.
- To describe major public health pests pertinent to the food industry, including measures for prevention, detection and control.
- To understand food safety programs audit and quality assurance skills appropriate to 3rd party auditing requirements.

Content
- Food contamination: types of contamination, conditions for presence
- Food risk classification. Storage, thawing, and re-heating technique.
- Use of detergents and sanitisers. Clearing schedules.
- Food Safety Program development/assessment in retail establishments.
- Food Handling Hygiene: personal hygiene, cross-contamination, safe/unsafe handling.
- Food Premises Fit-out Guidelines: space, product flow, lighting, ventilation. Surfaces and equipment construction, design and installation, plant review.
- Food Premises Assessment: effective communication technique, assessment procedure, equipment requirements and use. Sampling and auditing procedure.
- Pest Management: Pest vectors pertinent to the food industry. Detection, identification and control procedures. Integrated Pest Management strategies.

Reading Materials
Australia New Zealand Food Authority, 2001 Safe Food Australia, Commonwealth of Australia.
Australia New Zealand Food Authority, 2001 Safe Food Australia, A guide to the Food Safety Standards, Commonwealth of Australia

HES2735 Communicable Disease Control
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures • Assessment: Examinations and tests
A unit of study in the Bachelor of Health Science (Public and Environmental Health) and Bachelor of Science (Biotechnology/Biochemistry).

Aims & Objectives
During the unit we aim:
- To introduce the study of immunology and its relationship to the development of immunisation practices.
- To examine and understand Australian immunisation procedures.
- To study the nature, transmission and control of communicable diseases of public health importance, from a local and global perspective.
- To examine the principles of epidemiology, approaches, data sources and measurements. Surveillance and outbreak investigation principles.
- To develop an understanding for emerging Infectious diseases.
- To develop an understanding for risk assessment and management of communicable diseases.

Content
- Nature and scope of communicable diseases of public health significance, including, transmission and control.
- Principles of infection control for skin penetration premises and beauty establishments and associated guidelines.
- Diseases spread by contact and aerosols inc: Mycobacterium marinum, Leptospira spp. Legionnaires Disease, Toxic Cynobacteria, Pseudomonas aeruginosa, Tuberculosis.
- Disease spread by ingestion, inc: bacterial, protozoa, viruses eg: Cholera, Typhoid and Paralytic fevers, Shigella, E. coli (ETEC etc) Campylobacter, Salmonella, Clostridia, Cryptosporidia, Giardia, Entamoeba, Hepatitis, Rotavirus, Norwalk.

Reading Materials
Gregg, M, Field Epidemiology, Oxford University Press, New York, 1996.

HES2740 Environmental Health Technology
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Field Exercises • Assessment: Assignments, Tests
A unit of study in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
During the unit we aim:
- To provide students with an understanding of selected engineering principles and the ways in which they can be employed to resolve particular environmental problems.
- To introduce the student to liquid waste disposal theory and practice, standards of installation, application and regulatory control.

Content
- Mechanical engineering plant: principles and standards to be met by heating, ventilating, air-conditioning, refrigeration, thermal comfort, and sick buildings. Recognition and analysis of problems, reports and recommendations, maintenance of records.
- Vibration/acoustics: theory and practice of vibration and noise control applied to equipment and plant, including ventilation systems and food processing plant. Codes of practice for noise emission and control.
- Minimising health risks associated with high levels of vibration and noise.
- Waste-water disposal theory: vented, vented-modified, single stack, single
A unit of study in the Bachelor of Technology (Aviation) and Bachelor of Business.

Aims
To enable the student to sit the CASA CPL Examination to receive a pass in this unit of study.

Objectives
• Pass the CASA CPL Examination to receive a pass in this unit of study.

Content
• Flight Planning: Climb performance, payload calculations. Echo loading system, floor loading. %Mean Aerodynamic Chord (MAC), shifting weight, adding weight, fuel as ballast, forward limit.
• Air Law & Procedures: Privileges and limitations of CPL, classification of operations, flight & duty times, Night Visual Flight Rules (NVFR), marshallings, oxygen use, ground operations, emergency equipment, authority of Pilot-in-Command, admission to crew compartment, carriage of examiners.
• Navigation to CPL Standard: Form of the earth, time zones, universal time co-ordinated (UTC), end of daylight (BoD), beginning of daylight (EoD), charts and publications, computations, complicated 1/60s, complex circular slide rule calculations, pilot navigation, radio navigation aids.
• Aviation Meteorology to CPL Standard

Textbooks
Aviation Theory Centre, Aeroplane Performance, Operation and Planning, Series 3.

References
Civil Aviation Safety Authority, VFR Day Syllabus, as amended from time to time.
Civil Aviation Safety Authority, Civil Aviation Orders, Amendments.
Civil Aviation Safety Authority, Aeronautical Information Publication.
Civil Aviation Safety Authority, Operational Notes (CASA), NDB, VOR, and DME.

Aims & Objectives
To reinforce and increase the student basic understanding of aircraft systems and of aerodynamical and aerodynamic factors influencing aircraft performance up to ATM performance level. Additionally the student will learn human performance and limitations relevant to Airline operations.

At the completion of this unit students will:
• Know the engineering and human factors that impact on flying operations at the CPL level.
• Be able to achieve examination credits for the CASA CPL and Human Factors exams.
• Appreciate the operational limits of both aircraft and human beings at the CPL level.

Content
• Advanced aerodynamics: Terminology, aerodynamic forces, shock waves, performance and speed, performance and altitude
• Airframe and Systems: Flight controls, landing gear, actuators, systems, air conditioning and pressurisation, ice and rain protection, fuel systems, electrical systems.
• Turbine Engines: Thrust, principles of operation, engine construction, turbo propellers, auxillary power units, operational considerations, starting.
• Engine Instruments: Displays, EPR gauge, torque meter, RPM indicator, turbine temperature indicator, fuel consumption, total air temperature (TAT) gauge.
• Flight Instrumentation Systems: Application of computers to aircraft, EFIS, FMS.
• Automatic Flight Control Systems: Autopilot, flight director, auto-throttle, autoflight, flight envelope protection in autoflight, associated autostems.
• Warning and Recording Equipment: Ground proximity warning systems (GPWS), Traffic Collision Avoidance System (TCAS), Overspeed Warning System, Stall warning, Take-off warning system (TWS), Digital Flight Data Recorder (DFDR), Cockpit Voice Recorder (CVR), Master Warning Systems.
• Human Performance and Limitations: Metabolism, respiratory systems and blood circulation, the pressure cabin, human information processing, vision, hearing, equilibrium, integration of sensory inputs, spatial disorientation and illusions, memory, human behaviour, personality, skills, human error and
reliability, cockpit management, leadership, communication, judgement and decision making, flying and health.

Textbooks

References
James, Jones Avionics, 1989-1990.
Avionics Fundamentals, 1974, United Airlines.

HES2906 Air Transport Pilot Licence 1
12.5 Credit Points • External Venue • Prerequisites: HES1905 Commercial Pilot Licence 1, HES2901 Commercial Pilot Licence 2 • Teaching methods: Classroom • Assessment: Examination 70%, Assessed work 30%. In addition, candidates must achieve satisfactory progress in their flying training towards the CASA CPL.

A unit of study in the Bachelor of Technology (Aviation) and Bachelor of Technology (Aviation)/Bachelor of Business.

Note: All seven CASA CPL theory examination credits are required for the student to sit the CASA ATPL theory exams.

Aims & Objectives
To reinforce and increase the students basic understanding of aircraft systems and of aeronautical and aerodynamic factors influencing aircraft performance up to Airline Transport Pilot Licence standard. Additionally the student will learn human performance and limitations relevant to airline operations.

Content
• Advanced aerodynamics: Terminology, aerodynamic forces, shock waves, performance and speed, performance and altitude
• Airframe and Systems: Flight controls, landing gear, actuating systems, air conditioning and pressurisation, ice and rain protection, fuel systems, electrical systems.
• Turbine Engines: Thrust, principles of operation, engine construction, turbo propellers, auxiliary power units, operational considerations, starting.
• Engine Instruments: Displays, EPR gauge, torque meter, RPM indicator, turbine temperature indicator, fuel consumption, total air temperature (TAT) gauge.
• Flight Instrumentation Systems: Application of computers to aircraft, EFIS, FMS.
• Automatic Flight Control Systems: Autopilot, flight director, auto-throttle, autoflight, flight envelope protection in autopilot, associated autopilots.
• Warning and Recording Equipment: Ground proximity warning systems (GPWS), Traffic Collision Avoidance System (TCAS), Overspeed Warning System, Stall warning, Take-off warning system (TWS), Digital Flight Data Recorder (DFDR), Cockpit Voice Recorder (CVR), Master Warning Systems.
• Human Performance and Limitations: Metabolism, respiratory system and blood circulation, the pressure cabin, human information processing, vision, hearing, equilibrium, integration of sensory inputs, spatial disorientation and illusions, memory, human behaviour, personality, skills, human error and reliability, cockpit management, leadership, communication, judgement and decision making, flying and health.

Textbooks
Aviation Theory Centre, Aerodynamics, Engines & Airframe Systems For The Air Transport Pilot, 2001

Aviation Theory Centre, Human Factors for the Professional Pilot, 2001

References
Campbell, RD The Multi Engine Rating: Instructor manual, Granada, AOPA.
James, Jones Avionics, 1989-1990.
Avionics Fundamentals, 1974, United Airlines.

HES2910 Human Factors and Performance
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES1910 Human Factors & Communication or equivalent • Corequisite: Nil • Teaching methods: Classroom • Assessment: Examination 60%, Assignment 30%, Presentation 10%

A unit of study in the Bachelor of Technology (Aviation), Bachelor of Technology (Air Transportation Management)/Bachelor of Technology (Aviation)/Bachelor of Business and Bachelor of Technology (Air Transportation Management)/Bachelor of Business.

Aims & Objectives
To continue the study of Aviation Human Factors, and, in particular, those aspects which apply to the operation of aircraft. At the completion of this unit the student will have an in depth understanding of a range of human performance factors that apply to the safe day to day operation of aircraft and associated ground organisations.

Content
• Personality
• Human performance and limitations
• Effective teamwork and leadership
• Communication and assertiveness
• The Reason model
• Decision making/pilot judgement
• Attention, monitoring, sleep and fatigue counter measures
• Ergonomics and man-machine interface
• Managing Stress
• Management of aircraft automation
• Simulation
• CRM: Elements in CRM training, Evolution and overview of Contemporary CRM, Regulatory Practice, Modality of CRM, Typology of CRM in Flight Operations, CRM and Recurrent, CRM/LOFT, Organisational Resources Management.
• LOSA, CRM Research and Evaluation.
• Cross cultural perspectives in CRM.
• Basic Threat and Error Management Principles
• An in depth study of a General Aviation accident.

Textbooks

References
Johnston, N, McDonald, N & Fuller, R (eds), Aviation Psychology in Practice, Avebury, 1994.
Aims & Objectives
To provide the student with knowledge of heavy jet flight planning and performance to a level required for operational situations encountered in the airline industry. At the completion of this subject students will:

- Know the planning and operational factors that impact on flying operations at the ATPL level.
- Be able to accurately plan flying operations for the B727.
- Value the safe and accurate planning of flying operations at the ATPL level.

Content
- Choice of route and amount of reserve fuel: Selection of best route, weather, minimum fuel/time, engine and aircraft performance, payload, air traffic regulations, navigation aids, safety heights, fuel volume, temperature variation, alternates. Flight plans using various cruise control procedures.
- The use of aircraft performance data: Allowable loading and runway requirements for take off and landing. Use of aircraft performance data and meteorological data for optimum operation. Effect of failure of one or more power units. Flight progress charts. Long distance flight plans. In flight changes and emergency operations, PNR, ETP, LPD.

Textbooks

References
Civil Aviation Safety Authority, Civil Aviation Orders, Regulations, Amendments. Civil Aviation Safety Authority, ATPL Syllabus.

HES2930 Aircraft Structures
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Classroom based plus site visit to major airport. • Assessment: Individual Assignment 20%, Experiential Component 40% Examination (2hrs) 40%.

A unit of study in the Bachelor of Technology (Air Transportation Management) and Bachelor of Technology (Air Transportation Management) / Bachelor of Business

Aims & Objectives
To provide students with an introduction to the strength of materials and their behaviour as loaded members in aircraft structures. Corrosion and fatigue is also addressed in the context of an aging general aviation aircraft fleet.

At the completion of this unit, students will have developed a fundamental knowledge of static equilibrium, aircraft structural members and materials and the method in which aircraft structures react load. Students will also understand the detrimental effects of corrosion and fatigue and how this is managed in aircraft fleets.

Content
- Structural loading: aerodynamic and inertia
- Load analysis
- Structurally determinate struts, ties, beams, shafts and simple frames
- Stress, strain
- Normal stress, average shear stress, bending stress and shear stress due to torque, Young's Modulus, strain.
- Euler buckling of slender pin jointed columns
- Yield stress and ultimate stress
- Safety factors
- Limit, proof and ultimate load
- Introduction to aircraft materials
- Aluminium alloys, steel alloys, advanced composites
- Metal corrosion
- Causes, time dependent, time related and time independent, common areas of corrosion in aircraft structures, methods of protection
- Fatigue: The mechanism of fatigue, manoeuvre and gust load spectra, stress

Textbooks
concentrations, crack propagation. Fatigue life determination and fatigue test methods. Safe Life and Fatigue safe philosophies.

References
Middleton, D, Composite Materials in Aircraft Structures.
Anon, Aircraft Corrosion Control, EA-CC-1. IAP inc.

HES2935 Aircraft Maintenance
12.5 Credit Points • 1 Semester • 2 Hours per Week plus 8 Hours practical • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Classroom and Practical • Assessment: Examination 50%, Practical work 50%.
A unit of study in the Bachelor of Technology (Aviation)/Bachelor of Technology (Air Transportation Management), also as an elective in Bachelor of Technology (Aviation)/Bachelor of Business.

Aims & Objectives
- To give the student an understanding of the maintenance practices of a commercial aircraft operator, especially in the context of legal and commercial requirements.
- To provide students the opportunity to become familiar with and to gain understanding through practical experience, in the maintenance allowed to be conducted by Commercial pilots on aircraft, as listed in Schedule 8 of the Civil Aviation Regulations.
- At the completion of this unit, students will have developed an understanding of the planning and operational aspects of aircraft maintenance in an airline context. Students will have also achieved competency with respect to Schedule 8 Commercial Pilot Maintenance.

Content
Maintenance Practices
- Maintenance, Airworthiness and A/C Safety.
- Regulations and Maintenance Philosophies
- MSG, HT, OC, CM, Reliability, SSI's, Review Board.
- Maintenance Practices
- Delegations, Approvals and Licences.
- Systems of Maintenance
- AMRO, maintenance work packs, Reliability Monitoring Program.
- Maintenance Control
- Organisational Arrangements, Maintenance Controller, Maintenance Control Manual.
- Maintenance Providers
- Log Books and Maintenance Releases
- A/C Flight and Technical Manual (Log)
- Discrepancies, Major Defects & PUS's
- Defect Categories, permissible unserviceabilities, defcat analysis.
- Maintenance Costs
- Cost categories, direct and indirect operating costs, baseline cost, flight and cycle costs, labour and material costs, IATA system.
- Technical Organisations & Quality Assurance
- Systems of Safety and Compliance.
- Safety System Objectives, Safety Organisation Structure, Safety Management process, Compliance requirements.
- CASA approved Schedule 8 course
- Removal and installation of landing gear, repair of pneumatic tubes of landing gear, servicing of landing gear tyres.
- Replacement of defective safety wiring or split pins.
- Removal or refitting of a door.
- Replacement of a door or a side window (unpressurised aircraft).
- Replacement of seats, seat belts, or harnesses.
- Repairs to upholstery or decorative furnishings.
- Replacement or repair of signs and markings, bulbs, reflectors, glasses, lenses, or lights.
- Replacement, cleaning or setting gaps of spark plugs.
- Replacement of batteries.
- Charging of oil filters, replenishing engine oil, fuel, hydraulic fluid
- Lubrication, application of preservative materials.
- Removal or replacement of agricultural equipment, or glider tow hooks.
- Carrying out inspection of a flight control system.
- Carrying out of a daily inspection.

References
Relevant Aircraft Maintenance Manuals.
Civil Aviation Safety Authority, Civil Aviation Orders, Regulations, Amendments.

HES2940 Aircraft Aerodynamics and Performance
12.5 Credit Points • 1 Semester • 2 Hours per Week plus 8 Hours practical • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Classroom and Practical • Assessment: Examination 70%, Practical work 30%.
A unit of study in the Bachelor of Technology (Aviation), Bachelor of Technology (Air Transportation Management)/Bachelor of Technology (Aviation)/Bachelor of Business; and Bachelor of Technology (Air Transportation Management)/Bachelor of Business.

Aims & Objectives
To reinforce the student's understanding of the basic aerodynamic factors influencing aircraft performance and present a theoretical exploration for the observed effects of flight parameter changes.
At the completion of this unit, students will have developed a fundamental knowledge of aerodynamics from both a qualitative and quantitative perspective with respect to aerodynamic forces and aircraft performance. Students will also have an appreciation of the aerodynamic factors impacting on operation of fixed wing transport aircraft.

Content
- Airspeed Measurement
- Atmosphere, incompressible flow, compressible flow and speed of sound, airspeed measurement at high speed.
- Aerodynamic Forces
- Dimensional analysis, lift and induced drag, boundary layer and total drag, high speed aerodynamics.
- Stability and Control.
- Static stability and control, dynamic stability and control, high speed flight limitations.
- Aircraft Performance.
- Powerplants, propellers and jets, cruise performance, climb and descent performance, take off performance, payload, range diagrams.

Textbooks

References

HES2945 Aircraft Design and Operation
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES2940 Aircraft Aerodynamics and Performance • Corequisite: Nil • Teaching methods: Classroom and Practical • Assessment: Examination 60%, Assignment work 40%.
A unit of study in the: Bachelor of Technology (Aviation) Bachelor of Technology (Air Transportation Management). Also available as an elective in Bachelor of Technology (Air Transportation Management)/Bachelor of Business.
Aims & Objectives
To provide the student with a fundamental understanding of the design principles behind the design of an aircraft. The performance aspects are also extended to address the economics of flight of jet transports. At the completion of this subject students should be able:
- To know how factors such as weight, wing area, engine power, drag and high lift devices effect aircraft performance and how these factors can be tailored to meet a design requirement.
- To be able to produce gust and manoeuvre diagrams.
- To have a basic understanding of the principles behind jet transport performance in an airline environment.

Content
- Design process
- Project design methodology, overall systems study, project design phase, detail design phase.
- Project design
- Estimation of take off weight, empty weight, fuel weight.
- Estimation of required take off and climb power, wing area.
- Landing and take off performance, climb and cruise performance.
- Estimation of parasitic and induced drag coefficients.
- Tail volume stability requirements.
- Gust and Manoeuvre Diagrams
- Operation
- Economy Climb
- Force - Speed Diagrams
- Maximum Range Cruise, Long Range Cruise and Specific Range
- Economy cruise, cost index
- Payload Range curves
- Introduction to flight testing methods

References
Roskam, J. Airplane Design: Part 6, Roskam Aviation.
Estley, ME. Aircraft Performance, Theory and Practice, Arnold, 2000
Hoerner, S. Fluid-Dynamic Drag.
Ward, D. Flight Test Engineering, Elsevier 1993

HES2950 Commercial Pilot Licence Practicum 2
12.5 Credit Points • 26 hours dual and 35 hours solo flight time. • 26 hours dual and 35 hours solo flight time. • Hawthorn • Prerequisite: Nil • Corequisite: HES1955 Commercial Pilot Licence Practicum 1 (may also be undertaken prior to HES2950) • Teaching methods: Pre and Post-flight briefingPractical Flight Instruction in Aircraft and Simulator • Assessment: Practical Examination: 100% Training for the private pilots licence is competency based and while progressive assessment is recorded in the training syllabus the licence is granted on successful completion of the flight test.

Aims & Objectives
To endorse the student on the CPL (A) test aircraft. To consolidate the procedural aspects of cross country flight and introduce the student to the conduct of commercial operations.

Content
A minimum of 26 hours dual and 35 hours solo flight time consisting of Pilot in Command (PIC) flight time, Endorsement training and Commercial Pilot Licence (CPL) flying training. During this phase, an additional 20 hours pre-flight and post flight briefing is delivered. Additionally the student will require at least 20 hours for flight planning and pre-flight preparation for cross country command sequences.

Reading Materials
GFS VFR Standard Operating Procedures.
GFS Commercial Pilot Notes.

C182T Pilot Operating Handbook
PA44 Pilot Operating Handbook

Textbooks
Nil.

References
Civil Aviation Safety Authority, VFR Day Syllabus
Civil Aviation Safety Authority, Civil Aviation Orders.
Civil Aviation Safety Authority, Aeronautical Information Publication.
Civil Aviation Safety Authority, Air Operator's Certificate. Air Services, WAC, PCA, VTC, VNC, ERC (LOW) and TAC.
Civil Aviation Safety Authority form 090 012001 (CPL test form).

HES2955 Command Instrument Rating Practicum
12.5 Credit Points • 40 hours minimum dual flight instruction plus 20 hours flight planning. • 40 hours minimum dual flight instruction plus 20 hours flight planning. • Hawthorn • Prerequisite: HES1960 Private Pilot Licence Practicum HES1955 Commercial Pilot Licence Practicum 1 • Corequisite: HES4905 Air Transport Pilot Licence 3 (may be undertaken prior to HES2955) • Teaching methods: Pre and Post-flight briefingPractical Flight Instruction in Aircraft and Simulator • Assessment: Practical Examination: 100% Training for the Command Instrument Rating is competency based and while progressive assessment is recorded in the training syllabus the rating is granted on successful completion of the flight test.

Aims & Objectives
To develop the procedural aspects of instrument cross country flight and conduct approaches and landings under instrument meteorological conditions.

Content
40 hours minimum dual flight instruction, consisting of simulator and aircraft flying. During this phase, an additional 20 hours minimum pre-flight and post flight briefing is delivered. Additionally the student will require at least 20 hours for flight planning and pre flight preparation for IFR (Instrument Flight Rules) cross country sequences.

Reading Materials
Instrument Rating Study Guide Rob Avery
General Flying Services IFR Standard Operating Procedures.
General Flying Services Command Instrument Rating Notes.
Piper PA44 Pilot Operating Handbook

Textbooks
Nil.

References
Civil Aviation Safety Authority, Civil Aviation Orders.
Civil Aviation Safety Authority, Aeronautical Information Publication.
Civil Aviation Safety Authority, Air Operator's Certificate. Air Services, WAC, PCA, VTC, ERC (Low), TAC.
Departures and Approach Procedures East & West
Civil Aviation Safety Authority form E45 12/2005 (CIR test form).

HES2896 Aviation Regulation Environment and Operation
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Classroom based • Assessment: Group project (50%), Research Application 30%, Group Presentation of Group 20%, Examination 2 hours (50%).
A unit of study in Bachelor of Technology (Aviation) Bachelor of Technology (Aviation Management), Bachelor of Technology (Aviation) / Bachelor of Business and Bachelor of Technology (Aviation Transportation Management) / Bachelor of Business

Aims & Objectives
To provide a detailed understanding of the many facets of aviation and the facilities and services required to manage a complex but exciting industry.

At the completion of this unit, students will be able to develop an understanding of some of the regulatory, environmental and operational frameworks within which aviation organisations exist.

Content
- Regulatory Framework
- Technical regulation
- Economic regulation
- Air Operator's Certificate
- Certification
• Environmental framework
• Safety and Risk Management
• Security in Aviation
• Emergency Management
• Operational Aspects
• Aircraft Evaluation and Selection
• Flight Simulation
• ETOPS/Flight time limitations
• Fuel Management
• Air Freight
• Industry and Employment

Textbooks
Clark, P, Aims & Objectives Bachelor
Radnoti, G, Nil- Corequisite: obtain revenue and where their costs relating commercialisation. 
HES2990

References

HES2990 Airport Planning, Operation and Management
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil - Teaching methods: Classroom - Assessment: Individual Assignment (35%); Individual Oral Presentation (15%); Examination (50%). A unit of study in the Bachelor of Technology (Air Transportation Management) and Bachelor of Technology (Air Transportation Management) / Bachelor of Business

Aims & Objectives
To provide the student with a good understanding of the principles and practices relating to airport development and management. Students are introduced to the airport industry, how airports are planned, operated and managed, how airports obtain revenue and where their costs lie. Airport design is discussed so that an appreciation of airport infrastructure and standards required is reached. At the completion of this unit, students will have developed an understanding of airport design and operational issues, and aspects of ownership and commercialisation.

Content
• Introduction to the Airport Industry
• Passenger behaviour in the terminal
• Customer relations and marketing
• Management of small/undeveloped airports
• Ownership models
• Airport fees and charges
• Economic impact of airports
• Airport master planning
• Terminal layout
• Standard and busy rates
• Customs, immigration and quarantine
• Security
• Choice and location of Navigation Aids
• Environmental Impact
• Wildlife Hazard Management
• Overview of pavement design

Textbooks

References


HES3021 Heat Transfer
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Most of 2nd year • Corequisite: Nil - Teaching methods: Lectures, Guest Lectures, Tutorials, Plant Visits and Laboratory - Assessment: Assignments, Examinations A unit of study in the Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Business, and Bachelor of Engineering, (Biotechnology)/Bachelor of Science (Biotechnology).

Aims & Objectives
During the course we aim to develop:
• Competence in the application of heat transfer theory to the analysis of practical heat transfer problems
• Design and selection of heat exchangers
• Evaluation of heat exchanger performance.

Content
Review:
• The laws of conservation of mass and energy and their applications.
• The second law of thermodynamics.
• Differential equations and their applications in rate processes.
• Mechanisms of heat transfer, theory and applications.

Conduction:
• Fourier's law of heat conduction.
• Thermal conductivity.
• Concept of thermal resistance and driving force.
• Steady-state heat conduction through a single plane wall, composite walls, and thick-walled cylinders and spheres.
• Multidimensional and transient conduction.

Numerical methods.
Convective:
Heat-exchanger coefficient.
Fluid flow in convection; laminar and turbulent flow; boundary-layer theory.
Concept of similarity; dimensional analysis.
Prediction of heat-transfer coefficients in forced and natural convection, condensation and boiling heat transfer.
Heat exchangers: types and construction; firm and overall coefficients; log-mean temperature difference; effectiveness-NTU method; fouling factor; pressure drop; optimum design of shell and tube heat exchangers.
Radiation:
Nature of thermal radiation; black-body and real-body radiation; Stefan-Boltzmann's equation; Planck's law of radiation.
Radiation properties of surfaces: absorptivity and emissivity; Radiation exchange among surfaces in a non-participating medium; view factor.
Gas radiation.
Solar radiation.

Reading Materials

HES3025 Mass Transfer
12.5 Credit Points • 1 Semester • Hawthorn • Prerequisite: HES3021 Heat Transfer • Corequisite: Nil - Teaching methods: Lectures, Guest Lectures, Tutorials, Plant Visits, and Laboratory - Assessment: Assignments, Examinations A unit of study in the Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Business, and Bachelor of Engineering, (Biotechnology)/Bachelor of Science (Biotechnology).

Aims & Objectives
During the course we aim to apply the principles of mass transfer and phase
equilibrium to problems involving diffusion with or without chemical reactions, to separation processes, and to the design of equipment used in mass transfer operations.

**Content**
- Diffusion mass transfer:
  - Unimolar transfer and equimolar counter-transfer.
  - Diffusion with chemical reaction.
  - Transient diffusion.
- Convective mass transfer:
  - Mass-transfer coefficient: film and overall coefficients.
  - Fluid flow in convection: laminar and turbulent flow; boundary-layer theory.
  - Interphase mass transfer:
    - Phase equilibrium.
    - Theories of interphase mass transfer: film theory, penetration theory, random surface renewal theory.
  - Design of continuous differential contactors.
  - Height of transfer unit and number of transfer units.
  - Combined heat and mass transfer:
    - Humidification, drying, and crystallisation.

**Reading Materials**

**Aims & Objectives**
- Introduce to students to a variety concepts and theories outlining: Design specification in civil engineering systems. The components and interactions in urban hydrology. Methods in flood estimation. The significance of incorporating environmentally sustainable principles to water and environmental engineering design.
- Recognise the importance of incorporating the concept of sustainability in various water engineering design projects.
- Develop an appreciate social objectives and environmental issues in urban catchment management.

**Aim & Objectives**
- To develop an understanding of the types of separation processes that can be used in chemical engineering plants.
- To apply basic engineering science in the design of separation systems.
- To develop basic design skills for selecting and sizing separation systems.
- To develop an understanding of, and a sensitivity to, the environmental impact of separation processes.

**Content**
- Leaching: Mass transfer in leaching
- Operations, countercurrent washing of solids, calculation of number of stages, graphical methods.
- Distillation:
  - The methods of distillation (two component mixtures), the fractionating column, multi-component mixtures, azotropic and extractive distillation, steam distillation.
  - Liquid-liquid extraction: Extraction processes, calculation of number of theoretical stages.
  - Adsorption: The nature of adsorbents, adsorption, adsorption equilibria.
- Membrane separation processes: Classification of processes, micro-filtration, ultra-filtration.

**Reading Materials**

**HES3111 Urban Civil Design**
- 12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HES2340, HES2131 and HES2155 • Corequisite: Nil • Teaching methods: Lectures; Tutorials; Assignments; Field trips; Assessment: Examinations; Project(s), Tests

**Aims & Objectives**
- To develop basic design skills for selecting and sizing separation systems.
- To develop basic design skills for selecting and sizing separation systems.
- To develop basic design skills for selecting and sizing separation systems.
- To develop basic design skills for selecting and sizing separation systems.

**Content**
- Design Specification in Civil Engineering: Intro to civil engineering systems. Engineering design process. Problem formulation and design specification. Design requirements.
- Stormwater Detention for Quality and Quantity Management: Components in urban stormwater pollutants. Water sensitive urban design. Stormwater reuse applications. Stormwater wetland design principles.

**References**

**HES3112 Urban Water Resources**
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HES2120 • Corequisite: Nil • Teaching methods: Lectures, Tutorials/Activities, Assignments/Quizzes, Field Trips, Web Based Unit Presence: • Assessment: Examinations, Test, Assignments/Case Studies, Oral Presentation

A unit of study in the Bachelor of Engineering (Civil Engineering) and Bachelor of Engineering (Civil Engineering) / Bachelor of Business.

**Aims & Objectives**
During the unit we aim to:
- Identify and highlight the current issues in water and environmental practices.
- Provide students with opportunities to relate theories into practice with current case studies in water industry and field trips.

At the end of this unit students will be able to:
- Analyse water quality data and interpret the water quality conditions in any waterways.
- Conduct standard water quality testing in fields.
- Understand the treatment process in water and wastewater treatment.
- Apply basic principles of hydraulics and hydrology in urban water resources and environmental projects.
- Recognise the importance of incorporating the concept of sustainability in various water resources engineering design projects.
- Develop an appreciate social objectives and environmental issues in urban resources management.
- Enhance student's awareness of current water resources and environmental issues.

**Content**
- Stormwater detention for quality and quantity management: Components in urban stormwater pollution, Water sensitive urban design. Stormwater reuse applications.

**Reading Materials**

**HES3121 Design of Steel Structures**
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HES2120 • Corequisite: Nil • Teaching methods: Lectures (24 hrs); Tutorials (20 hrs); Assignments (4 hrs) • Assessment: Examinations (70%), Tests (10%), Steel Design Project (20%)

A unit of study in Bachelor of Engineering (Civil Engineering) and Bachelor of Engineering (Civil Engineering) / Bachelor of Business.

**Aims & Objectives**
The aims of this unit are to:
- Develop the ability to simplify and analyse complex structures using approximate methods.
- Equip students with knowledge on steel properties and behaviour.
- Provide theoretical models for the students to be able to design steel members and connections in accordance with relevant Australian Standards.
- Give the students, through a team project exercise, the opportunity to develop their design skills and also their team and time management skills.
- Raise the understanding of students about wind actions on buildings and how to design structures to resist such actions.

At the end of this unit students will be able to:
- Analyse indeterminate frames and trusses using approximate methods of analysis.
- Identify wind actions on structures and calculate relevant design wind pressures and frictional drag.
- Define and contrast the material properties of steel.
- Determine the ultimate tensile capacity of steel members considering both yielding and tensile fracture.
- Determine the ultimate bending moment capacity of steel members considering both yielding and lateral buckling.
- Assess shear capacity of beams and design web bearing stiffeners if required.
- Determine the effective strength of compression members in both braced and unbraced conditions.
- Determine the capacity of members under combined actions.
- Identify the load paths in connections and classify the function of steel connections according to their moment carrying capacity.
- Describe different welding techniques and classify different types of bolts and their installation.
- Design bolted connections in shear, tension and combined actions.
- Design welded connections and fastener groups.
- Use design capacity tables (DCT) to design steel members and connections.
- Work effectively in small groups to design a simple steel structure considering different loading actions, constructability and structural safety.

**Content**
Approximate Methods of Analysis of Indeterminate Structures
- Analysis of frames under vertical loads.
- Analysis of frames under lateral loads using the portal and cantilever methods.
- Analysis of trusses to find member forces and deflections.

**Steel Properties**
- Steel making process.
- Hot rolled and cold formed steel.
- Material specifications and properties.

**Wind Loading on Structures in Accordance With AS/NZS 1170.2**
- Wind actions on buildings.
- Wind speeds, locality and building configurations.
- Wind pressure and frictional drag.

**Design of Steel Members**
- Design of tension members considering both yield and net section fracture.
- Lateral torsional buckling in flexural members.
- Bending moment capacity of beams considering section and member capacities.
- Shear capacity of beams.
- Yielding and buckling of webs in bearing and design of web stiffeners.
- Determination of effective length of compression members using the simplified and detailed methods.
- Capacity of compression members considering yielding and buckling.
- Capacity of members under combined actions.
- Use of design capacity tables.
- Industrial buildings, economical steel design and constructability.

**Design of Steel Connections**
- Types of connections (flexible, semi-rigid and rigid).
- Standardised steel connections in Australia and types of fasteners.
- Bolt and weld technology.
- Design of bolted connections for strength and servility.
- Design of welded connections for fillet and butt welds.
- Analysis of bolt and weld groups.
- Column base plates.
Steel detailing.

Textbooks
One Steel Market Mills, Hot Rolled and Structural Steel Products, 2002.
(download via the web: www.onesteel.com).

Lecture and study notes as provided by course coordinator.

Recommended Reading
Hibbler, RC, Structural Analysis, 4th edn, Prentice Hall.
Australian Institute of Steel Construction (AISC), Design Capacity Tables for Structural Steel, Volume 1: Open Sections, 3rd edn.
Australian Institute of Steel Construction (AISC), Ecomonical Structural Steels, 4th edn. (To be provided to each student by the Australian Steel Institute - ASI).

HES3150 Geotechnical Engineering
12.5 Credit Points • 1 Semester • 66 Hours • Hawthorn, Sarawak • Prerequisite: HES2150 • Corequisite: Nil • Teaching methods: Lectures (36 hrs); Tutorials (24 hrs); Assessment: Oral Presentation (10%), Major Assignment (10%), Minor Assignment (5%), Examinations (60%), Class tests (15%)
A unit of study in Bachelor of Engineering (Civil Engineering) and Bachelor of Engineering (Civil Engineering) / Bachelor of Business.

Aims & Objectives
During this unit we aim to introduce engineering students to the fundamentals and basic techniques used in geotechnical engineering. This unit is intended to specifically introduce students to design and construction principles of civil / geotechnical engineering structures such as earth retaining structures, shallow foundations, residential slabs and footings, deep foundations, and the stability of sloping ground.

On completion of the unit, students should be able to:
• Demonstrate an understanding of lateral earth pressures to determine active, passive and at rest lateral earth pressures (and associated forces) on retaining structures based on Mohr circles and the Mohr-Coulomb failure criteria of soils.
• Determine the bearing capacity for various shallow foundations and be able to design suitable shallow footing systems for strength and settlement, shallow foundations, residential slabs and footings, deep foundations, and the stability of sloping ground.
• Understand how combined shallow footings work and be able to design appropriate combined footings for various sites and soil conditions.
• Understand the soil - structure interaction between residential slab footings and active type soils. Thus, be able to select appropriate shallow footing systems for residential structures and design them in accordance with Australian Standard AS2870 for various site/border conditions.
• Determine the strength capacity of deep foundations and be able to design suitable deep foundations for strength and settlement.
• Analyse sloping ground against slope failure and assess the factor of safety using various methods of analysis.
• Demonstrate an understanding of general construction issues for the design and construction of retaining walls, shallow foundations, deep foundations and residential slabs and footings.
• Undertake basic technical investigations by performing a literature review, compile and analyze the information gathered, and produce a brief and concise (journal style) report with an appropriate conclusion.
• Perform a brief and concise oral presentation of technical material, which simulates a conference style presentation.

Content
Lateral Earth Pressures and Design of Retaining Walls (23%)
• Introduction to types / classes of earth retaining structures.
• Lateral earth pressure calculations for (restrained) at-rest conditions.
• Theory of stress - strain behaviour of soils behind retaining walls unrestrained conditions.
• Rankine's active and passive lateral earth pressure calculations detailing the effect of water pressure on retaining walls.
• Coulomb's active and passive earth pressure theory and Coulomb's graphical solution (including wall friction and non vertical walls).

• Stability and design concepts of retaining structures as well as construction issues.

Bear Capacity and Design of Shallow Foundations (25%)
• Simple bearing capacity theory including local and general shear failure, factor of safety, eccentric loads, inclined loads, influence of water table, moments and overturning of shallow foundations.
• Extended bearing capacity theory to include various theories from Meyerhof, Hansen and Vesic to evaluate the accuracy of each method.
• Hansen's Modified method of bearing capacity analysis for sloping ground.
• Bearing capacity analysis of layered soils.
• Site investigation requirements for shallow foundations.
• Analysis and design of combined footings (Rectangular, Trapezoidal and Strap type combined footings).
• Construction issues of shallow foundations and combined footings.
• Remedial underpinning methods of shallow foundations

Residential Slabs and Footings Design to AS2870 (15%)
• Site Classification to AS2870 by characteristic surface movement.
• Design of stiffened raft slabs, waffle raft slabs, standard strip footings and piers / beam/sub systems.
• Modification of Standard Slabs (AS2870) using Engineering Principles.
• Construction issues for residential slabs and footings

Piling and Design of Deep Foundations (25%)
• Types of piles (bored vs. displacement) and the materials used in deep foundations.
• Design of single piles for friction and end bearing strength in cohesive and non-cohesive soils.
• Settlement of single piles.
• Design of piles groups for strength and settlement.
• Pile construction and factors to consider.
• Lateral forces on piles (short and long mechanism).
• Site investigation techniques for deep foundations

Slope Stability Analysis (15%)
• Types, causes and examples of sloping ground failure.
• Theory for the stability of infinite non-cohesive slopes and all finite slopes.
• Analysis of finite slopes by the Mass Procedure, Ordinary Method of Slices, and Bishop's Modified Method of Slices - all detailing the significance of pore pressures, triaxial tests, and the influence of tension cracks.
• Site investigation for slope stability analysis.
• Slope stabilisation methods and use of stability charts.

References
Coduto, DF, Geotechnical Engineering, Prentice Hall, 1996.
Peck, RB, Hanson, WE & Thornburn, TH, Foundation Engineering, 2nd edn, John Wiley and Sons, 1974.
Standards Australia, Standards AS2870 Supplement 1 - Residential Slabs and Footings - Construction Commentary, Australia, 1996.
Standards Australia, Standards HB28 - The Design of Residential Slabs and Footings, Australia, 1996.
HES3281 Materials and Manufacturing
12.5 Credit Points • 1 Semester • 60 Hours Hawthorn, Sarawak • Corequisite: Nil • Teaching Methods: Lectures, tutorials, laboratory • Assessment: Assignments, Examinations, Labs A unit of study in the Bachelor of Engineering (Mechanical Engineering) Bachelor of Engineering (Mechanical) Bachelor of Business, and Bachelor of Engineering (Product Design Engineering)

Aims & Objectives
• To develop the knowledge of processes used in the manufacture of sheet and bulk formed metal, manufacture of plastic products and machined components.
• To develop awareness and skills in the analysis of process parameters in order to achieve quality and productivity in the application of metal forming and polymer processes.
• To develop an appreciation of materials selection, design and application based on their properties and performance.

Content
• Metal forming processes: Extrusion, wire drawing, strip forming, forging, rolling, sheet metal forming - mathematical modelling and process parameters.
• Surface Engineering: Laser processing, thermal hardening, thermo-chemical treatment. Surface coatings, dip processing, electroplating, thermal spraying, vapour deposition.
• Advanced Manufacturing Processes: High pressure die casting, hot isostatic pressing, powder metallurgy, near net shape forming.
• Laboratory experiments: Metal Extrusion, Surface Engineering and Fatigue testing.

References

HES3310 Control Engineering
12.5 Credit Points • 1 Semester • 60 Hours Hawthorn, Sarawak • Corequisite: HES2111 Engineering Mathematics 3A • Corequisite: Nil • Teaching methods: Lectures, Tutorials, Laboratory; Assignments; Automated email • Assessment: Assignment (15%), Examination (70%), Labs (5%), Tests (10%)
A unit of study in Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Business, Bachelor of Engineering (Biotechnology)/Bachelor of Science (Biotechnology), Bachelor of Engineering (Mechanical Engineering) and Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business

Aims & Objectives
• To develop an understanding of the operational behaviour of a wide range of control systems.
• To develop the ability to determine a system's transfer function and performance characteristics using theoretically and experimentally derived data.
• To develop the ability to apply classical linear control theory in designing systems and improving steady state and dynamic performance.
• To develop the ability to determine a system's transfer function and performance characteristics using theoretically and experimentally derived data.
• To develop the ability to apply classical linear control theory in designing systems and improving steady state and dynamic performance.
• To determine transfer functions from response-data for systems having a single input and output.

Content
Modelling and performance of control systems
• Overview of on/off and continuous control of mechanical, thermal and chemical systems.
• Physical relationships of basic components.
• Transfer functions.
• Block diagrams and their reduction.
• Overall system transfer function.

Fluid power control
• Hydraulic and pneumatic components and circuit design.
• Design of on/off and electro-hydraulic systems.
• Dynamic characteristics.

Dynamic response
• Time response - classical solution and Laplace transforms; transient response and steady-state error.
• Dominant poles and Root Locus analysis.
• Frequency response - Bode diagrams.

Stability analysis in time and frequency domain.

Experimental methods
• Determination of transfer functions and stability.
• Design and compensation
• Improve steady state and dynamic performance using compensation techniques.

Textbooks

Recommended Reading

HES3334 Thermofluid Systems
12.5 Credit Points • 1 Semester • 60 Hours Hawthorn, Sarawak • Prerequisites: HET124 Energy and Motion • Corequisite: Nil • Teaching methods: Lectures (24 hrs); Tutorials (22 hrs); Laboratory (4 hrs); Class Tests (8 hrs) • Assessment: Pracs Class & Lab Report (20%), Tests (20%), Examination (60%)
A unit of study in the Bachelor of Engineering (Product Design Engineering) and an elective unit of study in the Bachelor of Engineering (Robotics and Mechatronics).

Aims & Objectives
During the course we aim to:
• Introduce the fundamentals of thermodynamics.
• Develop the ability to use thermodynamics in product design.
• Introduce the fundamentals of fluid mechanics.
• Develop the ability to use fluid mechanics in product design.
• Provide a practical laboratory experiences where students can apply their theoretical knowledge to practical situations and demonstrations.

At the end of this course students will be able to:
• Know the basic principles of thermodynamics.
• Develop control volume approach that based on fundamental principle such as conservation of mass and energy.
• Articulate the linkage between theory and various practical applications.
• Know the thermal efficiency of all basic engineering systems and thermodynamic cycles.
• Know the basic principles of fluid mechanics.
• Recognise the complexity involved in various fluid flow systems.
• Know three basic modes of heat transfer (Conduction, Convection and Radiation).
• Use this knowledge in various engineering application such as Heat exchanger, enclosure flow etc.

Content
Thermodynamics (45%): Heat, work and the system, units, the state of a working fluid, reversibility, conservation of energy and the First Law of
Thermodynamics, the non-flow equation, the steady-flow equation, liquid, vapour, gas, vapour tables, perfect gasses, reversible non-flow processes, reversible adiabatic non-flow processes, polytropic processes, reversible steady flow processes, irreversible processes, the heat engine, entropy, the T-s diagram, processes on the T-s diagram, entropy and irreversibility, exergy, the Carnot cycle, the constant pressure cycle, the air standard cycle, the Otto cycle, the Diesel cycle, mean effective pressure.

- Fluid Mechanics (40%): Introduction to fluid mechanics, fluid properties, fluid statics, fluids in motion, Bernouilli's equation, momentum, continuity, dimensional analysis, drag and lift, scaled models, applications to product design.

Textbooks

References

HES3350 Machine Design
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HES1300 Robotics and Mechatronics Project 1 & HES2120 • Corequisite: NIL • Teaching methods: Lectures (24 hrs); Tutorials (24 hrs) • Assessment: Assignments (50%), Examination (50%)

A unit of study in the Bachelor of Engineering (Mechanical Engineering), Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business Bachelor of Engineering (Product Design Engineering), Bachelor of Engineering (Robotics and Mechatronics) and Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering)

Aims & Objectives
During the course, we aim:
- To develop basic skills in machine design component
- Team skills through group projects.
At the completion of this subject, students should be able to:
- To develop skills in the art of machine component design through design assignments.
- To develop the ability to perform design analysis with sufficient depth to enable innovation.
- To develop the ability to creatively design quality products for a sustainable environment.

Content
- Introduction to design (12%): Course aims; Course structure; Relationship with other subjects; Design as an applied subject; The role of analytical techniques in design; Introduction to design modelling.
- Belts and chain drives (8%): Flat, vee, and toothed belts; Roller and toothed chains.
- Clutches and brakes (8%): Disk, drum and band brakes; Disk and cone clutches.
- Sliding bearings (8%): Viscosity; Petroff's equation; Thin film flow; Hydrostatic bearings; Hydrodynamic bearing theory; Tilt pad and thrust bearings.
- Cams (8%): Cam terminology; Output functions; Cam design: profiles, sizing, manufacture, followers.
- Tolerances (8%): Tolerances for assembly; Statistical tolerancing; Tolerance build-up.
- Energy storage (8%): Mechanical energy storage: elasticity and deflection, inerria; Design, selection and application of torsion bars, helical and leaf springs; Design for impact: absorbing energy, impact.
- Fasteners and joints (8%): Threaded fasteners: types, capacity, selection, installation; Joints and gaskets: types of seal, gaskets and fastening stresses; Rivets, welding and bonding: selection, stress and fatigue considerations.
- Shafts (8%): Design, mounting of parts, connections, support, coupling.
- Rolling element bearings (8%): Types, design, fitting, selection
- Gears (16%): Spur, helical, bevel and worm gears: geometry, gear-tooth stresses, design approaches for compact housings of gear trains

Textbooks

References

HES3360 Human Factors
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: 100 credit points • Corequisite: NIL • Teaching methods: Lectures, Tutorials, Laboratory, Assignments • Assessment: Examination (50%), Group Assignment (25%), Individual Assignment (25%)

A unit of study in the Bachelor of Engineering (Mechanical Engineering), Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business, Bachelor of Engineering (Robotics and Mechatronics), and Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering), and an elective unit of study in the Bachelor of Engineering (Product Design Engineering)

Aims & Objectives
During the course, we aim:
- To introduce the fundamental principles of ergonomics (human factors).
- To develop an understanding of the nature and application of ergonomics (human factors).
- Team skills through group projects.
- To achieve an overall awareness of human-factor issues as they apply in industrial.

At the completion of this subject the student will have developed:
- A general comprehension of the unique problems that humans bring to systems design.
- An understanding of the fundamental principles of and the multi-disciplinary approach to human factors.
- Practical skills with and knowledge of physical and cognitive assessment tools to assist in the application of human factors in industry.
- Knowledge of workplace health and safety legislation requirements in Australia.
- An appreciation of the need to compromise between human safety, performance, and cost as well as knowledge of tools that will assist in justifying the final compromise.
- A recognition of the number of factors that influence human performance including, but not limited to, social interaction, fatigue, culture, cognitive processing, and differences between humans themselves (physically and cognitively).
- The ability to demonstrate through group and individual work knowledge, appreciation, of and application of human factors in a systems evaluation and design context where the systems may be novel or unknown.

Content
Ergonomic Fundamentals (10%)
- Introduction to the science of ergonomics, ergonomic models and systems approach
- Functional Anatomy and human interaction with the workplace (20%)
- Introduction to anthropometry and biomechanics, and application to work.
- Introduction to physiology
- Human interaction with physical environments (10%)
- Noise and hearing: Function of the ear, principles of sound: standards & Codes of Practice.
- Sight and illumination: Function of the eye, principles and units of light, and use of standards.
- Engineering Psychology (25%)
- Cognitive processing concepts, reaction time, psychophysics and signal detection theory.
Aims & Objectives

- Recognise and assess management processes and their evolution over time.
- Evaluate how managers support the achievement of organisational goals through applying knowledge of environment and internal culture.
- Explore organisational social responsibility and managerial ethics.
- Recognise problems resolved by managers through decision making and apply structured decision-making processes.
- Emphasise planning processes and goal setting to achieve superior performance.
- Evaluate the strategic management of human resources to enhance workforce effectiveness.
- Recognise the need for effective career management and develop a career plan.
- Compare alternative approaches to motivation of work team members.
- Understand the nature of leadership, its application to situations and the challenge posed by the need for innovation.
- Explain the nature and types of managerial communications and their associated communications channels.

Content

- Recognise the underlying importance of group dynamics to effective leadership.
- Apply basic management skills to effectively manage themselves, time, deadlines and their contribution to team based activities.
- Appraise the environmental sustainability challenges confronting engineers.
- Recognise and assess key future direction scenarios for coping with environmental degradation.
- Critically evaluate a chosen Australian sustainability case study.
- Create a formal Brief for executive management on a sustainability issue.
- Recognise community risk created by engineering endeavour and select appropriate risk minimisation strategies.

Textbooks


References


HES3680 Bioprocess Engineering Principles

Aims & Objectives

During the course we aim to:

- To apply fundamental engineering principles such as material and energy balances, fluid dynamics and transport phenomena to analyse processes using biocatalysts.
- To develop an appreciation of the application of the same engineering principles to a variety of industrial bioprocessing problems.

Content

- Stoichiometry of microbial growth and product formation: Elemental balances, degree of reduction, yield coefficients.
- Material balances: Law of conservation of mass, material balances with recycle, bypass and purge systems.
- Energy balances: Basic energy concepts, enthalpy calculations, enthalphy change in non-reactive process, enthalphy change due to reaction, thermodynamics of microbial growth, energy balance for cell culture.
- Enzyme kinetics: Mechanistic models for simple enzyme kinetics, enzyme inhibition, substrate inhibition, effects of pH and temperature, diffusional limitations in immobilised enzyme systems.
- Microbial growth kinetics: Batch growth kinetics, unstructured non-segregated growth models, kinetics of continuous culture.
- Fluid flow: Fluid in motion, Reynolds number, hydrodynamic boundary layers, viscosity, momentum transfer, non-Newtonian fluids, viscosity measurement, rheological properties of fermentation broths.

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• Mixing: Flow patterns in agitated tanks, mechanism of mixing, power requirements for mixing, scale-up of mixing systems, role of shear in stirred fermenters, bubble shear.

• Mass transfer: Role of diffusion in bioprocessing, convective mass transfer, oxygen uptake in cell cultures, oxygen transfer from gas bubble to cell, oxygen transfer in fermenters, mass transfer correlations.

• Heat transfer: Mechanisms of heat transfer, heat transfer between fluids, designs equations for heat transfer systems, sterilisation, batch and continuous heat sterilisation of liquids, sterilisation of air.

Reading Materials

HES3700 Industry-Based Learning
50 Credit Points • Full time employment in relevant industry for 24 Weeks • Hawthorn • Prerequisite: All units in Years 1 & 2 • Teaching methods: Professional practice at the placement, placement supervision, Swinburne academic supervision • Assessment: Written reports, competency attainment program
A unit of study in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
During the unit we aim:
• To complete 48 weeks of full-time paid employment in an environmental health setting.
• To work as an environmental health trainee under the supervision of accredited environment health practitioners and be an effective member of a multidisciplinary team within the industry.
• To complete the placement period with an appropriate level of attained technical competence in environmental health practice as required by the University IBL assessment process.
• To develop and redefine verbal and written communication skills and personal qualities to an appropriate professional standard.

Content
Work requirements are established by the employer in consultation with environmental health staff of the University.

Reading Materials
As suggested by the academic and placement supervisors to support the student’s progress and professional development.

HES3901 Airline Standard Flying Training
0 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Industrial Practice • Assessment: Completion of a Commercial Pilot Licence CPL(A).
A unit of study in the Bachelor of Technology (Aviation) and Bachelor of Technology (Aviation) / Bachelor of Business

Aims & Objectives
To obtain the practical qualification to a standard expected by airlines to practice as a commercial pilot.

Content
CASA 150 hour syllabus employing Standard Operating Procedures as developed by the University’s provider

Reading Materials
As directed

HES4126 Structural Engineering
12.5 Credit Points • 1 Semester • 48 hours • Hawthorn, Sarawak • Prerequisite: HES3125 Design of Concrete Structures HES3124 • Corequisite: Nil • Teaching methods: Lectures (24 hrs); Tutorials (18 hrs); Assignment (4 hrs); Case Study (2 hrs) • Assessment: Examinations (75%), Design Project (25%)
A unit of study in the Bachelor of Engineering (Civil Engineering) and Bachelor of Engineering (Civil Engineering) / Bachelor of Business.

Aims & Objectives
The aims of this unit are to:
• Provide theoretical models for the students to be able to design timber members and connections in accordance with relevant Australian Standards.
• Equip students with knowledge on masonry properties and behaviour and provide methods for designing masonry members.
• Introduce construction techniques common in the Australian industry including composite and lift-up construction.
• Raise the understanding of deterioration of concrete structures and introduce methods for rehabilitation and strengthening.
• Give the students, through a team project exercise, the opportunity to further develop their design skills and also their team and time management skills.

At the end of this unit students will be able to:
• Define the main types, grades and properties of timber.
• Determine the ultimate tensile capacity of timber members.
• Determine the ultimate compression capacity of timber members considering crushing and buckling.
• Determine the ultimate bending moment capacity of a member considering bearing, shear and flexural requirements.
• Design bolted, nailed and screwed timber connections.
• State the characteristics and limitations of masonry.
• Design masonry members in compression and bending.
• Describe composite construction and design simple composite beams and slabs.
• Describe lift-up construction and identify critical stages and components of construction.
• Design simple lift-up panels considering the lifting and handling requirements.
• Describe different forms of concrete deterioration and identify methods for rehabilitating and strengthening concrete structures.
• Work effectively in small groups to design and implement a design software incorporating user-friendly interface, transparent design/analysis module and ready-to-use output.

Content
• Design of Masonry Structures: Types and making of bricks. Masonry design properties, serviceability and durability. Design of members in compression.
Design of members in bending. Design of members in shear.

• Composite Floor Construction: Construction techniques and design criteria. Capacity of simply supported composite beams and slabs.

• Tilt-Up Concrete Construction: Tilt-up and precast concrete technology and application. Structural design including lifting and handling, bracing and connections. Construction issues, including tolerance, formwork, cranes, panel size, transportation and finishes.

• Rehabilitation and Retrofitting of Existing Structures: Concrete deterioration, including corrosion of reinforcement. Methods of assessing concrete properties. Techniques in repairing and strengthening concrete structures.

Textbooks
Standards Association of Australia, Australian Standards for Civil Engineering Students, Part 2: Structural Design, Sydney, Australia, 2002 (Same text book used in HES2125and HES3121)

Lecture and study notes as provided by course coordinator.

Recommended Reading


HES4136 Transport Engineering

12.5 Credit Points • 1 Semester • 54 Hours • Hawthorn, Sarawak • Prerequisite: HES2136 • Corequisite: NIL • Teaching methods: Lectures (36 hrs); Tutorials/field visit (8 hrs); Laboratories (6 hrs); Computer Laboratory Sessions; Assignments (4 hrs) • Assessment: Examination (60%), Team based projects (40%)

A unit of study in the Bachelor of Engineering (Civil Engineering) and Bachelor of Engineering (Civil Engineering)/Bachelor of Business.

Aims & Objectives

During the course we aim to:

• To introduce the students to the different modes and elements of the transport system, the issues considered in assessing and improving the performance of road transport system including sustainability.

• To introduce the students to traffic engineering, traffic studies and planning and traffic management through the use of traffic control devices and intelligent transport systems and their effectiveness of their application in Australia and overseas.

• To develop understanding of the behaviour and mechanistic design of road pavement and understand the factors considered in the design of flexible and rigid pavements.

• To develop analysis and design skills applicable to signalised and unsignalised intersections.

• To introduce design of non-road modes of transport, airports and rail.

• To provide a variety of practical laboratory experiences where students can apply their theoretical knowledge to practical situations and demonstrations.

• To identify the major themes within the unit area and identify current best practice research and literature.

• To develop mathematical knowledge and skills applicable to the content area.

At the end of this unit students will be able:

• To identify and report the effectiveness of some applications of intelligent transport systems in improving traffic conditions and the environment in Victoria/Australia.

• To utilise system approach in designing and conducting a simple traffic survey, analyse the data and report the results.

• To analyse and assess the performance of simple signalised and unsignalised intersections, including roundabouts, through an understanding of priority flows and the use of hand calculations and Sidra software.

• To recognise and apply the principles and objectives of safe intersection layout design using the appropriate standards and include all associated traffic control devices, drainage and lighting and produce a complete set of high standards plans.

• To develop understanding of the behaviour of road pavements, the factors considered in empirical and mechanistic designs and apply the gained knowledge in design different types of flexible pavements using charts and Circly software.

• Demonstrated ability to produce high quality reports.

• To independently organise a team and work cooperatively in a team environment to achieve specified objectives within time constraints.

• Develop knowledge of latest practices in design, materials and traffic management adopted locally and internationally.

• Demonstrated understanding of the impacts of different traffic management applications on traffic operation, social and natural environment and use these criteria for assessing different design alternatives.

• Demonstrated understanding of the principles of sustainability in transportation systems and pavement design.

Content

• Traffic Engineering and Management (20%): Transport modes and elements, performance measures of road transport system including sustainability, Elements of road traffic system and their characteristics, traffic studies and how to plan a traffic study, field methods and analysis for speed and volume studies, types and features of common traffic control devices, role of intelligent transport systems in traffic control and management.

• At Grade Intersections (unsignalised) (30%): Objectives and principles of intersection layout design, capacity analysis for simple signalised and unsignalised intersections and roundabouts, performance assessment and capacity calculations using gap acceptance theory and Sidra, elements of geometric layout, including line-marking and signing.

• Pavement Design (30%): Common terminology related to pavements, behaviour of flexible and rigid pavements, factors affecting the design process, traffic types and calculation of traffic flows for design purposes, design reliability, material properties used in the design, evaluate data on subgrade conditions and select a suitable design CBR, use CIRCLY software in the design of flexible pavements for arterial roads.

• Air and Rail Engineering (20%): Common terminology related to airport and rail, factors involved in airport planning, principles of geometric design to rail design, factors involved in track maintenance.

Recommended Reading

Underwood, RT, Road Engineering Practice, 1995.


http://www.scilsm.com/1097issue/1097/lings.html


http://www.tasonline.com/index.htm


HES4146 Water & Environmental Engineering

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn, Sarawak • Prerequisite: HES3112 Urban Water Resources • Teaching methods: Briefing/ lecture sessions; Group meetings; practice; Projects; Field trips; Web Based subject Presence (Blackboard) • Assessment: Milestones: 10%; Design Report: 45%; Seminar Presentation: 30%; Design File: 15%

A unit of study in the Bachelor of Engineering (Civil Engineering) and Bachelor of Engineering (Civil Engineering)/Bachelor of Business.

Aims & Objectives

• To prepare students in a professional team-working environment.

• To become aware of the current water and environmental related issues by giving students an opportunity to tackle real up-to-date water and environmental engineering projects in practice with the theme of sustainability.

• To provide students with the opportunity to practice their real understanding of knowledge up-to-date and has the ability to convey the knowledge to others.

• To build student's confidence in public speaking and enhance communication skills.

• To recognise the importance of writing and communication skills in engineering profession.

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To operate effectively using a range of media tools and resources.
To appreciate the importance in working collaboratively in a team environment.

At the completion of this subject, students should be able to:
- Plan, manage, coordinate and deliver water and environmental projects from start to finish.
- Integrate sustainable theme in water engineering project appropriately and practically.
- Identify problems in the project and consult productively amongst group members.
- Examine and assess the validity of data and information and correctly locate errors, where appropriate.
- Critically review literature on topics under investigation.

**Content**

Students will carry out a major investigation project in small groups including design, feasibility studies investigation and specification where relevant. Projects will be chosen from current, recent or proposed real projects. Projects are chosen in the fields of water and environmental engineering.

**Reading Materials**

As notified by the lecturer to cover the particular investigation project selected.

**HES4250 Design for Manufacture**

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: 200 credit points • Teaching methods: Lectures (36 hrs); Laboratory (12 hrs); CAD • Assessment: Assignments (40%), Examination (60%)

A unit of study in Bachelor of Engineering (Product Design Engineering) and an elective unit of study in the Bachelor of Engineering (Robotics and Mechatronics) and Bachelor of Engineering (Mechanical Engineering).

**Aims & Objectives**

During the course, we aim to:
- Provide a fundamental understanding of design for manufacture in manufacturing industry.
- Develop competence in the design of tooling, robot grippers, design for assembly and quality control systems.
- Give students the opportunity to develop an understanding of die design and heat transfer mechanisms.
- Provide students with the opportunity to experience peer reviewed oral presentations.
- Develop computer aided drafting skills for design purpose.

At the completion of this unit, students should be able to:
- Understand the need for product features to enable easier assembly.
- Select suitable equipment for transfer of products on assembly line.
- Carry out calculations for decision making in the design of forging dies.
- Design die-set parts for efficient forging of hot, warm or cold products.
- Analyse the need for plastic flow in die cavity.
- Design plastic mould cavity for efficient product manufacture.
- Apply knowledge of industrial robot effectors to manufacturing processes.
- Design drill jigs and fixtures for efficient manufacturing of products.
- Apply Australian Standards to design quality control processes.
- Carry out reliability calculations on block diagram design.
- Completion of computer aided project on parametric design of manufacturing tools.

**Content**

- Design for assembly (10%): Design for assembly, methods of assembly. Feed mechanisms; manual and automated, part transfer, insertion and fastening.
- Design of dies (24%): Design of dies for metal forming processes: forging dies, cold, warm and hot forging, forging sequence. Design of diesets for die casting and plastic moulding, heat analysis.
- Design for industrial robots (10%): Robot end effector design. Robot applications: materials handling, palletising, welding, glueing. Robot dynamics: cartesian and polar configurations, external load, acceleration and forces.
- Design of fixtures and gauges (8%): Locating and clamping, jig types and construction, bushing types and application. Standard fixtures, special fixture designs. Design of gauges.
- Quality control and reliability (16%): Control charts for variable and attribute data, process capability, Pareto diagrams, acceptance sampling, incoming and final inspection, quality rating. Reliability of systems, modes of failure, mean time to failure.
- Computer laboratory (32%): Using parametric and CAD software for tooling design.

**Reading Materials**


**HES4280 Manufacturing Technology 2**

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Completion of intermediate studies. • Corequisite: Nil • Teaching methods: Lectures (49 hrs); Laboratory (4 hrs) • Assessment: Assignments (10%), Examinations (80%), Lab Reports (10%)

A unit of study in the Bachelor of Engineering (Product Design Engineering) and an elective unit of study in the Bachelor of Engineering (Mechanical Engineering).

**Aims & Objectives**

During the course, we aim to:
- To provide the knowledge of processes used in the manufacture of sheet and bulk formed metal, manufacture of plastic products and machined components.
- To expand student knowledge in mathematical analysis of deformation theory in metal forming.
- To provide a variety of practical laboratory experiences to reinforce the theory.
- To develop awareness and skills in the analysis of process parameters in order to achieve quality and productivity in the application of metal forming and polymer processes.

At the completion of this unit, students should be able to:
- Demonstrate knowledge of bulk and sheet metal forming processes.
- Analyse, improve and design metal and plastics components for particular applications.
- Use mathematical knowledge and skills to analyse forces and power required in metal forming and polymer processes.
- Demonstrate knowledge of plastic and composite material, manufacture and the characteristics of major plastic and composite products.
- Understand the deformation mechanics associated with slip line field in metal forming process.
- Understand the importance of economic factors when considering the application of a manufacturing process.

**Content**

- Manufacture of polymeric products (25%): Rheological equations of state for ideal-elastic and solid Hookean materials, Newtonian fluids, Non-Newtonian fluid flow, variation of viscosity and composite materials.
- Polymeric processes (25%): Forming and moulding techniques, extrusion and injection moulding: effect of process parameters Blow moulding: output die requirements, parisons dimensions, swelling considerations. Film moulding: output die requirements, material output consideration, freeze line analysis.

**Textbooks**


**References**

HES4330 Thermodynamics 2
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HES3350 Engineering Mathematics 3A • Corequisite: N/A • Teaching methods: Lectures, Tutorials, Laboratory, Assignments, Exams, Project(s)

A unit of study in the Bachelor of Engineering (Mechanical Engineering) and Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business

**Aims & Objectives**

During the course we aim to:

- Enhance understanding of the heat transfer process and numerical heat transfer with computer applications.
- Develop an appreciation of the design principles in thermo-fluid systems.
- Develop the ability to analyse existing thermo-fluid systems and contribute to new designs.

At the end of this unit students will demonstrate:

- An understanding of the heat transfer process and numerical heat transfer with computer applications.
- An appreciation of the design principles in thermo-fluid systems.
- The ability to analyse existing thermo-fluid systems and contribute to new designs.

**Content**

- Basic Concepts of Heat Transfer (10%): The First Law of Thermodynamics, forms of energy, heat transfer mechanisms.
- Steady Heat Conduction (8%): Heat conduction in plain walls, thermal contact resistance, resistance networks, heat conduction in cylinders and spheres, critical radius of insulation, finned surfaces.
- Transient Heat Conduction (16%): Lumped system analysis, transient heat conduction in walls, cylinders, spheres, semi-infinite solids, multi-dimensional systems.
- Numerical Methods in Heat Conduction (16%): Finite difference formulations, 1-D steady heat conduction, solution methods, 2-D steady conduction, transient heat conduction, controlling the numerical error.
- Forced Convection (16%): Physical mechanisms of forced convection, velocity boundary layer, thermal boundary layer, flow over flat plates, flow across cylinders and spheres, flow in tubes.
- Natural Convection (8%): Physical mechanisms of natural convection, natural convection over surfaces, natural convection in enclosures, natural convection from finned surfaces.
- Heat Exchangers (8%): Types of heat exchangers, the overall heat transfer coefficient, analysis of heat exchanger, the Log-Mean-Temperature-Difference method, the effectiveness-NTU method

**Textbooks**


**References**


**HES4350 Mechanical Systems Design**

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HES3350 Machine Design • Corequisite: N/A • Teaching methods: Lectures (24 hours), Tutorials (24 hours), Assessment: Design Project (30%), Assignment (20%), Examination (50%)

A unit of study in the Bachelor of Engineering (Mechanical Engineering) and Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business

**Aims & Objectives**

During the course, we aim to:

- To develop advanced mechanical design skills applied to more complex and diverse engineering system.
- Team skills through group projects.

At the completion of this unit, students should be able to:

- To develop an appreciation of system design principles in both engineering and nature.
- To develop the ability to estimate the risk and reliability of mechanical systems.
- To gain an understanding of vehicle design through examples from industry.

**Content**

Introduction to systems engineering and design project management (26%)

- Design process.
- Design specifications.
- Engineering requirements.
- Design targets and value analysis.
- Australian and international standards.
- Codes of practice and regulations.
- Introduction to system modelling.
- Design project management.

Risk Engineering (8%)

- Introduction to risk engineering.
- Risk and loss prevention measures.
- Effects on product design, use and occupational health and safety.
- Risk analysis.

System Reliability (8%)

- Reliability and maintainability.
- Instantaneous failure rates and hazard rates.
- Fault and event trees.
- Series, parallel & standby systems.
- Planned maintenance.
- Condition monitoring.

Thermal Systems (8%)

- Idealized systems, working fluids, heat transfer; energy balance.
- Thermo-fluid system models.
- Assessment of commercial viability.

Motive Power Systems (8%)

- Characteristics of motors and loads.
- Matching.

Power Transmission & Storage Systems (8%)

- Mechanical, hydraulic and electrical transmissions: characteristics & losses, practical design.
- Energy storage and conservation.

Fluid Systems (8%)

- Fluid power systems, design characteristics of hydraulic and pneumatic systems, linear actuators, pumps, valves and motors.
- Operational cycles.

Pressure Vessels (8%)

- Pressure vessel design, AS 1210 Unified Pressure Vessel Code, design aspects.
- Computations and submission to authorities.

Environmental issues (8%)

- Control of noise at the source, along the path and at the receiver.
- Industrial and commercial silencing.
- Community environmental constraints.

Vehicle Design (16%)

- Drive train layouts, chassis, suspension, engine selection.
- Guest Lectures by engineers from industry on selected system design topics.

**Textbooks**


**References**

Buley, M, Industrial Noise Control, Swinburne University of Technology, (Class notes).

**HES4510 Investigative Chemistry Prac 3**

12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: At least one of HES2510 Investigative Chemistry Prac 1, HES2515 Investigative Chemistry Prac 2, HES2541 Analytical Chemistry or HES2526 Organic Chemistry. It is also highly recommended that you be enrolled in HES4520 Advanced Chemistry 1 or
Aims & Objectives
During the unit of study we aim:
- To learn new and reinforce previously learnt experimental techniques, while doing experiments related to topics in the HES4500 lectures.
- To develop problem solving skills by attempting to identify compounds from experimental data and spectra.
- To do experiments without being given detailed instructions for all of the steps involved.
- To plan experiments to achieve stated goals and validate the results.

Content
Practical Work:
- Qualitative analysis of an unknown liquid mixture using distillation, physical measurements, infrared spectra, PMR spectra, and mass spectra.
- Synthesis and characterisation of an optically active compound.
- Qualitative analysis using infrared data-handling software.
- Determination of the CMC of a surfactant.
- Qualitative analysis using an ion specific electrode.

Experimental Design and Data Processing:
- Sources of error.
- Goals of experiment.
- Planning to achieve goals.
- Validation procedures.
- Data treatment and presentation.
- Analysis of the data using common sense and statistical tests.

Reading Materials
HES4510 Practical Manual, Swinburne Press

HES4515 Project
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Completion of at least 50% of second year • Corequisite: Nil • Assessment: A unit of study in the Bachelor of Science (Biochemistry/Chemistry), and Bachelor of Science (Biotechnology)

HES4516 Research Project
12.5 Credit Points • 1 Semester • approximately 60 hours • Hawthorn • Prerequisite: Completion of at least 60% of second year, selection of an appropriate research project and supervisor • Teaching methods: Major research project • Assessment: Oral Presentation 20%; Project Report 80%
A unit of study in the Bachelor of Science (Biotechnology), Bachelor of Science (Biochemistry and Chemistry) and Bachelor of Science

Aims & Objectives
During the subject we aim to:
- Investigate the synthesis of new materials, organic synthesis, surface science, water science, etc.
- Undertake research in a topic of current interest to the student.
- Develop the ability to design, plan and execute research experiments.

Reading Materials
Will be advised by the supervisor of the project, and will generally consist of research articles available electronically through the library.

HES4520 Advanced Chemistry 1
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: At least one of HES2510 Investigative Chemistry Prac 1, HES2515 Investigative Chemistry Prac 2, HES2520 Chemistry 3, HES2526 Organic Chemistry, HES2540 Forensic and Analytical Science or HES2541 Analytical Chemistry • Teaching methods: Lectures and practical laboratory • Assessment: One or two topics each worth 25% and all topics will have an examination. Some topics may also include a contribution from an assignment.

Aims & Objectives
During the unit we aim:
- To predict the NMR and MS spectra of organic compounds and deduce structural information from spectra.
- To study the general principles of surface chemistry, ion exchange and stereochemistry.
- To develop an appreciation for ethical and sustainable design in experimental research.

Content
Nuclear Magnetic Resonance (NMR) and Mass Spectroscopy (MS):
- Principles of NMR.
- PMR chemical shifts, areas, and first order splitting patterns.
- Analysis of PMR spectra.
- Compilations in PNR and MS.
- FT instrumentation (IR and NMR).
- Analysis of CMR spectra.
- Principles of MS.
- MS instrumentation.
- Interpretation of mass spectra.

Surface Chemistry:
- Basic principles of surface chemistry
- Surface tension and Young's equation
- Liquid surfaces and interfaces
- Surface tension measurement
- Adsorption at interfaces and contact angle measurement
- Applications to common household and industry examples.

Sterochemistry:
To understand the relationship between structure and properties of organic molecules. Stereo representations, definitions of terms related to molecular geometry, conformational organic properties of molecules, configurations and conformational analysis. Stereochemical effects in organic reactions. Selectivity, prochirality, topolity, current topics.

Experimental Design:
Common flaws in logic when designing experiments. Advanced understanding of the meaning of controls and blanks. Subject will be taught largely by example of experiments which have gone wrong and will emphasise the non-statistical approaches to experimental design.

Ion Exchange:
Ion exchange and solvent extraction. Ion exchange types, the process, effects of pH and capacity. Applications: water softening, decontamination, Silothem, suppressed and single-column high performance ion chromatography. Solvent extraction of drugs and chelated metals. Supercritical Fluid Extraction and Accelerated Solvent Extraction.

Reading Materials
Computers in Chemistry (printed notes), Swinburne Press.
Bowater, IC, NMR and MS (printed notes), Swinburne Press
Harding, IH, Colloid Science (printed notes), Swinburne Press.

HES4525 Advanced Chemistry 2
12.5 Credit Points • 1 Semester • Contact hours will vary depending on the project • Hawthorn • Prerequisite: At least one of HES2510 Investigative Chemistry Prac 1, HES2515 Investigative Chemistry Prac 2, HES2520 Chemistry 3, HES2526 Organic Chemistry, HES2540 Forensic and Analytical Science or HES2541 Analytical Chemistry • Teaching methods: Lectures • Major Project • Assessment: Oral Presentation 20%; Project Report 80%

Aims & Objectives
During the unit we aim to introduce students to important areas of chemistry which have significant, current industrial application and to developing areas in chemistry with substantial, new research and development (value-adding) potential. Students will then choose the areas of study they wish to pursue.
HES4621 Advanced Biochemistry

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Completion of at least 80% of second year including one of HES3621 Introduction to Biochemistry or HES2626 Biochemistry of Genes and Proteins. • Teaching methods: Lectures, web based unit presence • Assessment: Mid semester test (40%), assignments (25%), end of semester exam (35%)

A unit of study in the Bachelor of Science (Biotechnology)/Bachelor of Business, Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology)/Bachelor of Business and Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives

- To present to students detailed examples of how biochemistry and molecular biology techniques are applied in the development of biotechnology.
- To introduce students to regulatory and ethical considerations that apply to biotechnological industries and developments.

Content

- Characterisation of therapeutic targets
- Protein Design
- Molecular Properties
- Active sites
- Ligand: interactions
- Biosynthesis/Interactions
- Liposomes
- Biochemicals/Pharmaceuticals
- Ligand design
- Colloidal Chemistry
- Characterisation of nanoparticles: physical size and surface charge.
- The nature and stability of dispersions, emulsions and foams.
- Coagulation and flocculation.
- Bio colloids - liposomes, vesicles, bacteria and viruses - their physical properties, structure and colloidal characterisation.
- Applications of colloidal systems, e.g. drug delivery.
- The measurement of surface charge and particle size.
- How to make and how to destroy a dispersion.
- Current Topics in Organic Chemistry: Organic chemistry is a very diverse subject with many fascinating innovations which eventually impact on our lives taking place almost unrecognised. From the synthesis and production of huge and complex molecules to development of small biologically active molecules; from specialist polymers to pharmaceuticals. Topics will vary on a yearly basis but those likely to be covered include:
  - New synthetic pathways
  - Nanotechnology
  - Green chemistry
  - Development of therapeutic agents
  - Specialist organic polymers
  - Catalysts in organic synthesis
  - Enzymes in organic synthesis
  - Natural products in organic synthesis
- Separation Chemistry: Separations in HPLC; reverse phase HPLC in depth, amino acid analyses, pre-column and post-column derivatisation, size exclusion chromatograph, peptide and protein separations.
- Environmental Chemistry
  - Chemical processes in water, soil and air.
  - Impact of pollutants and chemical monitoring.
  - Analysis of pollutants in water.
  - Speciation of pollutants and naturally occurring material in water.
  - Complexation and ligand exchange.
  - The Davies equation and the Brown equation for determining stability constants of multiple metal-ligand complexes.
  - Crystal field stabilisation energy.

References

The references for each topic will be advised by the lecturer concerned. In some cases this will take the form of printed notes handed out to students. In other cases, the references will be project dependent.

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and applications, recombinant protein production, directed mutagenesis and protein engineering, transgenic animals.

- Functional and structural genomics, proteomics and related bioinformatics.
- Ethical issues related to biotechnology.
- Environmental roles of biotechnology, sustainable development, bioremediation and biomass utilisation.
- Downstream processing.
- Immunology and Immunochemistry and their applications in chemical and biochemical analyses.
- Spectroscopic analytical methods including NMR and advances in mass spectrometry, ultra-fast laser spectroscopy, MRI and other imaging methods.
- Contemporary techniques in biochemistry e.g. laser confocal microscopy, biosips, microarrays and combinatorial arrays, nanotechnology and molecular motors.
- Patenting and protection of ideas.

HES4528 Environmental Biotechnology
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Completion of at least 60% of second year including one of HES2621 Introduction to Biochemistry and HES2628 Biochemistry of Genes and Proteins. • Corequisite: NIL • Teaching methods: Lectures, Web-Based Unit Presence (Blackboard). • Assessment: Mid Semester Test 30%, Assignments 25%, End of Semester Exam 45%
A unit of study in the Bachelor of Science (Biotechnology).

Aims & Objectives
- To present to students detailed examples of biotechnology.
- To expose students to a number of technologies that are likely to be of importance in future environmental and industrial applications.

At the end of this unit of study students will:
- Describe particular applications of biotechnology.
- Be able to answer questions relating to biotechnology industry practiors and standards.
- Be able to understand the opportunities and limitations of biotechnology.
- Be able to propose sustainable solutions to environmental and industrial problems.
- Be able to include DNA array technology applications in project design.
- Have an understanding of the major components of cellular motility and how they have been used to devise molecular motors.

Content
Content will vary according to modern trends in biotechnology and is expected to include:
- Environmental role of biotechnology in sustainable development including grey water treatment and microbiological safety of greywater.
- Bioremediation and biomass utilisation.
- Plant and Agricultural Biotechnology.
- Microbial Fermentations - organisms, culture conditions, metabolic processes.
- Downstream processing in biotechnology.
- DNA and protein microarrays.
- Human cell growth and Tissue Engineering.
- Nanotechnology and molecular motors.

Reading Materials
Prescribed text to be advised
Selected reading on Library Counter Reserve and electronic reserve. Selected web resources.

HES4641 Practical Biochemistry
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Completion of at least 60% of second year including one of HES2621 Introduction to Biochemistry or HES2626 Biochemistry of Genes and Proteins. • Corequisite: NIL • Teaching methods: Practical classes, Web Based Unit Presence • Assessment: Written Practical Reports (100%)
A unit of study in the Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology)/Bachelor of Business and Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives
The first aim is to have students become competent in the basic experimental techniques of biochemistry and molecular biology including use of vertical and flat-bed gel apparatus, spectrophotometers with data acquisition and analysis by computer, spectrophotometry, and various centrifuges including the ultracentrifuge. Students work in pairs with minimal supervision and are encouraged to solve their own problems of technique. The second aim is to have students become competent in data organisation, presentation and report writing.
At the end of this unit of study students will be able to
- Analyse and assess particular separation processes.
- Describe particular applications of biotechnology.
- Be able to answer questions relating to biotechnology industry practices and standards.
- Be able to answer questions and make predictions based on knowledge of immunological and immunochemical technology.
- Be able to include DNA array technology applications in project design.

Content
A number of experimental exercises, including sulphurhydryl analysis, peptide sequencing, gel electrophoresis of proteins and nucleic acids, preparation and analysis of plasmid DNA, cell fractionation and enzyme assays. Instrumentation used include centrifuges, electrophoresis apparatus, spectrophotometer, spectrofluorimeter, image capture devices.

Reading Materials
A current Practical Manual must be purchased from the Bookshop. A selection of research papers are cited in the practical manual. Selected reading on Library Counter Reserve and electronic reserve. Selected web resources.

HES4646 Biotechnology Research Project
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Completion of at least 60% of second year including one of HES2621 Introduction to Biochemistry or HES2626 Biochemistry of Genes and Proteins. HES4641 Practical Biochemistry highly recommended • Teaching methods: Supervised practical research project. • Assessment: Written report (joint report) (40%), seminar presentation (20%), laboratory work book (individual), supervisor demonstrator assessment - Technical competence demonstrated by the student (10%), understanding the project and contribution of ideas (10%), contribution to the work of the project/ diligence/ enthusiasm and team skills (10%).
A unit of study in the Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology)/Bachelor of Business and Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives
- To develop enquiry skills in an unstructured environment.
- To develop techniques to solve practical problems.
- To develop problem solving skills.
- To develop independence in experimental design and interpretation.
- To develop research skills.
- To present the results of research to peers using multimedia presentations.

At the end of this unit students will have developed laboratory based enquiry skills in a relatively unstructured environment, using the techniques acquired in first semester (HES4641) to solve a problem or achieve a set aim. Students are expected to develop independence in experimental design and interpretation. The aims include the development of report organisation and seminar presentation using PowerPoint or web-based software.

Content
Laboratory-based biochemical research project. Techniques used range across those acquired in the 1st semester subject HES4641 Practical Biochemistry including gel electrophoresis, spectrophotometry, spectrofluorimetry, centrifugation and ultracentrifugation, column chromatography, PCR and molecular biology techniques. Projects may use DNA manipulation or analysis, protein purification and analysis, enzyme analysis, or a combination of those and other techniques common to chemistry, biochemistry and microbiology.

Reading Materials
Various research publications and reprints provided or given as references.
HES4700 Research Skills
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HES102 Introduction to Statistics • Corequisite: Nil • Teaching methods: Lectures, Class Discussion • Assessment: Assignments, Tests
A unit of study in the Bachelor of Health Science (Public and Environmental Health)

Aims & Objectives
• To develop the skills necessary to undertake a research project.
• To assist the student in identifying appropriate research topics and methodologies.

Content
• Identification of proposed research topic, methodology and hypotheses.
• Research preparation: Problem formulation, research design, objectives and scope, ethics.
• Planning strategies, information sources, time management and team work.
• Research methodologies appropriate to the health sciences.
• Literature review: abstracting and paraphrasing, citations and bibliographies.
• Research presentation and follow up: layout, style, press release and follow up strategies.

Reading Materials

HES4705 Research Project
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES4700 Research Skills • Corequisite: Nil • Teaching methods: Staff/Student Consultation • Assessment: Project report
A unit of study in the Bachelor of Health Science (Public and Environmental Health)

Aims & Objectives
• To undertake a research project of relevance to environmental health.
• To provide for practical application of the research principles studied in earlier units.
• To develop teamwork and collaborative skills.
• To develop project management skills.

Content
Students undertake a program of research based on an environmental health topic of their choosing.

Reading Materials
As required by the specific research project.

HES4710 Environmental Health Services Evaluation
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HES1716 Health Policy and Planning • Corequisite: Nil • Teaching methods: Lectures, Group work, Project work • Assessment: Project Report
A unit of study in the Bachelor of Health Science (Public and Environmental Health)

Aims & Objectives
• To develop an understanding of the nature purposes and various approaches in environmental health services evaluation.
• To develop an awareness for the different types of evaluation designs and uses.
• To understand the limitations of evaluation and knowledge and maximise the utilisation of evaluation findings.

Content
• Definitions of evaluation and monitoring.
• Importance of evaluation to EH practice and population health.
• Approaches evaluation, negotiation and planning evaluation.
• Understanding the service program, program logic and framework for action.
• Data collection tools and methods used to evaluate.
• Introduction to the economic evaluation of environmental health services; uses and limitations.

Reading Materials

HES4715 Health Planning and Promotion
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Group Work • Assessment: Assignments, Group Work, Tests
A unit of study in the Bachelor of Health Science (Public and Environmental Health)

Aims & Objectives
During the unit we aim:
• To introduce the concepts and strategies of health planning and promotion.
• To examine the social and cultural factors involved in health planning and promotion.
• To understand the education techniques available in health planning and promotion.
• To review current public health policies.

Content
• A review of the key concepts and strategies in community health, early identification, treatment, disease prevention and health promotion strategies.
• Social, cultural and psychological factors involved in health promotion and disease prevention behaviours.
• Health promotion programs. Opportunities, responsibilities for health educators.
• Multimedia health promotion strategies and techniques.
• Instructional techniques and communication skills for health educators, Needs Assessment Techniques (incorporates Category Two Workplace training and Assessor training).
• Program evaluation strategies, performance indicators.
• Public Health Plans.
• Examination and review of local, national and international health promotion and planning policies and programs.

Reading Materials

HES4716 Health and Environmental Law 2
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES110 Introductory Law and HES210 Health and Environmental Law 1 • Teaching methods: Lectures, Tutorials, Class Exercises • Assessment: Assignments 30%, Class presentations 10% and Examinations 60%
A unit of study in the Bachelor of Health Science (Public Environmental Health)

Aims & Objectives
• To further develop an understanding of the application of legal processes essential to good management techniques.
• To bring an awareness of professional legal responsibility and the cost of administrative negligence.

Content
• Regulatory controls – statutory duties and liability for breach, effective administration procedures and alternatives in regulatory techniques.
• Legal responsibility of business units, contractors and corporate entities.
• The role of the Ombudsman and Committees of Enquiry.
• The Administrative Law Act and review by courts and tribunals of the administrative process, the application of the rules of natural justice, notice and fair hearing, the duty to give reasons, impartiality and bias.
• The rules of evidence, statutory and judicial developments, burden and standards of proof, hearsay, documents, admissions, improperly obtained evidence, competent and compulsory witnesses, expert witnesses, judicial notice, sampling and entry powers, the concept of "legal personality" with corporate defendants.
• Dealing with non compliance including exploring the cultural barriers and improving intercultural communication skills.
Reading Materials

**HES4720 Environmental Management**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Field Visits • Assessment: Assignments, Examinations, Tests

A study in the Bachelor of Health Sciences (Public and Environmental Health), Bachelor of Engineering (Biotechnology) and Bachelor of Engineering (Biotechnology)/Bachelor of Science (Biotechnology). An elective in the Bachelor of Engineering (Biotechnology)/Bachelor of Business, Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology) / Bachelor of Business and Bachelor of Science (Biotechnology) / Bachelor of Arts (Media and Communications)

**Aims & Objectives**

During the unit we aim:

- To study major causes and effects of environmental pollution.
- To examine the dangers inherent in the use of hazardous substances and control measures required to minimise or eliminate hazards.
- To learn how to apply risk assessment in the recognition of environmental hazards.
- To study the effects of soil contamination and remedial measures available.
- To introduce basic ecology in an environmental management context.
- At the end of this unit of study, students will be able to:
  - Discuss the characteristics which make a substance a hazardous substance.
  - Identify the risks of a chemical from its HazChem symbol.
  - Appropriately label a container containing hazardous materials.
  - Identify, discuss and debate environmental issues.
  - Argue the pros and cons of sustainable development.
  - Perform a basic environmental impact analysis.
  - Outline the water management strategy for Melbourne.
  - Discuss and select appropriate waste management strategies.
  - Understand that competition is a greater ecological force than predation.
  - Debate the merits of various soil decontamination strategies.
  - Perform a basic risk assessment for a hazardous material.

**Content**

- Hazardous Substances: Class labelling of dangerous goods. Material safety data sheets, environmental chemical processes in the unpolluted environment (air, water and soil). Test cases.
- Environmental Hazards: Greenhouse effect, ozone depletion, photochemical pollution, acid rain, eutrophication, bioaccumulation.
- Contaminated Sites: Contamination of soil and bioremediation.
- Water Management: Overview of Melbourne's sewage and stormwater systems.
- Waste Management: Primary, secondary and tertiary waste treatment processes. Industrial waste (trade waste, prescribed waste, priority waste) treatment and disposal. Litter control.
- Risk Assessment: Recognition and grading of risks, particularly associated with public and environmental health.
- Sustainable Development: Sustainable development and cleaner production. Recycling technologies.
- Process calculations. Disposal and dispersal of pollutants (air, water, and land).

**Reading Materials**


**HES4725 Occupational Health and Safety**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Demonstrations, Fieldwork • Assessment: Assignments, Examinations

A unit of study in the Bachelor of Health Science (Public and Environmental Health)

**Aims & Objectives**

During the course we aim:

- To create an awareness of the types and nature of occupational hazards prevailing in particular industries.
- To develop an understanding of the specific effects these hazards have on human health.
- To study the legal requirements on employers to create a safe working environment.
- To understand the principles of safe work practices, and the rationale of safety codes.

**Content**

- Workplace hazards. Accident prevention and work-related injuries.
- Employer responsibility, duty of care, responsibility for reasonable precautions.
- Occupational noise and vibration exposure.
- Radiation: ionising and non-ionising.
- Electrical power and electrical appliances.
- Toxic substances: mechanisms of action and pathogenic effects.
- Routes of absorption of toxic substances.
- Evaluation and control measures.
- Safety technology.
- Machine safety, Hazard identification.
- Fire and explosion.
- Chemical safety in the workplace.
- Handling, hazard identification.

**Reading Materials**


**HES4730 Food Safety Principle and Practice 2**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HES2700 Food Science, HES2638 Microbes in the Environment, HES2725 Food Principles and Practice 1 • Corequisite: Nil • Teaching methods: Lectures, Class and Field Exercises • Assessment: Assignments, Examinations, Tests

A unit of study in the Bachelor of Health Science (Public and Environmental Health)

**Aims & Objectives**

During the unit we aim:

- To further develop the knowledge of food science gained in earlier subjects.
- To examine the role and functions of food regulating bodies in Australia.
- To develop food audit and quality assurance skills in the student appropriate to food auditor accreditation requirements.

**Content**

- A detailed examination of food law and policies in Australia. The role and function of the Australian New Zealand Food Authority (ANZFA). Food standards and code development. The Food Standards Code. The role of the
environmental health officer in food safety regulation and supervision.

- Food technology: a detailed study primarily production and concept of co-
  regulation of food manufacturing methods and processes, highlighting
  activities and practices that may prevent or cause health hazards, spoilage or
  contamination.

- HACCP: Plan development and assessment - food manufacturing industry.

- Quality: terminology and definitions.

- Auditing skills. Audit types and stages. Audit reports. The role and
  responsibilities of the food safety auditor (incorporates accredited Quality
  Society of Australasia auditor training).

Reading Materials
ANZFA, Food Standards Code (As amended).
Fellows, PJ, Food Processing Technology: Principles & Practice, Ellis Horwood,
1990.
Hoyle, D, ISO 9000 Quality System Assessment Handbook, Butterworth
Heinemann, 1996.
Morlinoe, S & Wallace, C, HACCP: A Practical Approach, Chapman & Hall,
1994.

HES4740 Environmental Control
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite:
Nil • Corequisite: Nil • Teaching methods: Lectures, Field Visits, Soil Laboratory
Exercises • Assessment: Assignments, Examinations, Tests
A unit of study in the Bachelor of Health Science (Public and Environmental
Health)

Aims & Objectives
During the course we aim:
- To examine the processes of water treatment.
- To study the processes of solid waste treatment and disposal.
- To study reticulated sewage treatment and disposal technologies.
- To introduce land use planning processes and strategies and their application
to environmental health management.
- To examine health issues related to housing and accommodation.

Content
- Physical treatment processes for drinking water and water supply systems.
  Stormwater quality. Circulation and filtration. Plant for swimming pools and
- Solid waste treatment and disposal. Litter control.
- Primary, secondary and tertiary sewage treatment processes in reticulated
  urban systems. Recycling technologies, sustainable development and cleaner
  production.
- Soil classification systems, laboratory and field identification and classification.
  Soil permeability. Percolation and application to on-site sewerage systems
  Introduction to land use planning. Structure and process of planning in Victoria
  including neighbourhood and regional planning.
- Planning scheme surveys including environmental impact assessments.
- Health issues related to accommodation. Statutory controls, Prescribed
  accommodation.

Reading Materials
Department of Conservation & Environment, Water Supply, Department of
NH&MRC, Australian Drinking Water Guidelines, 1996.
World Health Organisation, Health Principles of Housing, World Health

HES4900 Air Transport Pilot Licence 3
12 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite:
HES 1905 Commercial Pilot Licence • Corequisite: Nil • Teaching methods:
Classroom • Assessment: Examination 70%; Assessed work 30%. In addition,
candidates must have achieved CASA CPL to receive a pass in this unit of study.
A unit of study in the Bachelor of Technology (Aviation) and Bachelor of
Technology (Aviation) / Bachelor of Business.
Note: All seven CASA CPL theory examination credits are required for the
student to sit the CASA ATPL theory exams.

Aims & Objectives
To provide the student with an extensive understanding of the purpose, operation
and limitations of navigation systems and methods and an ability to take into
account the importance of the dynamic atmosphere to flight operations up to
Airline Transport Pilot Licence standard.
At the completion of this unit students will:
- Know the environmental and navigation factors that impact on flying
  operations at the ATPL level.
- Be able to safely and accurately plan and monitor navigation activities at the
  ATPL level, under a broad range of environmental conditions.
- Be able to achieve examination credits for the CASA ATPL Navigation and
  Meteorology exams.
- Value the safe and accurate planning and monitoring of navigation activities at
  the ATPL level, under a broad range of environmental conditions.

Content
Global Navigation
Aeronautical charts, time zones, air data instruments, air data computer,
gyroscopic principles, compasses, radio wave propagation, ADF, VOR, DME,
ILS, MLS, ground radar, airborne weather radar, SSR, radio altimeter, route
navigation, route selection, navigation on climb and descent, use of radio
navigations, calculation of track and ground speed. Area Navigation Systems: types
of systems, general principles, RNAV Systems, Inertial Navigation Systems,
High Altitude Meteorology
Structure of the atmosphere, pressure temperature and density, humidity, clouds
and its formation, precipitation, thunderstorms, wind and pressure, local winds,
mountain effects, micro bursts, variation of winds with height, measurement of
visibility, fog, other causes of reduced visibility, airflow icing, engine icing,
reports of icing, properties of air masses, classification of air masses, basic
dynanic analysis, fronts, frontal depressions, non frontal depressions,
anticyclones, stream weather, the tropopause, upper level jet streams and CAT,
upper level weather charts, global pressure distribution, monsoon weather,
tropical storms, meteorological observation methods, Q nudes, in flight
observations, satellite observations.

References
Department of Science and Technology (Bureau of Meteorology), Manual of
Technical Extension Services, (24-055) Air Navigation and Flight Planning 1,
Technical Extension Services, (24-231) Air Navigation and Flight Planning 2,
Publications Trust, 1980.
Civil Aviation Safety Authority, Civil Aviation Orders.
Civil Aviation Safety Authority, Civil Aviation Information Publication.
Civil Aviation Safety Authority, ATPL Syllabus.

HES4901 Air Transport Pilot Licence 2
12.5 Credit Points • Prerequisite: HES1906 Commercial Pilot Licence 1,
HES3901 Commercial Pilot Licence 2 • Teaching methods: Classroom •
Assessment: Examination: 70%, Assessed work 30%. In addition, candidates
must achieve satisfactory progress in their flying training towards the CASA CPL
A unit of study Bachelor of Technology (Aviation) and Bachelor of Technology
(Aviation) / Bachelor of Business.
Note: All seven CASA CPL theory examination credits are required for the
student to sit the CASA ATPL theory exams.

Aims & Objectives
To provide the student with knowledge of heavy jet flight planning and
performance to a level required for operational situations encountered in the
airline industry. To have an ability to take into account the importance of the
dynamic atmosphere to flight operations up to Airline Transport Pilot Licence
standard.

Content
- Advanced aerodynamics: Terminology, aerodynamic forces, shock waves,
  performance and speed, performance and altitude
- Airframe and Systems: Flight controls, landing gear, actuating systems, air
  conditioning and pressurisation, ice and rain protection, fuel systems,
  electrical systems.
- Turbine Engines: Thrust, principles of operation, engine construction, turbo
propellers, auxiliary power units, operational considerations, starting.

- Engine Instruments: Displays, EPR gauge, torque meter, RPM indicator, turbine temperature indicator, fuel consumption, total air temperature (TAT) gauge.

- Flight Instrumentation Systems: Application of computers to aircraft, EFIS, FMS.


- Warning and Recording Equipment: Ground proximity warning systems (GPWS), Traffic Collision Avoidance System (TCAS), Overspeed Warning System, Stall warning, Take-off warning system (TWS), Digital Flight Data Recorder (DFDR), Cockpit Voice Recorder (CVR), Master Warning Systems.

- Human Performance and Limitations: Metabolism, respiratory system and blood circulation, the pressure cabin, human information processing, vision, hearing, equilibrium, integration of sensory inputs, spatial disorientation and illusions, memory, human behaviour, personality, skills, human error and reliability, cockpit management, leadership, communication, judgement and decision making, flying and health.

Textbooks
Aviation Theory Centre, Aerodynamics, Engines & Airframe Systems For The Air Transport Pilot, 2007
Aviation Theory Centre, Avionics and Flight Management For The Air Transport Pilot, 2000
Aviation Theory Centre, Human Factors for the Professional Pilot, 2001

References
Avionics Fundamentals, 1974, United Airlines.
Civil Aviation Safety Authority, Civil Aviation Orders.
Civil Aviation Safety Authority, Aeronautical Information Publication.
Civil Aviation Safety Authority, ATPL Syllabus.

HES4905 Air Transport Pilot Licence 4
12.5 Credit Points • Semester 1 • 3 Hours per Week • Hawthorn • Prerequisites: HES3905 Commercial Pilot Licence • Corequisite: NIL • Teaching methods: Classroom • Assessment: Examination 70%, Assessed work 30%. In addition candidates must have achieved a CASA CPL to receive a pass in this unit.
A unit of study in the Bachelor of Technology (Aviation) and Bachelor of Technology (Aviation) / Bachelor of Business
Note: All seven CASA CPL theory examination credits are required for the student to sit the CASA ATPL theory exams.

Aims & Objectives
To reinforce and increase the students basic understanding of flight rules and procedures up to Airline Transport Pilot Licence standard. Additionally the student will learn the flight rules and procedures applicable to IFR flight. At the completion of this unit students will:

- Know the legal and procedural factors that impact on flying operations at the ATPL and Command Instrument Rating levels.
- Be able to safely and legally conduct flying operations at the ATPL and Command Instrument Rating levels.
- Be able to achieve examination credits for the CASA IREX exam and the ATPL Flight Rules and Air Law exam.
- Value the safe and legal conduct of flying operations at the ATPL and Command Instrument rating levels.

Content
- Instrument Flight Rules: Documentation, flight planning, operational requirements, Meteorological considerations, radio navigation aids, fixing position, departure and approach procedures, circling and missed approach procedures, pilot qualifications and recency, privileges and limitations.

Textbooks

References
Civil Aviation Safety Authority or Jeppeson equivalent of: Aeronautical Information Publication, Civil Aviation Orders, Civil Aviation Regulations, Departure and Approach Procedure Charts, Enroute Charts, Terminal Area Charts.
Avionics Fundamentals, 1974, United Airlines.

HES4906 Air Transport Pilot Licence 3
12.5 Credit Points • Prerequisite: HES1906 Commercial Pilot Licence 1, HES2901 Commercial Pilot Licence 2 • Teaching methods: Classroom • Assessment: Examination 70%, Assessed work 30%. In addition, candidates must have achieved a CASA CPL to receive a pass in this unit.
A unit of study in the Bachelor of Technology (Aviation) and Bachelor of Technology (Aviation) / Bachelor of Business.
Note: All seven CASA CPL theory examination credits are required for the student to sit the CASA ATPL theory exams.

Aims & Objectives
To reinforce and increase the students basic understanding of flight rules and procedures up to Airline Transport Pilot Licence standard. Additionally the student will learn the flight rules and procedures applicable to IFR flight. To provide the student with an extensive understanding of the purpose, operation and limitations of navigation systems and methods at ATPL level. 

Content
- Instrument Flight Rules: Documentation, flight planning, operational requirements, Meteorological considerations, radio navigation aids, fixing position, departure and approach procedures, circling and missed approach procedures, pilot qualifications and recency, privileges and limitations.

Textbooks

References
Civil Aviation Safety Authority or Jeppeson equivalent of: Aeronautical Information Publication, Civil Aviation Orders, Civil Aviation Regulations, Departure and Approach Procedure Charts, Enroute Charts, Terminal Area Charts.
Avionics Fundamentals, 1974, United Airlines.
HES4916 Integrated Safety Management Systems

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES2901 Human Factors and Performance, HES2702 Risk Perception and Analysis and HES2905 Aviation Regulation Environment and Operation recommended • Teaching methods: Class Room • Assessment: Examinations 30% (pass is required), Assignment 50%, Presentation 20%

A unit of study in the Bachelor of Technology (Aviation), Bachelor of Technology (Air Transportation Management), Bachelor of Technology (Air Transportation Management) / Bachelor of Business and Bachelor of Technology (Aviation) / Bachelor of Business

Aims & Objectives

To develop an understanding of the elements of integrated safety management systems. At the completion of this unit, students should understand the basic concepts of integrated safety management systems (ISMS). They should have developed the ability to participate in the implementation and on-going management of ISMS.

Content

Safety Management System:
- Overview: What’s it is?
- Why an integrated approach
- Definitions and terms
- Safety management v quality management
- Cost-benefit analysis - developing the business case for ISMS
- Legal Responsibilities

Elements of a Safety Management System:
- Management commitment
- Policies and objectives
- Organisational structure

Role of the Safety Officer:
- Setting up a Safety Committee
- Hazard and risk management
- Hazard identification
- Risk analysis and defences
- Reporting systems
- Safety education and training
- Audit and assessment
- Documentation

Evaluating and maintaining ISMS:
- Need to evaluate
- What to evaluate
- When to evaluate
- How to evaluate

Case studies

References
Safety Management Systems - What’s in it for You, CASA, 2002
Safety Management Systems - Getting Started, CASA, 2002
Safety Management Training, AC119-165(0), CASA, 2002
Safety Management System for Commercial Operations, CAAC(UK), CAP 712
Introduction to safety Management Systems (TP13739), Transport Canada Safety System Handbook, Federal Aviation Administration
Links to the CAA (UK), Transport Canada and FAA sites can be found on the CASA web site

HES4950 Multi Crew Cooperation Practicum

12.5 Credit Points • 32 Hours simulator, 28 Hours briefing and 20 Hours CRM training • Hawthorn • Prerequisite: HES2905 Commercial Pilot Licence, Practicum 1; HES2950 Commercial Pilot Licence Practicum 2, Recommended: HES2906 Air Transport Pilot Licence 1; HES4901 Air Transport Pilot Licence 2; HES4906 Air Transport Pilot Licence 3 • Corequisite: HES2955 Command Instrument Rating Practicum (may be undertaken prior to HES4950) • Teaching methods: Classroom Theory instructions; Pre and Post-flight briefings; Practical Flight Instruction in Simulator • Assessment: Practical Examination in a Simulator environment

Aims & Objectives

To transition the student from single pilot operations, and develop the skills required for safe and efficient multi crew flight deck operation while consolidating existing instrument flying and technical competence.

Content

Minimum of 32 hours Simulator. During this phase, an additional 28 hours minimum of pre-flight and post-flight briefing is delivered, plus at least 20 hours of Crew Resource Management training. Additionally the student will require at least 2 hours for flight planning for Line Orientated Flight Training (LOFT) sequences.

Reading Materials
GFS CRM Student Manual
GFS MCC Study Guide.
GFS lesson Plans.
Airline/Type specific Normal Checklist.
Airline/Type specific Quick Reference Handbook.
Airline/Type specific MEL/DDG and Special Take Off Procedures Guide.
Jeppesen Airways Manuals, Australia.

References
Civil Aviation Safety Authority, Proposed Safety Regulation part 121 (CRM).
Civil Aviation Safety Authority, Draft CAAP MPL.
Civil Aviation Safety Authority, Draft CAR 125 MPL, UKCAA CAP 737 CRM Training.
Paper - Distillation of CRM in Commercial Aviation.
Robert Helmreich, Ashleigh Merrit and John Wilhelm.
Paper - Threat and Error Management in Commercial Aviation.
Robert Helmreich University of Texas Human Factors Research Team.
Guid of Air Pilots and Navigators, Australian Region, TEM Project.
JAR - FCL, 1.261, AMC FCL, 1.261(a), d)JAR FCL, 1.262
Qantas Airways Flight Administration Manual Volumes 1 and 2.
Qantas B767 Operations Manuals 1 and 2.

The above manuals applicable to Qantas cadet pilot training, For other Airlines, their appropriate manuals can be utilized. EG Previous MCC training for Airlines have been Vietnam Airlines Airbus 320 type using the FCOM, Hainan Airlines B737-300, utilizing Qantas type manuals.

HES4960 Aviation Project

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Completed a substantial part of 2rd year units • Teaching methods: Classroom • Assessment: Assessed work 100%

A unit of study in the Bachelor of Technology (Aviation) and Bachelor of Technology (Air Transportation Management).

Aims & Objectives

To provide students with the opportunity to conduct a major private research exercise in the field of aviation and present the finding to a group forum for critical appraisal.

At the completion of this unit, students will have developed an ability to develop a project requirement, undertake a literary review, formulate discussions and conclusions and present the project findings in a professional manner.

Students will have also developed skills in project time management and if appropriate budget management.

Content

Major private research exercise in the field of aviation and presentation to a group forum for critical appraisal. The research undertaking may be conducted individually or in groups of two or three. Team project work is encouraged and larger group sizes are possible if warranted by the scope of the project. Smaller groups may undertake research on topics that are a subset of a larger topic.

Emphasis will be placed on topics which are supported by industry and lead to innovative studies.

References

**HES4985 Aviation Study Tour**

12.5 Credit Points • 1 Semester equivalent • 15-30 day intensive study tour • Hawthorn • Prerequisite: 100 credit points • Teaching methods: Fully escorted and conducted study tour • Assessment: Journal and Group project

A unit of study in the Bachelor of Technology (Air Transportation Management), Bachelor of Technology (Air Transportation Management) / Bachelor of Business, Bachelor of Technology (Aviation) and Bachelor of Technology (Aviation) / Bachelor of Business.

**Aims & Objectives**

This unit will provide students with an opportunity to build on theoretical knowledge of many aspects of aviation by visiting a number of major organisations in key areas of the industry, across several cultures. The unit will enable students to observe, first-hand, the facilities and operations of major world airports, airlines, manufacturers, regulatory bodies, and air traffic management organisations.

**Content**

The course visits several airports, airlines, aircraft and engine manufacturers, regulators, cultural institutions, and overseas aviation academic institutions in a number of countries. The countries and organisations visited may vary for subsequent trips.

**References**


**HES4970 Current and Future Airl ine Technological Operational Concepts**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES1906 Commercial Pilot Licence 1, HES2901 Commercial Pilot Licence 2 • Teaching methods: Classroom • Assessment: Examination: 60%; Assessed Work: 40%

**Aims & Objectives**

To further develop knowledge of current and future IFR approach technology, this will allow a more seamless transition from Commercial Licence (Aeroplane) to ATPL

**References**

Required Navigation Performance: A flight Operations view, AIRBUS INDUSTRIE.

Getting to grips with FANS: Future Air Navigation System, AIRBUS INDUSTRIE.


GLS Approaches: Coordinated Brief, Qantas, Flight Operations Training, V.1.5 March 2007.


**HES4981 Aviation Business Management**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Classroom Based • Assessment: Group 3 part case study approach 45%; Marketing/ Electronic Analysis 15%, Financial Analysis 15%, Survival Performance Analysis 15%, Examination (3hr) 55%

A unit of study in the Bachelor of Technology (Aviation), Bachelor of Technology (Air Transportation Management), Bachelor of Technology (Aviation) / Bachelor of Business and Bachelor of Technology (Air Transportation Management) / Bachelor of Business

**Aims & Objectives**

• To provide foundation management and business skills applied to aviation.

• To prepare students for both broad based and highly focused business careers.

• To introduce the multi-disciplinary nature of management and the aviation business.

At the completion of this unit, students will have developed an understanding of business strategies and the various marketing, economic and financial influences on these strategies. An emphasis on business results measured by performance, service and quality is a focus of the subject.

**Content**

• Business strategy, objectives and resources

• Human resources and employee relations, and Technological resources in aviation

• Marketing and Economics

• Market analysis, capacity and yield management

• Branding and advertising

• Marketing tools, reservations and travel agents

• Economic factors affecting supply and demand for travel

• Economic concepts

• Financial Management

• Introductory accounting and budgets

• Financial statements

• Cost categorisation

• Direct and indirect costs

• Service and Performance Management

• Service delivery

• Service environment

• Quality, value and organisational response

• Key performance indicators

• Benchmarking

• Competitive advantage

**Textbooks**


**References**

Clark, P, CACs 80 and 82, 100-104 series, CASA, 2001.

Holloway, S, Buying the Big Jets, Ashgate, Aldershot, 1998.


**HES4985 Airspace Management and Air Traffic Services**

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Classroom • Assessment: Examination 50%, Assessed work 50%

A unit in the Bachelor of Technology (Aviation), Bachelor of Technology (Air Transportation Management) and an elective in the Bachelor of Technology (Aviation) / Bachelor of Business and Bachelor of Technology (Air Transportation Management) / Bachelor of Business.

**Aims & Objectives**

To equip both Aviation and Air Transportation Management graduates with the
skills to operate effectively in an International Civil Aviation Organisation (ICAO) model airspace. At the completion of this unit students will have developed an understanding of the development and application of airspace management and air traffic services principles and practices. They should be able to relate this to airline and airport operations understand the relevance to an aviation career.

Content
The units studied in detail will be drawn from the following:
- History of ICAO - how it was formed and why.
- The establishment of airspace based on ICAO recommendations.
- Air traffic flow and operations.
- Air traffic control automation.
- The provision of Air Traffic Services (ATS).
- ATS related Air safety Incidents, Runway Safety.
- Navigation charges, Privatisation and Aviation Cost Recovery.
- ATC Flow Management practices.
- Methods of measuring ATS performance.
- Methods of dealing with airspace and airport congestion.
- Aircraft performance.
- ATC issues in airport planning.
- Impact of aircraft noise.
- ATC Automation, Human Factors.
- ATS Consolidation, TAAATS (The Australian Advanced Air Traffic System).
- The impact of FANS (Future Air Navigation Systems) on CNS/ATM on ATS.

References
Airservices Australia, Aeronautical Information Publication Text.
Handbook of Aviation Human Factors, Part IV.
ATC: Automation, Human Factors in Aviation - VOL: 3,
Part 2 ATC: Automated Systems,
Part 3 ATC Human Factors, Handbook of Aviation Human Factors

HES4490 Aviation Legal Framework
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Class based • Assessment: Individual essay 20%, Individual case study 30%, Examination (3hrs) 50%
A unit of study in the Bachelor of Technology (Aviation), Bachelor of Technology (Air Transportation Management), Bachelor of Technology (Aviation) / Bachelor of Business and Bachelor of Technology (Air Transportation Management) / Bachelor of Business.

Aims & Objectives
- To introduce students to the legal system, and the making of common law.
- To introduce students to International and Australian aviation law and its application to aviation organisations and businesses.
- To provide a legal perspective of consumer competition, and contracts and insurance in aviation.
- At the completion of this unit, students will have developed an understanding of the legal framework influencing aviation in both an international and national setting. Students will have developed an understanding of the role of the regulator governing fair competition and trade, and a basic understanding of contracts and insurance in aviation.

Content
- Constitutional, Institutional, Policy and Political context
- International Air Services
- Environmental issues
- Aviation safety and safety investigation
- Air traffic organisations
- Carriers’ liability
- Air traffic services
- Capital City RPT and GA services
- Trade Practices
- Curtains

Textbooks

References
Annexes to the Chicago convention, ICAO

HES5065 Process Plant Design
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Most of 1st, 2nd & 3rd Year units. • Corequisite: Nil • Teaching methods: A Major Plant Design Project, Lectures, Guest Lectures, Tutorials • Assessment: Class presentations, Research paper
A unit of study in the Bachelor of Engineering (Biotecnology), Bachelor of Engineering (Biotechnology)/Bachelor of Business, Bachelor of Engineering (Biotechnology)/Bachelor of Science (Biotechnology).

Aims & Objectives
- To provide knowledge acquired during the course to the development and design of a new processing plant, from concept evaluation to final production.
- To develop skills in planning, executing and reporting on a major project.

Content
General design considerations:
- Process design development.
- Feasibility studies.
- Flowcharts.
- Process design strategy.
- Process design validation.
- Process synthesis.
- Task integration.

Economic analysis:
- Costs, profits and cash flows.
- Cost estimation: capital and manufacturing costs.
- Cost and capacity.
- Types and accuracy of estimates.

Investment and profitability:
- Time value of money.
- Contribution and break-even charts.
- Taxes; Insurance; Inflation; Depreciation.
- Methods for profitability evaluation.
- Optimum design.
- Plant life cycle.
- Accounting and cost control.
- Safety and environmental evaluation.
- Social and environmental impact study.
- Design for sustainability.
- Energy conservation, waste minimization.
- Waste treatment and disposal.
- Occupational health and safety.

Process design:
- Design and costing of major equipment.
- Design optimisation.
- Practical considerations in design.
- Design codes and standards.
- Process control:
- Process dynamics; Instrumentation.
- Quality measurement and quality control.

Plant siting and layout:
- Plant siting and layout.
- Factors to consider: raw materials, water, power and fuel, markets, labour, transportation, climate, waste disposal, safety, future expansion, etc.

Process engineering management:
- Project planning, scheduling and budgeting.
- Contract planning and supervision; contract documents; tendering.
- Organisation of reports.
- Law for engineers.
- Human resource management; industrial relations; negotiation.
- Introduction to risk engineering and loss prevention.

In addition to lectures and tutorials, students will be given a plant design assignment and are expected to submit a design report containing, among other things: statement of problem, final design proposal, environmental impact statement, flowcharts and drawings, material & energy balances, major
equipment list & specifications, plant layout, summary of cost and profit analyses, and design data and calculations.

**Reading Materials**


**HES5102 Research Project**

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: 250 credit points • Corequisite: Nil • Teaching methods: Lectures; Oral presentations and Project-based learning • Assessment: Literature Review, Oral Presentation, Major Research Report

A unit of study in the Bachelor of Engineering (Mechanical Engineering).

**Aims**

By the end of this unit students should be able to:

- Identify the basic principles of academic research and the fundamentals concepts of research.
- Interpret critically evaluate previously published research in a formal literature review.
- Describe the characteristic features of common research methods and debate their relative merits.
- Identify a research question (or project problem/objective) and justify the selection of an appropriate and ethically managed research method.
- Produce a written research/project proposal/report/paper and effectively present information in an oral presentation.

**Content**

Students may select a project from a list prepared by academic staff, or may suggest their own topic based on individual interest, or arising from their period of Industry-Based Learning. The project may be university based or industry based. It may take various forms involving technology research and development, experimental work, computer analysis, industry liaison and business skills. Students are expected to conduct literature and state-of-the-art surveys, formulate and define problems, generate and select solutions, and analyse and prepare designs. Where appropriate, students will build and test their design. Projects are undertaken under the close supervision of a staff member who meets regularly with the students to discuss and assure progress. Total student time spent on the project is expected to be a minimum of 160 hours.

**Reading Materials**

Communication sections from:


**References**


**HES5103 Advanced Research Project**

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HES5102 Research Project • Corequisite: Nil • Teaching methods: Lectures; Oral presentations; Project-based learning; Web-based unit presence (Blackboard) • Assessment: Literature Review, Oral Presentation, Major Research Report

A unit of study in the Bachelor of Engineering (Mechanical Engineering).

**Aims & Objectives**

During the course we aim to:

- To develop collaborative and team work skills.
- To develop project management skills.
- To develop skills in planning and executing an innovative project.
- To undertake a major project and complete the task satisfactorily within time and budget.
- To develop an understanding of the processes of research.
- To demonstrate the ability to integrate knowledge and skills acquired during the course.

- To develop advanced skills in literature review, report writing and oral presentation.
- To develop skills in writing and presenting a major project report.
- To demonstrate the ability to communicate by presenting a professional seminar.

At the end of this course students will be able to:

- To develop skills in planning and executing an innovative project.
- To develop skills in the research of the literature and prior art.
- To develop skills in writing and presenting a major project report.
- To demonstrate the ability to integrate knowledge and skills acquired during the course.
- To demonstrate the ability to complete a full project from inception to achieving stated deliverables.
- To demonstrate the ability to communicate by presenting a professional seminar.

**Content**

The student will be able to:

- Define research.
- Specify roles of student and supervisor.
- Develop a research/project question/objective.
- Develop their Presentation techniques.
- Review the literature.
- Plan a research/project design.
- Understand ethical requirements.
- Write a research/project proposal.
- Understand qualitative and quantitative research methodologies.
- Write a research paper and technical report with corresponding writing skills.

Students may select a project from a list prepared by academic staff, or may suggest their own topic based on individual interest, or arising from their period of Industry-Based Learning. The project may be university based or industry based. It may take various forms involving technology research and development, experimental work, computer analysis, industry liaison and business skills. Students are expected to conduct literature and state-of-the-art surveys, formulate and define problems, generate and select solutions, and analyse and prepare designs. Where appropriate, students will build and test their design. Projects are undertaken under the close supervision of a staff member who meets regularly with the students to discuss and assure progress. Total student time spent on the project is expected to be a minimum of 160 hours.

**References**


Communication sections from:


Further references as recommended by the supervisor to support the student's project.

**HES5108 Research Project**

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: 300 credit points • Teaching methods: Lectures; Oral presentations and Project-based learning • Assessment: Literature Review, Oral Presentation, Major Research Report, Student Performance

A unit of study in the Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Biotechnology/Bachelor of Science (Biotechnology), Bachelor of Engineering (Civil Engineering), Bachelor of Engineering (Civil)/Bachelor of Business, and Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business).

**Aims & Objectives**

During the course we aim to:

- Develop collaborative and team work skills.
- Develop project management skills.
- Develop skills in planning and executing an innovative project.
- Undertake a major project and complete the task satisfactorily within time and budget.
• Develop an understanding of the processes of research
• Demonstrate the ability to integrate knowledge and skills acquired during the course.
• Develop advanced skills in literature review, report writing and oral presentation.
• Develop skills in writing and presenting a major project report.
• Demonstrate the ability to communicate by preparing a professional seminar.

At the end of this course students will be able to:
• Develop skills in planning and executing an innovative project.
• Develop skills in the research of the literature and prior art.
• Develop skills in writing and presenting a major project report.
• Demonstrate the ability to integrate knowledge and skills acquired during the course.
• Demonstrate the ability to complete a full project from inception to achieving stated deliverables.
• Demonstrate the ability to communicate by preparing a professional seminar.

Content
Students may select a project from a list prepared by academic staff, or may suggest their own topic based on individual interest, or arising from their period of Industry based Learning. The project may be university based or industry based. It may take various forms involving technology research and development, experimental work, computer analysis, industry liaison and business skills. Students are expected to conduct literature and state-of-the-art surveys, formulate and define problems, generate and select solutions, and analyse and prepare designs. Where appropriate, students will build and test their design. Projects are undertaken under the close supervision of a staff member who meets regularly with the students to discuss and assure progress. Total student time spent on the project is expected to be a minimum of 160 hours.

Reading Materials
Communication sections from:
Further references as recommended by the supervisor to support the student’s project.

HESS175 Cost Engineering
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: 175 credit points • Corequisite: Nil • Teaching methods: Blackboard / whiteboard presentations; Overhead transparencies; Videos for construction aspects of major projects, with discussion and questionnaire; Individual assignments • Assessment: Assignments, Tutorials
A unit of study in the Bachelor of Engineering (Civil Engineering).

Aims & Objectives
• During the course we aim to introduce the student to the principles and practices of Total Cost Management, and their application to establish, maintain, and achieve time and financial budgets for engineered projects.

On completion of this unit student should be able to:
• Understand the various steps in the life cycle of a project, from concept through evaluation, Go/No Go decisions, execution (engineering & construction), start up and commissioning, operation & maintenance, etc to the end of life activities.
• Be aware of five basic project delivery systems used for project execution, the varying contractual and commercial relationships generally associated with each system, and the advantages / disadvantages of each system.
• Recognize some basic aspects of engineering economics, including the various measures used to evaluate potential projects or compare financial alternatives (eg NPV, NFW), ROR using DCF techniques, and Benefit Cost Analysis, cash and investment flows, inflation and escalation, foreign exchange and hedging.
• Measure basic quantities using AS 1181 - 1992 Method of measurement of civil engineering works and associated building works, and prepares Bills of Quantities.
• Prepare bar (Gantt) charts and logic networks for project execution and manually analyse networks to determine critical paths.
• Recognise the various categories of costs which will be incurred during project execution, including quantity-proportional direct costs (direct labour, construction equipment operating and ownership costs, temporary and permanent equipment and materials, specialist subcontractors), time based and fixed indirect project costs, allowances, contingencies, and mark ups for corporate overheads.
• Understand the various levels of cost estimates prepared during the development of a projects (eg Order of Magnitude/ Preliminary/ Definitive/ Detailed), the different method of preparation used for each level, and the expected accuracy at each level.
• Be aware of some of the key commercial terms of commonly used contract forms, particularly AS 2124 and the AS 4000 series, including tendering provisions.
• Recognise the difference between the ‘permanent works’ required for a project and the often extensive ‘temporary works’ required for its execution.
• Be aware of such techniques as Risk Analysis (AS/NZS 4380-1995), Life Cycle Costing (AS/NZS 4536-1999), Value Analysis, Earned Value, cost codes, WBS, learning curves, etc.
• Understand that a reliable and comprehensive source of technical data on project execution is contained in journals and transactions of professional engineering bodies such as The Institution of Engineers Australia, the American Society of Civil Engineers, the Institution of Civil Engineers UK, etc.

Content
• Projects & project life cycles, from origins to obsolescence.
• Project Delivery Systems & commercial options.
• Introduction to engineering economics.
• Measurement of Quantities (Australian Standard AS 1181).
• Work planning & the development of crews and production rates.
• Work scheduling (bar charts / CPM / PERT).
• Cost Estimation (Order of Magnitude / Preliminary / Definitive / Detailed).
• Commercial aspects of Standards of Contract (AS 2124 and AS 4000 series).
• Preparation of bids / tendering / tender evaluation / contract award.
• Time & cost control during project execution and ongoing activities.
• Supporting cost engineering techniques.

Reading Materials
All course material is currently provided as handouts. To complete some assignments the student will be required to locate, read and extract specific information from a technical paper published by one of the professional engineering organisations (reg Institution of Engineers Australia). Books for general reading covering the construction of specific major projects are identified in the course.

HESS190 Infrastructure Design Project
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: HESS4126, HESS4149 and HESS4136 • Corequisite: Nil • Teaching methods: Lecture/briefing session; consultation • Assessment: Oral Presentation, Major Design Project Based Report
A unit of study in the Bachelor of Engineering (Civil) and Bachelor of Engineering (Civil Engineering) / Bachelor of Business

Aims & Objectives
During the course we aim to:
• Enable students to practise design of the elements of civil infrastructure works and structures.
• Develop the techniques and principles for the evaluation and assessment of design projects.
• Apply such knowledge to a practical design situation, analysing the techniques and data required.
• Enable students to appreciate and evaluate the impact of construction and maintenance on design.
• Further develop team work skills.
• Independently organise a team to achieve specified objectives within time constraints.
• Review your teams work, including comment and editing.
• Gain further experience in the design process, working in a consultancy environment.
• Produce reports of high standard, suitable for presentation to industry.

At the end of this course students will be able to:
• Synthesise knowledge gained in previous years in the course.
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- Analyse a complex problem and propose feasible solutions.
- Understand the influence of non-technical factors on engineering decision making.
- Develop skills in planning and executing a design project.
- Develop skills in writing a major design project report.
- Demonstrate the ability to integrate knowledge and skills acquired during the course.
- Demonstrate the ability to complete a full project from inception to achieving stated deliverables.

**Content**

Students will work in teams on a major project divided into three sections supported by a series of briefings and weekly group consultations. A new real design project is presented each year.

The design report produced will include computations and drawings as appropriate. Students will be given guidance in the theory and practice aimed at coordinating the activities involved. The unit involves the development of formal report writing. The project has three parts:

- **Part 1:** Feasibility, planning, heritage and/or environmental aspects.
- **Part 2:** Structural design and construction aspects.
- **Part 3:** Access, drainage and/or transport considerations.

**References**

References as recommended by the teaching team for the current year’s design project.

**Aims & Objectives**

The aim of this subject is to introduce final year engineering students to the basic principles of infrastructure deterioration and assessment.

During the course we aim to:

- Understand deterioration mechanisms of the structural components and services to civil infrastructure systems.
- Identify how to evaluate their present condition using the appropriate assessment technologies.
- Learn how life cycle performance models are developed and applied.
- Identify the major themes within the subject area and identify current best practice research and literature.
- Develop research and analytical skills and an appreciation of the uncertainties and challenges when working with real infrastructure condition data sets and the influence of non-technical factors on engineering decision making.
- At the end of this subject students should be able to:
  - Recognise and describe the interaction between material properties, environmental factors and loading or usage on the deterioration mechanisms of the various civil infrastructure systems.
  - To apply the knowledge gained in assessing the health and/or services of an infrastructure using the appropriate performance measures and to identify those that have reached the terminal levels for maintenance or rehabilitation treatment.
  - Identify the differences between local and international practice in infrastructure assessment and the limitations in developing reliable deterioration models.
  - Develop an understanding of the negative impacts deteriorated (functional and structural deterioration) civil infrastructure systems would have on the community, the natural and built environments, and the associated costs. Furthermore, to appreciate the importance of developing sustainable infrastructure systems how to apply the principles of sustainability over the whole life of the system.
  - Develop an appreciation of research effort and innovation in infrastructure condition assessment, modelling and data collection technologies (local and international) and identify areas for possible improvements.

**Types of infrastructure considered in this unit include road pavements, bridges, drainage and sewer systems, and water supply systems. Topics covered include:**

- Deterioration of infrastructure elements and services.
- Performance measures and deterioration models used locally and internationally.
- Inspection and assessment technologies.
- Pavements
  - Pavement deterioration through material degradation (asphalt, concrete, crushed rock), and the effects of the interaction between material properties, traffic loading and the environment on pavement deterioration/performance
  - Pavement distress modes used in performance assessment (roughness, rutting, cracking, loss of texture, strength, ravelling and potholing). What are they? Why are they important in performance assessment? What characteristics are reported in condition surveys? Examples of maintenance and rehabilitation techniques.
- Condition surveys for highway and local pavements, where, when and how often are they performed? Sample selection, method of collection, automated and visual inspection.
- Technologies/equipment used in condition data collection, multi-laser profiler, non-destructive testing, accelerated load testing, etc.
- Performance indicators used locally and internationally to assess the functional and structural performance of road pavement. The international roughness index, pavement serviceability index, pavement serviceability rating, structural condition index, structural number, pavement condition index.
- Performance/deterioration modelling, modelling techniques, typical initiation and progression models for rutting, cracking, potholing and roughness. HDM-4 aggregate and incremental models and ARRB TR models.
- Drainage and Sewer Systems
  - Types of materials used and their deterioration mechanisms.
  - Problems: structural (manholes, pipeline), deterioration, pipe deficiency, joint leaks, soil condition, infiltration, inflow and hydraulic capacity.
  - Condition monitoring technologies - indirect and direct.
  - Rehabilitation methods - non-structural, semi-structural and structural.
  - Parameters used in modelling pipes deterioration/rupture, modelling techniques and available models.
- Water supply systems
  - Pipes and valves, types of materials used, plastic, concrete and cast iron, deterioration mechanisms, blowout holes, cracking, splitting etc.
  - Problems, corrosion, low pressure, quality of water, soil movement, and over deflection.
  - Pipe joint pulling, inoperable valves and hydrant, aging and poor maintenance.
- Failure analysis, failure modes (structural and physical models), causes and consequences of failure, determining the probability of water main failures.
- Inspection and data gathering, non-destructive techniques, remote field inspection for metallic pipes, acoustic emission monitoring and transmission coupling inspection for PCCP.
  - Rehabilitation strategies: cathodic protection, trenchless technology, parallel main, slip lining.
  - Pipe deterioration modelling and models in use, modelling techniques, holistic approach to modelling.
- Bridges and Building Structures:
  - Types, geometry, articulation, components and materials, timber, steel, concrete and composites.
  - Causes of damage/deterioration, delamination, spalls, scaling, cracking, corrosion, deck deterioration, deck joints, bearings etc. Traffic and environmental information, historical design and construction data.
  - Inspection, levels of inspection, visual, non-destructive testing, sample selection.
  - Bridge assessment, risk analysis and reliability analysis, Theoretical analysis.
  - Static and dynamic load testing, laboratory based research, material properties and relationship to capacity, relationship between bridge deterioration and reduced load capacity, road safety, traffic and environmental considerations.
- Bridge condition assessment and rating, performance measures and technology used in condition and inventory data collection.
- Bridge information and management systems, whole of life costing and other economic considerations, maintenance, rehabilitation and replacement, reliability based assessment and management.
• Modelling, parameters considered and available bridge deterioration models, deterioration models under different loading and environmental conditions.

Textbooks
Unit notes posted on Blackboard

References

Recommended Reading

HES5192 Coastal and Maritime Engineering
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: Nil • Teaching methods: Lectures, Tutorials • Assessment: Assignments, final test

Aims of the Course
The aims of the unit are to:
• Introduce Coastal and Maritime Engineering as a branch of Civil Engineering.
• Equip students with knowledge on coastal and marine processes which can affect engineering structures and other engineering applications.
• Develop the ability to estimate and analyse relevant properties of the marine medium.
• Raise the awareness and understanding of students about coastal and maritime engineering applications.
• Provide theoretical models for the students to be able to utilise in coastal and marine engineering applications.

At the completion of this unit, students should be able to:
• Demonstrate a knowledge of the fundamentals of mechanics of relevant ocean processes.
• Demonstrate an understanding of the engineering issues in the ocean environments.
• Demonstrate the ability to analyse existing coastal and maritime designs and contribute to new engineering applications in this field.

Content
Purpose and scope of Coastal and Maritime Engineering, wave theory, statistical description of waves, wave modelling, SWAN (Simulating Waves Nearshore) model, wave impacts on coastal and engineering structures, sediment transport and other engineering nearshore and deep-water processes and applications.

Reading Materials
Holthuijsen, LH Waves in Oceanic and Coastal Waters Cambridge Press, 2005

HES5195 Infrastructure Management Project
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: Successful completion of HES5191 Infrastructure Deterioration and Assessment • Teaching methods: A series of lectures and weekly meetings with supervisor • Assessment: Written Report: 60%, Seminar Presentation: 40%

Aims of the Course
• To synthesise knowledge gained in previous years in the course
• To gain knowledge in the different management aspects of civil infrastructure systems

• To learn about the practice in Victoria from the experiences of the keynote speakers
• To understand how whole of life issues impact on decisions for maintenance and rehabilitation of civil engineering infrastructure
• To examine factors affecting choices in service provision: technical, financial, environmental, societal, risk.
• To examine techniques for the management of civil engineering infrastructure
• To learn to treat each stage in the life of a civil infrastructure system as a part of an integrated process of evaluation.
• To develop teamwork and communication skills required for multi-disciplinary civil and environmental engineering projects
• To independently organise a team to achieve specified objectives within time constraints
• To develop research and report writing skills and produce reports of high standard

Content
The aim of this subject is to learn about the factors considered and techniques adopted in the different phases of managing the life cycle of a civil infrastructure system. Phases of civil infrastructure life-cycle management include planning, programming and budgeting, design, construction, operations, maintenance, repair and renovation, and disposal. Examples of the factors that need to be considered in these stages include design for reliability, maintainability, supportability, and design for whole life; environmental effects; condition assessment, condition indices and needs analysis; performance and deterioration modelling and failure analysis; life-cycle cost and analysis; maintenance and rehabilitation practices; project-level and network-level concepts; prioritisation and optimisation, etc.

As engineers, students will be required to focus on infrastructure as an integrated system, to accurately assess infrastructure needs, assess the risks in the different possible actions to meet the needs of the system and adopt or make the proper decisions that aim at optimising the system’s performance and its environmental impacts (including social).

Recommended Reading

Improved surface drainage of pavements http://books.map.edu/books/nch015/html/R1.html

White, K, Minor, J Deruchere, J 1992, Bridge maintenance, inspection and evaluation

HES210 Industrial Systems
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HETI162 • Teaching methods: Lectures (36 hrs), Tutorial/Project Consultations (12 hrs) • Assessment: Assignments (40%), Examinations (60%)

A unit of study in the Bachelor of Engineering (Product Design Engineering) and an elective unit of study in the Bachelor of Engineering (Mechanical Engineering).

Aims of the Course
Aims of the course can be identified as follows:

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To understand manufacturing systems in a market-driven context.
To understand the approaches, tools and techniques necessary for successful operation of manufacturing systems.
To decide on and select suitable sensors for collection of data from a manufacturing process.
To be able to select suitable control devices for manufactured products.

At the completion of this unit, students should be able to:
- Demonstrate an understanding of the development of manufacturing strategy.
- Have an understanding in design and planning of factory layout.
- Apply Just-in-time and other scheduling techniques in a manufacturing environment.
- Ability to select and apply the most suitable sensor devices in a manufacturing process.
- Have an understanding in some of the basic measuring principles and data acquisition required in a manufacturing environment.

Content
Manufacturing systems (50%)
- Structured analysis and design techniques.
- Fundamental issues in manufacturing systems.
- Competitiveness and manufacturing.
- Manufacturing environment.
- Manufacturing operations.
- Concurrent engineering.
- Manufacturing decisions.
- Decisions and uncertainty.
- Planning and design issues.
- Introduction to types of facility layout.
- Material resources planning.
- Material requirement planning, managing job and batch operations.
- Scheduling techniques, Just-in-time, support functions.
- Total quality management, quality management.

Sensor Technology (25%)
- Introduction to automation and control systems.
- Data acquisition and processing.
- Sensor types and their limitations.
- Application of sensor technology.
- Product control devices (25%)
- Programmable logic controllers.
- Proportional, Integral and Derivative (PID) Controllers.

Textbooks
There is no set textbook for this unit, but the books listed below will be useful.
Additional materials will be recommended in lectures and tutorials.

References
Tooley, M., PC-Based Instrumentation and Control. BH Newnes, 1993.

HES5250 Robot System Design
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: Completion of at least 2.5 years of any engineering course • Teaching methods: Lectures, Tutorials, Laboratory • Assessment: Assignments, Examinations
A unit of study in the Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Robotics and Mechatronics) Bachelor of Engineering (Robotics & Mechatronics) & Bachelor of Science (Computer Science & Software Engineering), and an elective in Bachelor of Engineering (Mechanical Engineering).

Aims & Objectives
During the course we aim to:
- Provide a general understanding of the role of Robotic Technology in industry
- Learn how to analyze and synthesise an articulated robot arm
- Learn how to design an automated assembly task
- Gain practical experience in designing an automated robotic movement
- Develop the understanding of how the selection and application of different robots can meet various manufacturing requirements
- Develop the ability to combine various elements of automation to create systems which improve manufacturing productivity (hand-eye coordination).
- Develop an appreciation of the social and financial impact of decisions relating to implementation of automation, particularly robotics.
- Be able to design Pneumatic and Hydraulic circuits.
- Develop the knowledge of advanced automated processes in industry.
- Develop awareness and skills in the analysis of process parameters in order to achieve quality and productivity in the application of these technologies.
- Provide a variety of practical industrial examples where students can apply their theoretical knowledge to practical situations and demonstrations.
- Identify the major themes within the subject area and identify current best practice research and literature.
- Develop analytical knowledge and skills appropriate to the content area.

At the end of this course students will be able to:
- Demonstrate an understanding of the modern robotic technology utilised in industry.
- Apply laser technology to automate manufacturing process.
- Apply machine vision to automate robotic assemblies.
- Be able to utilise laser measurement devices for robotic application.
- Demonstrate an understanding of social and financial impacts of using robotic technology for automation.
- Be able to design and analyse pneumatic and hydraulic circuits.

Content

Reading Materials

HES5290 Advanced Technologies
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: 250 credit points • Corequisite: Nil • Teaching methods: Lectures; Laboratory: 2x2 hour computer laboratories; Assignments; Web-based subject presence (Blackboard) • Assessment: Assignments, Examinations
A unit of study in the Bachelor of Engineering (Robotics and Mechatronics); Bachelor of Engineering (Robotics and Mechatronics) & Bachelor of Science (Computer Science and Software Engineering), and an elective in the Bachelor of Engineering (Product Design Engineering) and Bachelor of Engineering (Mechanical Engineering).

Aims & Objectives
During the course we aim:
- To develop the knowledge of advanced manufacturing processes in industry.
- To develop awareness and skills in the analysis of process parameters in order to achieve quality and productivity in the application of these technologies.
- To provide a general understanding of the role of Manufacturing Technology in industry and how the selection and application of different technologies relates to a range of manufacturing requirements.
- To provide a variety of practical industrial examples where students can apply their theoretical knowledge to practical situations and demonstrations.
- Identify the major themes within the subject area and identify current best practice research and literature.
- Introduce students to a variety of theories outlining: the significance of the advanced material processing in modern manufacturing techniques; the use of laser technology in modern manufacturing technology; the application of advance robotic technology and Non-destructive testing techniques in modern manufacturing practice; the use of satellite for navigation (GPS) and its application in industrial robots; the interaction between manufacturing, material and properties in the context of economically and environmentally sustainable technology.

Swinburne University of Technology | Undergraduate Course Handbook 2008
To develop analytical knowledge and skills appropriate to the content area. At the end of this course students will be able to:
• Demonstrate an understanding of the modern non-destructive testing and evaluation methodologies.
• Apply laser technology to improve manufacturing process.
• Utilise laser measurement devices for robotic application.
• Use Global Positioning System (GPS) information for robotic navigation.
• Apply modern surface technology to manufacturing process.

Content
Modern manufacturing:
• Non Contact Testing and Inspection.
• Surface engineering: Vapour deposition and diffusion processes, Vacuum heat treatment, high speed machining, and properties of metals.
• Laser based technology: laser cutting, hardening, glazing and cladding, micro and nano machining, Laser applications and process parameters.
• High energy processing, high power laser.
• Thermal spray technology: theory, practices and coatings.
• Surface engineering: plasma nitriding, nitrocarburising, duplex coatings.
• Load bearing capacity, Hertzian stress calculation.

Robotic technology:
• Human Computer Interaction
• Visual Data Analysis
• Robot navigation and use of satellite positioning data
• Intelligent robotics

Reading Materials

HESS5310 Machine Dynamics 2
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite:
HESS310 Machine Dynamics 1 • Corequisite: Nil • Teaching methods: Lectures (36 hrs); Tutorials (18 hrs); and Laboratory (9hrs) • Assessment: Tests (15%), Laboratory Assignment (15%), Examinations (70%)

A unit of study in the Bachelor of Engineering (Mechanical Engineering), Bachelor of Engineering (Mechanical Engineering) / Bachelor of Science and Master of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering) and the Bachelor of Engineering (Robotics and Mechatronics).

Aims & Objectives
During the course, we aim to:
• To develop the ability to solve problems involving the analysis and synthesis of mechanisms and machines.
• To develop the ability to design viable mechanism solutions to real, unstructured engineering problems.

At the completion of this unit, students should be able to:
• Understand the analysis and synthesis of mechanisms and machines.
• Ability to design mechanisms for real, unstructured engineering problems.

Content
Kinematics of mechanisms (35%)
• Analysis of linkages and four-bar slider crank.
• Transmission angles, toggle positions.
• Types of kinematic synthesis, precision points, two position motion generation by analytical synthesis.
• Matrix solution, three position motion generation, examples of analytical linkage synthesis.
• Velocity analysis, instant centres, velocity analysis with instant centres.
• Centroids, slip velocity, examples of analytical solutions for velocity analysis.
• Acceleration: Graphical acceleration analysis.
• Examples of analytical solutions for acceleration analysis.

• Acceleration of any point on a linkage.
• Mechanics of Machinery (55%)• Cam terminology, SVAJ diagrams, cam design.
• Rolling cylinders, law of gearing. Gears: interference and undercutting, gear trains & transmissions.
• Review of the fundamentals of dynamics.
• Analysis of linkages.
• Balancing forces and shaking torque, flywheels.
• Balancing of a four-bar linkage, measuring and correcting imbalance.
• Slider-crank kinematics.
• Gas force and gas torque, equivalent masses, inertia and shaking forces and torques.
• Pin forces and balancing in the single cylinder engine.
• Design trade-offs.
• Engine Dynamics (10%)
• Engine kinematics, flywheels, balancing.
• Design tradeoffs and ratios.
• Free and forced vibration of systems (20%)
• Vibration of continuous system: beams and torsion analysis.

Textbooks
Norton, RL. Kinematics and Dynamics of Planar Machinery, 3rd edn, Prentice-Hall, 2003
Thomson, WT. Theory of Vibration with Applications, 4th edn, Prentice Hall

References
Wilson, GE, Sadler, JP & Michels, WI, Kinematics and Dynamics of Machinery, Harper Row.

HESS320 Solid Mechanics
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite:
HESS2120 • Teaching methods: Lectures; Tutorials; Laboratories • Assessment: Assignments, Examinations, Laboratory Practical Test, Tests

A unit of study in the Bachelor of Engineering (Mechanical Engineering) and Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business

Aims & Objectives
During the course, we aim:
• To enhance the ability to synthesise and solve problems involving force equilibrium, deformation and stressing of machine components and structures.
• At the completion of this unit, students should be able to:
• Enhance the ability to synthesise and solve problems involving force equilibrium, deformation and stressing of machine components and structures.
• Analyse the stresses and deflection of plates and some thin walled tubes.
• Solve problems involving elementary plasticity.
• Use finite element package for stress and deformation of practical machine components and structures.
• Understand common experimental stress analysis methods.

Content
• Variation of stress and strain (10%): Plane stress equilibrium equations in terms of Cartesian and cylindrical co-ordinates, strain-displacement relations, compatibility equations.
• Applications of the equilibrium and strain-displacement equations (16%): Stresses in a beam; stresses in a thick-walled cylinder; shrink-fit assembly, compound cylinder, rotating discs.
• Elementary plasticity (16%): Plastic bending and torsion of beams; thick-walled cylinder, rotating disc; residual stress.
• Thin plates and shells (20%): Classical equations of elastic plate and shell theory, plate subjected to uniform pressure, plate with central circular hole, solid plate central concentrated force, other forms of loading and boundary conditions, axi-symmetrical thin shells, local bending stresses in thin shells, bending in cylindrical tanks.
• Buckling Instability (8%): Revision of buckling characteristics for real struts, eccentric loading of slender columns, empirical formulae for design. Compression and shear buckling of thin plates. Local buckling.
• Finite element analysis (20%): Revision of principle of the finite element method, for beams and solids, modelling techniques, examples of advanced finite element analysis.
• Experimental stress analysis (10%): Strain gauge applications, dimensional...
Advanced Turbomachinery (18%)

At the completion of this unit, students should be able to:

Aims & Objectives

A unit of study in the Bachelor of Engineering (Mechanical Engineering) and Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business.

During the course, we aim to develop:

• To enhance understanding of fluid behaviour through application of dimensional reasoning, drag and lift considerations, boundary layer theory, compressible flow theory, measurement techniques and pump and turbine theory, computational fluid dynamics and computer applications and simulations.

At the completion of this unit, students should be able to:

• Understand fluid behaviour through application of dimensional reasoning, drag and lift considerations, boundary layer theory, compressible flow theory.

• To develop an appreciation of the design principles in thermo-fluid systems.

• To develop the ability to analyse existing thermo-fluid systems and contribute to new designs.

Content

Drag and Lift (20%)

• Basic considerations

• Drag of two-dimensional bodies

• Coefficients of drag

• Vortex shedding from cylindrical bodies

• Streamlining, drag of axisymmetric and three-dimensional bodies

• Terminal velocity

• Effects of compressibility on drag

• Lift: circulation, airfoils

• Airfoils of finite length

• Drag and lift on road vehicles

Surface Resistance (18%)

• Surface resistance with uniform laminar flow

• Qualitative description of the laminar and turbulent boundary layer

• Quantitative relations for the laminar and turbulent boundary layer

• Boundary layer control

Compressible Flow (20%)

• Wave propagation in compressible fluids

• Mach number relationships

• Normal shock waves

• Isentropic compressible flow through a duct with varying area

• Compressible flow in a pipe with friction

Flow Measurements (8%)

• Instruments for the measurement of velocity

• Pressure and flow rate

• Measurement in compressible flow

Advanced Turbomachinery (18%)

• Propeller theory

• Axial flow pumps

• Radial flow machines

• Specific speed

• Suction limitations

• Turbines

• Viscous effects

Computational Fluid Dynamics (16%)

• Finite difference equations

• Discretisation techniques

• Viscosity variations

• Incompressible and compressible flows

• Unsteady flow modelling

• Introduction to CFD computer packages

• CFD modelling project

• Computer-based pipe network analysis and design

Textbooks


References


HES5350 Product Design

During the course, we aim to develop:

• An understanding of the product design cycle.

• An appreciation of design principles in both engineering and nature.

• The ability to creatively design quality products for a sustainable environment.

At the completion of this unit, students should be able to:

• Design products creatively while applying engineering design principles.

• Apply principles of human factors, ethics and environmental factors in product designs.

• Work in groups or individually in their pursuit of innovative product design.

• Implement value design in for optimum product cost.

• Predict variability and quality of proposed designs using numerical, analytical and experimental methods.

• Apply probabilistic methods to create robust product designs.

Content

• Design process (8%): Market needs, Concept generation, Conceptual blocks, evaluation and selection. Design creativity, aids to creative problem solving.

• Design constraints (8%): Customer requirements, cost, standards, ethics, legality. Human factors, performance.

• Design for sustainability (8%): Product design and the environment, Design with renewable resources, design for recyclability or disposal. Design from nature.

• Estimation in design (8%): Estimation, dimensional analysis, similarity, worst case analysis, upper and lower bounds. Extrapolation of models, sensitivity analysis.


• Value Design (16%): Concept of value design. Value analysis techniques. The value design job plan.

• Building mathematical models for design (8%): Identification of failure modes and failure variables. Top-down modelling. Examples.


Aims & Objectives

- Experimental design (8%): Level orthogonal designs. Scaling. Determination of significant effects.

Reading Materials

HES5370 Automotive Electronics
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: HET182 Electronic Systems • Corequisite: Nil • Teaching methods: Lectures, tutorials, hands-on laboratory sessions, guest lectures by experts from industry, other research laboratories • Assessment: Assignments, Examinations, Labs
A unit of study in the Bachelor of Engineering (Mechanical Engineering) and Bachelor of Engineering (Robotics and Mechatronics).

Aims & Objectives
Introduce students to the electronics systems onboard an automobile. This unit will have the following objectives:
- To bring awareness of a variety of electronic systems used in automotive applications.
- To develop an understanding of the challenges that automotive environment presents to the systems designer.
- To present an overview of future technologies in the field.
- To create an awareness with the automotive designer about the impact that electronics systems have on mechanical design.

Content
- Automotive electronics basics (24%): Investigate the basics of electronic systems used in automotive applications such as ECU systems, trip computers, ABS, EBD, ESP and active control systems and data bus systems.
- Sensors (24%): Sensors and their role in both control and testing.
- Design (24%): The design of a basic automotive electronics system.
- Future technologies (24%): Analysis of future technologies such as collision avoidance, hybrid propulsion, active stability control.

Textbooks
Bosch, R., Bosch Automotive Handbook, Publisher - Robert Bentley, ISBN - 0 8376 5513 6

HES5380 Engineering Management 2
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: 100 credit points • Corequisite: Nil • Teaching methods: Lectures, Tutorials, Assignments • Assessment: Participation (15%), Assignments (45%), Examinations (40%)
A unit of study in the Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Civil Engineering), Bachelor of Engineering (Mechanical Engineering) Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering) / Bachelor of Engineering (Product Design), Bachelor of Engineering (Telecommunication and Internet Technologies), and Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering).

Note: No prerequisites are required for students undertaking this unit in the: BEEng(Telecommunications & Internet Technologies); the BS(Computer Science & Software Engineering) BEEng(Telecommunications & Internet Technologies); and the B(Computer Networks & Computing) BEEng(Telecommunications & Internet Technologies).

Aims & Objectives
During the course, we aim:
- To provide an extending engineering management skill set to prepare candidates for the management requirements of engineering projects and finance and accounting activities.
- To emphasise that competence in engineering management, business and social responsibility are essential components of the profession of engineering.

To engender the knowledge, skills and attitudes required for successful engineering practice.
- To introduce the concepts of literature review and thesis writing.

At the end of this unit students will be able to:
- Recognise and assess management requirements of project initiation, implementation and termination.
- Understand the importance of project selection and selection models.
- Appreciate the role, task, functions and characteristics required of an effective project manager.
- Assess the merits of alternative project organizations and select an appropriate organisation for a specific project.
- Plan a project including the creation of a statement of work, a work breakdown structure and an appropriate set of supporting work packages.
- Create a network diagram to represent a project and the logical inter-relationship of activities within a project.
- Apply appropriate network techniques such as PERT and CPM.
- Assess risk inherent within a project based on both critical paths within the project and time variation within project activities.
- Crash a project when shortened completion deadlines are required.
- Allocate resources to project work packages.
- Schedule work packages.
- Apply resource loading and resource levelling techniques for optimal outcomes within a project.
- Recognise the practices for project budgeting and cost estimation.
- Develop an appropriate project cost accounting system and measures of project performance.
- Explain the role and nature of accounting and distinguish between finance and accounting.
- Create and evaluate measures and reports of financial position for a business enterprise.
- Create and evaluate measures and reports of financial performance via P&L accounts.
- Identify and explain the nature of limited liability companies and their accounting rules.
- Create and evaluate measures and reports of cash flows via Cash Flow statements.
- Analyse and interpret financial statements via major categories of ratios.
- Analyse cost-volume-profit and margins for financial and business decision.
- Deduce full unit cost in both single and multi product/service environments.
- Use a budget to provide a means of exercising control over a business.
- Explain and apply investment appraisal methods to decide on an investment opportunity.

Content
Engineering project management (40%)
- Project initiation-acceptance-definition
- Project analysis-planning-scheduling-control
- WBS-work packages-budgeting-costing-contracts
- Contract planning, control, documentation, specifications, cost accounting systems, subcontracts
- Engineering project manager roles, characteristics, traits, ethics

Accounting for engineers (20%)
- Principles of accounting, financial statements, analysis, cash management, capital expenditure, depreciation and budgets
- Cost accounting: product process, project overheads
- Standard and marginal costing
- Break-even analysis
- Project estimating, costing, budgetary controls

Engineering finance (20%)
- Financing of engineering projects. Sourcing: capital accounting-lending institutions, venture capital, share capital
- Investment criteria, taxation, planning and financing engineering products, capital budgeting and financial risk assessment
Law for engineers (10%)
- Legal practice relevant to engineering projects and activities: torts, contracts, tendering, arbitration, breach of contract, contracts management
- Commercial law: sale of goods, intellectual property and its protection, product, professional and criminal liability, trade practices, OH&S obligations

Introduction to literature review and thesis writing (10%)

Textbooks

References

HESS540 Chemistry Honours Lectures
25 Credit Points • 2 Semesters • 12 Hours per Week • Hawthorn • Prerequisite: Acceptance into Honours course. Teaching methods: Lectures, assessment: Tests, assignments and attendance at compulsory lectures
A unit of study in the Bachelor of Science (Honours) (Chemistry).

Aims & Objectives
- To expose students to high-level lectures in the areas of current relevant research within the Faculty of Life and Social Sciences.
- To provide students with skills required for undertaking a postgraduate research program.

Content
The content of the lectures will change as the chemistry research focus changes within the school. Current lectures are in the areas of:
- Capillary Electrophoresis
- Literature Searching
- Experimental Design
- Image Analysis
- Computational Chemistry
- Statistics for Research
- Metal Adsorption
- Colloid Chemistry
- Advanced Organic Chemistry
- Laser Spectroscopy
- Honours Report Writing
- Multimedia Presentation
- Industrial Enzyme Technology
- Industrial Catalysis

Reading Materials
To be notified by the lecturers concerned.

HESS5580 Biotechnology/ Biochemistry Honours Project
70 Credit Points • 2 Semesters • 10 Hours per Week Minimum • Hawthorn • Prerequisite: Acceptance into Honours Course • Corequisite: Nil • Teaching methods: Project supervision • Assessment: Honours report, oral presentation
A unit of study in the Bachelor of Science (Honours)(Biochemistry/Biotechnology).

Aims & Objectives
To gain the skills required to perform scientific research that will make a contribution to the understanding of a particular area of science, and to be able to present the work both in the written format and as an oral presentation.

Content
The content of the research project will depend on the project being undertaken.

HESS5590 Honours Project
75 Credit Points • 2 Semesters • 25 Hours per Week (minimum) • Hawthorn • Prerequisite: Acceptance into Honours Course • Corequisite: Nil • Teaching methods: Project supervision • Assessment: Honours report, oral presentation
A unit of study in the Bachelor of Science (Honours)(Biochemistry/Biotechnology) and Bachelor of Science (Honours)(Chemistry).

Aims & Objectives
To gain the skills required to perform scientific research that will make a contribution to the understanding of a particular area of science, and to be able to present the work both in the written format, and as an oral presentation.

Content
The content of the research project will depend on the project being undertaken.

HESS5640 Honours Lectures
25 Credit Points • 2 Semesters • 1 Hour per Week • Hawthorn • Prerequisite: Acceptance into Honours Course. Corequisite: Nil • Teaching methods: Lectures • Assessment: Tests, Assignment and Attendance at compulsory lectures
A unit of study in the Bachelor of Science (Honours)(Biochemistry/Biotechnology).

Aims & Objectives
To expose students to high level lectures in the areas of current relevant research within the School of Engineering and Science. To provide students with skills required for undertaking a postgraduate research program.

Content
The content of the lectures will change as the biochemistry research focus changes within the school. Current lectures are in the areas of:
- Capillary Electrophoresis
- Literature Searching
- Experimental Design
- Image Analysis
- Computational Chemistry
- Statistics for Research
- Cell Culture
- Expression Systems
- Epidemiology of Enteric Viruses
- Bioremediation
- Bioinformatics
- Honours Report Writing
- Multimedia Presentation
- Industrial Enzyme Technology

Reading Materials
To be notified by the lecturers concerned.

HESS5700 Honours Project
50 Credit Points • 2 Semesters • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Regular consultation between students and an academic supervisor. Assessment: Satisfactory completion of a research report of approximately 12,000 words.
A unit of study in the Bachelor of Health Science (Public and Environmental Health)(Honours).

Aims & Objectives
- To develop project management skills.
- To develop understanding of the research process.
- To develop skills in research report writing.
- To develop collaborative skills.

Content
The Honours Project will be developed by the student under the supervision of an academic supervisor and where appropriate, an industry supervisor. The Honours project will be reported in the form of a written report containing:
- The research problem.
- How the problem was addressed, strategic decisions.
Aims & Objectives
To develop and enhance critical analysis and review skills
To provide a forum for the identification and development of specialised skills relevant to projects undertaken
To provide an opportunity for problem solving and project information exchange
To outline funding, publication and presentation techniques and opportunities for environmental and public health research.

Content
Critical analysis and review of a range of public and environmental health research.
Funding for research including grant proposals and scholarships.
Multimedia presentations of research findings for conferences and posters.
Identifying and achieving specialised skills for specific research projects.
Working with research partners including government, industry, professional associations and educational institutions to achieve best outcomes.

Reading Materials
Relevant Journal articles and Papers

HES595 Automotive Study Tour
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Group Work • Assessment: Poster display, Assignments

Aims & Objectives
To provide students with an opportunity to observe, first-hand, the facilities and operations of major world automotive factories, design houses, suppliers and test facilities.

Content
The tour visits several leading automotive companies, manufacturing plants, design studios, testing facilities, suppliers, cultural institutions, and overseas automotive academic institutions in a number of countries. The countries and organisations visited may vary for subsequent trips.

HES6176 Environmental Sustainability in Construction
12.5 Credit Points • 1 Semester • Hawthorn, Sarawak • Prerequisite: Nil • Teaching methods: Lectures and tutorial or Distance Education and on-line discussions • Assessment: Assignments and participation in on-line discussions

Aims & Objectives
Understand the basic concepts of sustainability, sustainable development and sustainable construction.
Have an appreciation of the international and local regulation developments in the area of sustainability.

Have an appreciation of the causes and effects of climate change.
Understand the effects of energy usage on greenhouse gas production and relevance of energy efficiency in buildings.
Recognise the attributes of different materials and resources used in buildings from sustainability point of view.
Assess and design for good indoor environment.
Assess the functionality, durability and adaptability of buildings.
Understand the impacts of a building on its surrounding environment and vice versa.
Have an appreciation of the practical measures that can be implemented in design.
Gain knowledge on sustainability tools and indicators available, their scopes and limitations.

Content
Sustainability issues: Climate change, Energy, Resources and materials, Indoor Environment, Quality of building services, Outdoor Environment.
Implementation: Strategies, Design Issues, Tools and indicators.

Reading Materials
An extensive list of reading materials is provided with each topic. Many of the reading materials are available on the Internet.

HET1005 Engineering Project
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures (12 hours), Supervised Workshop/Tutorials (24 hours) • Assessment: Project(s)

Aims & Objectives
By the completion of the project unit students will have:
Experience in the work of a professional engineer in a representative context, and shared in the experience of other students engaged in other projects, leading to a more inclusive understanding of the engineering profession.
Developed an appreciation of the social context of engineering work.
Conducted an engineering design project from conception to final product.
Conducted a richer understanding of fundamental engineering concepts through active engagement with these concepts in an application to real-world problems.
Developed problem identification and solution skills.
Developed skills in working as part of a team.
Gained skills in accessing, interpreting and using information from a range of sources.
Improved skills in a range of communication modes.
Developed time-management and organisational skills.
Developed physical skills appropriate to the project type.
Reflected on personal strengths and weaknesses, and developed a better understanding of themselves as learners and individuals moving into an engineering career.

Content
Students will work in groups of 2 or 3 throughout the semester to complete an approved engineering project.
The style of projects possible varies widely, from a multi-team design office approach to a large multifaceted infrastructure problem, to the design and construction of individual machines or electronic devices to meet a specific specialised need.
All projects, however, are assessed using the same range of structures, with strong emphasis on the ability to communicate effectively in written and oral forms not only the final outcome of the project, but also to be able to identify and reflect upon the design process and the associated teamwork issues encountered during the semester.
There are no prescribed texts, though the early lectures will introduce students to a wide range of information resources available through the library, and the procedures for accessing that information. A dedicated engineering librarian is also available to assist students in accessing and interpreting both print and digital information.

HET101 Research and Development Project 1
12.5 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Teaching methods: Project • Assessment: Assignments, Class presentations
A unit of study in the Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
To develop within the student an understanding of the scientific research method, practical research skills, and practical design and development skills in a research environment.

Content
Students will undertake a substantial project, usually as part of a team of students or based within a research group in the university or external industrial research establishment. A variety of projects will be made available to the student. In exceptional cases, students may negotiate to pursue a project of their own with the agreement of the unit convenor. While projects will be of a substantial scientific research nature, they are generally expected to include the need to develop hardware or software systems. A regular seminar series, featuring key internal and external researchers, may be offered. These seminars could cover specific research topics or aspects of research project management and generic research skill development.

HET102 Introductory Physiology
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures and Laboratory Work • Assessment: Assignments, Examinations
A unit of study in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering)Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Arts (Psychology and Psychophysiology), Bachelor of Science (Psychology and Psychophysiology) and Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
To provide a basis for understanding of human physiology.

Content
This unit of study provides preliminary material for medically-oriented courses. Through lectures and practical exercises, theoretical and practical material forming the introductory concepts for the course are presented. These concepts are basic and will provide the student with various skills in writing, scientific method, laboratory techniques, analysis and safety.

Introductory biology, biochemistry, biophysics and physiology. These include: cellular physiology, evolution and homeostasis, physiological control systems, organ and tissue systems, bioenergetics, physiological chemistry, physical principles, introductory immunology and an overview of the physiological systems. This introductory material forms the basis for more advanced studies.

Reading Materials

HET103 Photonics 1
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Tutorials, Laboratory Work • Assessment: Assignments, Examinations, Lab Reports
A unit of study in the Bachelor of Science (Photonics) and Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunication and Network Engineering).

Aims & Objectives
The aim of this unit of study is to provide students with a solid understanding of light propagation, and to introduce them to the fundamental principles underlying the operation of optical instruments. Upon completion of this unit, students should be able to:
• Understand the basic models used to describe light.
• Use these models to explain the phenomena of propagation of light through media, focusing, interference, simple diffraction and polarisation.
• Understand the operation of lenses, mirrors and stops, and how to combine them to form simple optical instruments.
• Describe total internal reflection and how optical fibres can act as light conduits.
• Describe the role of fibre optics technology in the development of modern telecommunications.

Content
• Light as Waves, Rays and Particles.
• Geometric Optics.
• Simple Optical Instruments.
• Fibre Optics.
• Polarisation.
• Interference and Interferometry.
• Fraunhofer Diffraction.

Textbooks

HET104 LAN Principles
12.5 Credit Points • 1 Semester • 59 Hours • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Online self-study augmented by a weekly lecture/tutorial, laboratory work and assignment work • Assessment: Assignment, Online Tests, Laboratory Examination, Written Examination
A unit of study in the Bachelor of Engineering (Telecommunication and Internet Technologies), Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies) Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunication and Network Engineering) Bachelor of Science (Research and Development)/Bachelor of Engineering (Electronics & Computer Systems) and Bachelor of Computing (Network Design and Security) (065).

Note: This unit has replaced HET224 Computer Communications & LANs. Students may only receive credit for either HET224 or HET104.

Aims & Objectives
On completion of the course, the student should be able to:
• Use the OSI model to describe direct point-to-point data communications.
• Address a network, given a topology and starting IP address.
• Describe basic inter-network processes.
• Explain basic electrical and electronic issues in networks.
• Conduct basic network audits.
• Explain the function of network management tools.
• Build a simple network of hosts, cables, hubs, and routers, at layer 1 level.
• Troubleshoot typical physical problems in a small network.
• Compare and contrast the details of Layers 1, 2, and 3 in the context of Ethernet and IP.
• Compare and contrast the details of Layers 4, 5, 6, 7 in context of TCP.
• Compare and contrast IGPs and EIGPs, and IGRP and RIP.
• Compare and contrast static and dynamic routing, routed protocols versus routing protocols, and distance vector versus link state routing.
• Describe the external configuration components of a router, access the router, and test network connectivity.
• Describe and preform a basic router configuration.
• Explain TCP (segment format, port flits, handshakes) and IP (IP datagrams, ICMP, ARP, RARP).
• Address and configure a network.
• Compare and contrast static and dynamic routing, routed and routing protocols, IGPs and EIGPs, and RIP and IGRP.
• Apply Access Control Lists to a Router.
Content
- Networks and Layers, Networking Devices.
- IP Addressing, ARP & RARP.
- Electricity and Electronics.
- Network Management.
- OSI Model, Layers 1 - 7.
- WANs.
- Routing, Using the Router, Router Components.
- Router Startup & Setup, Router Configuration.
- IOS.
- TCP/IP.
- IP Addressing.
- Routing Protocols.
- Access Control Lists (ACLs).

Reading Materials

HET105 Professional Skills - Telecommunications
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak
Prerequisite: Nil • Teaching methods: Lectures, Labs and Tutorials • Assessment: Assignments, Examinations, Journal, Research Paper, Tutorials
A unit of study in the Bachelor of Engineering (Electrical and Electronic Engineering). Bachelor of Engineering (Telecommunication and Internet Technologies), Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Science (Photronics) / Bachelor of Engineering (Telecommunication and Network Engineering).

Note: This unit replaces HET121 Introduction to Telecommunications.

Aims & Objectives
Communications and professional skills:
- To develop an understanding of the nature of engineering as a profession and the social ethical and environmental responsibilities involved in professional practice.
- To develop students' communications skills for their future role as professional engineers.
- To improve students' confidence in expressing ideas and opinions and working as a part of a team.
- Improve the student's ability to gather and use information.
- Develop and improve teamwork skills, particularly team organisation, negotiation and decision-making.

Project component:
- Learn the basics of Schematic Capture and PCB layout.
- Design and construct a simple telecommunications device.

Content
Communications and professional skills (50%):
- What is engineering and what do engineers do?
- History of engineering.
- The culture of the engineering profession and ethical responsibilities.
- Design problem definition and solution.
- The design process.
- The role of communications in engineering.
- Oral communication skills and formal technical report writing.
- Teamwork and team management skills.
- Engineers and the environment.

Project (50%):
- EDA tools, Intro to schematic capture, intro to electronic components and printed circuit board manufacture. PCB layout.
- Build and test project, oral and written reporting of project results.

References

HET113 The Internet and World Wide Web 1
12.5 Credit Points • 1 Semester • Average of 2.5 Hours per Week • Hawthorn, Sarawak
Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lecture, Laboratory-based Exercises and Practical Work • Assessment: Assignment 1 (25%), Assignment 2 (25%), Test (10%), Examination (30%), Lab Attendance & Work (10%).
A unit of study in the Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies) Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Multimedia Software Development), Bachelor of Multimedia (Networks & Computing) and the Bachelor of Multimedia.

Aims & Objectives
To introduce the Internet, World Wide Web and associated local and wide-area network issues.

Content
- What is the Internet and how does it work?
- How the World Wide Web operates across the Internet.
- HTML and WYSIWYG web authoring tools.
- CSS and XML.
- Internet tools: Telnet, FTP etc.
- How web browsers work.
- Bandwidth issues and relevant trade-offs.
- Graphics files: size, download times and formats.
- Copyright on the Internet (source code, images, designs etc., use of other work, sampling).
- Website security and intranets.
- Web search technologies and strategies.
- Email.
- Online synchronous and asynchronous communications.

Reading Materials

HET128 Interactive Games Structures
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn
Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lecture, seminar and tutorial based learning with ongoing practical experience through assignments, research exercises and set tasks • Assessment: Game Analysis (40%), Company Profile (30%), Game Concept Pitch (30%)
A unit of study in the Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
- To introduce students to the fundamental ideas behind both non-electronic and electronic games.
- To develop a vocabulary to critically analyse games and game structures.
- To explore game narrative and development within an interactive storytelling environment.
- To explore concepts of interactivity and player immersion.

Content
This unit of study introduces students to concepts of game-play in both non-electronic and electronic formats. Students will look at the mechanics of writing, storyboarding and developing a work of interactive fiction. Topics will include:
- History of games
- Issues of gameplay
- Game criticism
- Narrative in games
- Experiences and experience-centred game-play models
- Social issues of interactivity and game-play
- Game culture
- Game studies

Reading Materials
HET123  The Internet and World Wide Web 2
12.5 Credit Points • 1 Semester • 3 Hours per Week (an average) • Hawthorn, Sarawak • Prerequisite: HET113 The Internet and World Wide Web 1 or equivalent • Corequisite: Nil • Teaching methods: Lectures, Laboratory-based Exercises, Online Delivery • Assessment: Assignment Part 1 (20%), Assignment Part 2 (10%), Assignment Part 3 (20%), Test 1 (10%) Examination (30%), Lab Attendance & Work (10%).

A unit of study in the Bachelor of Engineering (Telecommunication & Internet Technologies), Bachelor of Engineering (Telecommunication & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Multimedia Software Development), Bachelor of Multimedia (Networks & Computing), Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & Internet Technologies) and the Bachelor of Multimedia.

Aims & Objectives
HET123 introduces the functionality of Web page programming to achieve greater interactivity of websites and the development of data-driven websites. Several different technologies for Web page programming will be explored, and associated issues examined.

Content
• Website design and usability principles.
• Basic programming concepts.
• HTML and forms.
• DHTML concepts.
• Web authoring software (Dreamweaver).
• Basic database structure and design, including SQL.
• Document object model.
• Client-side Web scripting (Javascript).
• Server-side Web scripting (ASP).
• Unix basics.
• NT server basics.
• Web security issues.

Reading Materials

HET124  Energy and Motion
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Tutorials and Practical Work • Assessment: Examinations, Pracs, Tutorials

A unit of study in the Bachelor of Engineering (Biomedical Engineering), Bachelor of Engineering (Civil Engineering), Bachelor of Engineering (Civil Engineering) / Bachelor of Business, Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electronics and Computer Systems)/Bachelor of Arts, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Mechanical Engineering), Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business, Bachelor of Engineering (Product Design Engineering), Bachelor of Engineering (Robotics and Mechatronics), Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Biomedical Sciences), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Science (Photronics), Bachelor of Science (Photronics) / Bachelor of Engineering (Telecommunication and Network Engineering), Bachelor of Science (Psychology and Psychophysiology), Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Technology (Air Transportation Management), Bachelor of Technology (Air Transportation Management) / Bachelor of Business, Bachelor of Technology (Aviation), and Bachelor of Technology (Aviation) / Bachelor of Business.

Aims & Objectives
To provide a coherent and balanced account of energy and motion, emphasising their applications and importance in an engineering context.

Content
• Linear mechanics.
• Fluid mechanics.
• Quantum mechanics.
• Newton's laws; momentum; energy and work.
• Rotational mechanics.
• Circular motion.
• Fluid mechanics.
• Buoyancy; Pascal's law; Bernoulli's principle.
• Thermodynamics.
• Zeroth and first law of thermodynamics; heat transfer and expansion; kinetic theory.
• Vibrations and waves.
• Simple harmonic motion; resonance and damping.

Reading Materials
Aims & Objectives
To develop further understanding of anatomy and physiological processes, as related to physiological measurements.

Content

Reading Materials

Aims & Objectives
Understanding of information technology, data acquisition and analysis applied to psychophysiology.

Content
This unit explores the technology associated with physiological monitoring, particularly computer-based data acquisition and display. The concepts of signal acquisition and processing are introduced, along with applications to digital conversion and sampling theorems.

Reading Materials
Engineering (Telecommunication & Internet Technologies), Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Computer Science & Software Engineering)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science ( Photonics ) / Bachelor of Engineering (Telecommunication & Network Engineering) Bachelor of Science (Research & Development)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems) / Bachelor of Business.

Aims & Objectives

To provide the student with a variety of application-oriented digital electronics design skills, including:

- The design of significant synchronous digital systems,
- Timing and hazard analysis for reliable digital circuit designs, and
- The use of Electronic Design Automation (EDA) tools for design, analysis and simulation.

Content

- Programmable Logic Devices: Read Only Memory. Programmable Logic Arrays (PLAs). Programmable Array Logic (PALs) Devices. Field Programmable Gate Arrays (FPGAs).

Textbooks


References


HET203 Photonics 2

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET103 Photonics 1 • Corequisite: Nil • Teaching methods: Lectures, Tutorials, Laboratory Work • Assessment: Assignments, Examinations, Lab Reports

A unit of study in the Bachelor of Science (Photonics) and Bachelor of Science (Photons) / Bachelor of Engineering (Telecommunication and Network Engineering)

Aims & Objectives

The aim of this unit is to provide students with a solid understanding of basic concept of optoelectronics, and an introduction to photonic devices.

Upon completion of this unit, students should be able to:

- Calculate characteristic physical parameters for various optical devices (e.g. coated optics, amplitude modulators, phase modulators, harmonic generation crystals etc.) based on their underlying operating principles.
- Select and characterise appropriate photonic transducers (sources/detectors) based on bandwidth, sensitivity and noise performance characteristics.

Content

- Thin Film Optics.
- Beam Optics.
- Non-linear Optics.
- Electro-Optics.
- Acoustic Optics.
- Semiconductor Sources and Detectors.

Textbooks


Recommended Reading

Grannam-Smith, F & King, TA, Optics and Photonics, John Wiley & Sons, 2000.

HET205 Introduction to Modern Optics

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET103 Photonics 1 • Corequisite: Nil • Teaching methods: Lectures, Tutorials, Laboratory Work • Assessment: Assignments, Examinations, Lab Reports

A unit of study in the Bachelor of Science (Photonics) and Bachelor of Science (Photons) / Bachelor of Engineering (Telecommunication and Network Engineering)

Aims & Objectives

The aim of this unit is to provide students with a solid understanding of wave optics, including a detailed introduction to the fundamental principles of Fourier optics and imaging.

Upon completion of this unit, students should be able to:

- Describe and interpret interference and diffraction patterns.
- Use Fourier transform theory to predict and interpret imaging under various Fourier transform filtering conditions.
- Describe the concept of coherence for both coherent and non-coherent light sources.
- Describe the basic operating principles of holography and produce a practical hologram.

Content

- Fresnel Equations.
- Interference and Diffraction.
- Fourier Optics.
- Holography.
- Coherence.
Textbooks

Recommended Reading

HET206 Modern Physics
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET128 Physics 2 • Corequisite: Nil • Teaching methods: Lectures, Tutorials, Laboratory Work • Assessment: Assignments, Examinations, Lab Reports
A unit of study in the Bachelor of Science (Photonics) and Bachelor of Science (Physics) / Bachelor of Engineering (Telecommunication and Network Engineering).

Aims & Objectives
The aims of this unit are to provide students with a solid development of quantum mechanics (in particular the description of the interactions between light and matter), an introduction to the Special Theory of Relativity, and an introduction to the theory and practice of laser spectroscopy.
Upon completion of this unit, students should be able to:
- Use the formalism of quantum mechanics to describe atomic and molecular systems.
- Analyse and solve simple relativistic problems.
- Describe the advantages and disadvantages of various spectroscopic techniques.
- Interpret spectroscopic data from a range of sources, in terms of their underlying atomic and molecular structure.

Content

Textbooks

Recommended Reading

HET207 Modelling & Simulation Projects
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Introductory Lectures, Tutorials, Workshops • Assessment: Assignments, Project(s)
A unit of study in the Bachelor of Science (Photonics) and Bachelor of Science (Physics) / Bachelor of Engineering (Telecommunication and Network Engineering).

Aims & Objectives
The aim of this unit of study is to expose students to a number of computer modelling/simulation software packages (symbolic mathematics, data analysis, data acquisition etc) and to explore complex problems in engineering and physics contexts via structured simulation projects. Additionally, students will also manage a major, open-ended team project, which will encourage the creative application and extension of the core material.
Upon completion of this unit, students should be able to:
- Use several common simulation software packages, and to select and apply the appropriate package to solve several science and engineering problems.
- Manage personnel and technical resources in an open-ended team project.
- Communicate project milestones and progress at weekly meetings, and present a research seminar upon project completion.

Content
- Statistics and the modelling process.
- Exploration of a selection of engineering and scientific problems (both theoretical and experimental) using a number of different modelling and simulation software packages (e.g. Mathematica, MatLab, LabView etc.).
- Major team project (building on experience gained in the fundamental modelling and simulation problems from the first section of the unit).

Reading materials

HET208 3D Animation and Special Effects
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, studio (computer laboratory), tuition with practical experience through exercises and set tasks • Assessment: Concept design (15%), Visualisation exercise (20%), Project in-progress (25%), Final Project (40%)
A unit of study in the Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Networks & Computing), Bachelor of Multimedia (Multimedia Software Development), Bachelor of Multimedia, and Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies).

Aims & Objectives
- To give students an overview of key concepts and production techniques.
- To provide an introduction to the creation and animation of objects using a popular 3D package.
- To provide insight into the art and business of the 3D industry.

Content
This unit provides an introduction to 3D modelling and animation using a commercial 3D graphics application. The practical component of the course will take the student through the steps required to create and animate objects, apply materials, lighting and other effects.
The lecture series will cover the following topics:
- Fundamentals of 3-dimensional graphics and core concepts.
- Project planning, storyboarding and pre-production.
- Primitives and object topology.
- Modifying objects and modelling techniques.
- Shaders, texturing and materials.
- Lighting, environment and atmospheric effects.
- Basic keyframed and procedural animation.
- Particles and space warps.
- Rendering and post effects.
- Network rendering and management.
- The business of 3D.

Reading Materials

HET209 Fibre Optics Communication & Optical Instrumentation
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET471 Photonics and Fibre Optics • Corequisite: Nil • Teaching methods: Lectures, Tutorials, Laboratory Work • Assessment: Assignments, Examinations, Lab Reports
A unit of study in the Bachelor of Science (Photonics) Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies).

Aims & Objectives
Students will be introduced to a range of advanced topics in the design and performance of modern fibre optic communication systems. Students will also study a range of fibre optic and general photonics instruments commonly used in research and industry.
Upon completion of this unit, students should be able to:
- Describe the form and function of the main devices which are important in fibre optics communications (fibre types, transmitters and receivers, fibre amplifiers, WDMs etc).
- Design a simple fibre optic communications system.
- Use link design software to optimise fibre optic communication links.
- Describe the operation of selected simple optical instruments (e.g. spectrometers, interferometers, microscopes etc).

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Content

FO Communications:
- Propagation characteristics.
- SM & GI fibres.
- Dispersion and design considerations.
- FO transmitters and receivers (design and performance).
- Design considerations for FO communications System (incl. modulation, noise, bit rate error, power budget, bandwidth budget).
- FO communications devices (incl. couplers, switches, multiplexers, modulators, isolators, attenuators, fibre Bragg grating devices, fibre amplifiers).
- Measurement (incl. power, phase, polarisation, attenuation, dispersion, data rate & bandwidth etc.).
- FO instruments (incl. OTDR, FO analyser, test sources, continuity testers etc.).
- FO link design (with and without link design software, use of simulation software for optical fibre system design).

Optical Instruments:
- Dispersive Spectrometers (incl. grating, prism, spectral width, resolution, throughput, etc.).
- Introduction to interferometers, Fabry-Perot interferometers (incl. free spectral range, finesse, resolution, scanning).
- Fourier transform spectrometers.
- Microscopes (incl. conventional, confocal, near field).

Textbooks

Recommended Reading

HET210 Electronics

A unit of study in the Bachelor of Engineering (Telecommunication & Internet Technologies) / Bachelor of Science (Computer Science & Software Engineering), Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Multimedia (Networks & Computing) / Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Research & Development) / Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems) / Bachelor of Arts, Bachelor of Engineering (Electronics & Computer Systems) / Bachelor of Business, Bachelor of Engineering (Telecommunication & Internet Technologies), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics) / Bachelor of Science (Computer Science & Software Engineering), Bachelor of Science (Photonics), and Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunication & Network Engineering)

Aims & Objectives
- To be familiar with the basic digital building blocks, such as gates, flip-flops and counters.
- The ability to analyze and synthesise digital circuits of moderate complexity.
- To be familiar with the basic analog building blocks, such as amplifiers, filters and non-linear circuits).
- The ability to analyse and synthesise analog circuits using operational amplifiers.
- To develop a basic understanding of discrete electronic components, such as diodes and transistors.

Content

Analog Electronics:
- Transistors: Large and Small Signal Models.
- Response Classifications, Bode Diagrams.
- Filters: Second Order Active Filters, LP, HP, BP Filter Examples.
- Non-Linear Op-Amp Applications: Clipping and Clamping Circuits, Precision Diode, Peak Detector, Comparators.

Digital Electronics:
- Combinational Logic.
- SSI & MSI Building Blocks: Adders, Subtractors, ALU’s, Multiplexers, Demultiplexers, Encoders, Decoders.
- Sequential Logic (Latches and Flip-flops), MSI Building Blocks (Counters, Registers, Shift Registers).
- Logic Levels and Compatibility.
- Three-State and Open Collector Outputs.
- Programmable Devices: ROMs, PLAs, PALs.
- The Design of a CPU as a Major Application Example.

Textbooks

References

HET213 User Experience Design

A unit of study in the Bachelor of Multimedia suite of programs.

Aims & Objectives
HET213 introduces the concept of experience design and its importance in the design of a variety of digital applications. Often developers overlook the importance of the customer experience when using their products. Consequently, it is becoming increasingly important for companies to provide customers with positive user experiences through fundamentals like navigation, search, usability and identifying the needs of the real user as well as that of the business. The understanding & usability research skills and techniques gained in this subject, along with coverage of important relevant teamwork and project management skills will help students to design effective user environments for a variety of applications from retail websites to computer games.

Content
- Working in a team / project management.
- Introduction to the User Experience.
- Understanding the Business.
- Understanding the User.
- Effective Branding.
- Effective Information Architecture.
- User Interface Design.
- Prototyping and Documentation.
- Usability research methods and techniques.
- Usability Testing.
- Effective Communication.

Reading Materials
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HET214 Circuits and Electronics 1
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET312 Engineering Mathematics 2 and HET110 Electronic Engineering Systems • Corequisite: Nil • Teaching methods: Lectures, Tutorials and Laboratory Reports • Assessment: Assignments, Examinations, Lab Reports
A unit of study in the Bachelor of Engineering (Electronic and Electrical Engineering), Bachelor of Engineering (Biomedical Engineering) (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems) (Robotics and Mechatronics), Bachelor of Engineering (Robotics and Mechatronics) • Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Telecommunication and Internet Technologies), Bachelor of Multimedia (Networks and Computing) • Bachelor of Engineering (Telecommunications and Internet Technologies) • Bachelor of Science (Biomedical Sciences), Bachelor of Science (Biomedical Sciences) • Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Telecommunication and Internet Technologies) • Bachelor of Engineering (Electronics and Software Engineering), Bachelor of Science (Photonics) • Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Research and Development) • Bachelor of Engineering (Electronics & Computer Systems).

Aims & Objectives
- To develop circuit analysis skills which form the foundation of later electronic and computer engineering subjects, including electronics, controls, fields and power systems.
- Introduce the students to basics of discrete electronic components, such as diodes and transistors and their characteristics and applications.

Content
- Review of circuit analysis techniques.
- Network theorems.
- Response of first-order RC and RL circuits.
- Sinusoidal analysis.
- Multi-transistor amplifiers

Textbooks

References

HET215 Multimedia Applications
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Laboratory and lecture based tuition with continual practical experience through exercises and set tasks. • Assessment: Assignment 1 - Interface Design (35%), Assignment 2 - Director Interactive (35%), Written Theory Exam (30%).
A unit of study in the Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Multimedia Software Development), Bachelor of Multimedia (Networks & Computing), and Bachelor of Multimedia.

Aims & Objectives
To provide an introduction to the practice of multimedia, by developing appropriate skills with multimedia software.

Content
This unit of study involves an introduction to the practice of multimedia creation using various industry standard software tools.
- Concepts in digital image creation and manipulation.
- Introduction to bitmap and vector graphics.
- Introduction to Multimedia Authoring.
- Introduction to vector graphics animation.
- Principles of animation applied to computer graphics.
- Comparison of various multimedia software packages.

Reading Materials

HET217 Business of Games
12.5 Credit Points • 1 Semester • 3 Hrs per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures and Seminars • Assessment: Comparative Company Analysis, Reflective Journal, Presentation
A unit within the Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Arts (Games and Interactivity).

Aims & Objectives
Business of Games is designed to provide students with an appreciation of the specificities of the games industry, both in Australia and overseas. By combining a series of industry overview lectures with presentations by leading Australian industry figures, the subject explores how contemporary business practice relates to the games industry, and equips students with the skills required to help ensure commercial ventures involving games are viable.

Content
- The Business of Games: Historical Overview
- Games in Australia
- Games in Europe
- Games in the United States
- Games in Japan
- Fun, Games and Business Practice
- Industry Presentations (Weeks 6-12)

Reading Materials

HET219 Neurological Monitoring
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET312 Introductory Physiology and (HET148 Technology and Data Acquisition or HET202 Digital Electronics Design or HET210 Electronics) • Corequisite: Nil • Teaching methods: Lectures and Laboratory Work • Assessment: Computer-Based Tests, Examinations, Labs
A unit of study in the Bachelor of Arts (Psychology and Psychophysiology) / Bachelor of Science (Psychology and Psychophysiology), Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering) and Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
To provide an understanding of the techniques available for recording brain and other electrical activity measures from the body, and to interpret the recorded information obtained from electrical activity measures.

Content
- Electrophysiological recording techniques, including EEG, ENG, EMG, EOG, and ECG.
- International 10-20 system, electrodes and recording arrangements, spontaneous EEG, origins of the EEG, and the evoked potential, event-related potentials, recording and analysis techniques.
- Neurological clinical tests: application of EEGs, evoked potentials, integrity of pathways (sensory and motor). Lesion and stimulation studies.
- Measures of cognitive function: applications of ERP techniques to attention
and cognition.
• Advanced instrumentation.
• Computer-based recording techniques.
• Advanced statistical analysis: experimental methodology and design.
• EEG and EP Mapping techniques.
• Methodological issues associated with the use of electrophysiological techniques.
• Other measurements of neurological function: eye movements.
• Functional and structural brain imaging.

Reading Materials

HET222 Digital Video and Audio
12.5 Credit Points • 1 Semester • 4.25 Hours per Week (on average) • Hawthorn, Sarawak • Prerequisite: NIL • Teaching methods: Lectures, Laboratory Sessions • Assessment: Computer-Based Test (20%), Discussion Threads (10%), Ten Labs a total of 20%, Three Assignments a total of 50%
A unit of study in the Bachelor of Multimedia suite of programs.

Aims & Objectives
HET222 introduces the concept of non-linear video and audio editing using digital video and audio technology. It will equip students with the basic skills required to capture and edit video and audio material, and to master to a variety of formats, including videocassette, CD and streaming formats for the WWW.

Content
• Storytelling tools.
• Video technology.
• Cameras & lighting skills.
• Videos capture.
• Video editing.
• Titles and credits.
• Production planning.
• Scriptwriting and storyboarding.
• Production design.
• Production estimation and timelines.
• Advanced editing and FX.
• Advanced audio and sound FX production.
• Internet video.
• Digital audio theory & physics of sound.
• Audio recording and playback.
• Random access / non-destructive editing.
• Digital signal processing.
• Audio file formats and compression.
• Internet audio.
• Digital audio disk and tape media.

Reading Materials
Lecture handouts containing relevant course material. There is no prescribed textbook for this unit of study.

HET226 Sensory Systems
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET102 Introductory Physiology or HET133 Human Physiology • Corequisite: NIL • Teaching methods: Lectures and Practical Work • Assessment: Assignments, Examinations, Pracs
A unit of study in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Arts (Psychology) and Psychophysiology) and Bachelor of Science (Psychology and Psychophysiology).

Aims & Objectives
To introduce the final component of the human sensory neurosciences and to examine higher cortical function associated with normal and dysfunctional brains.

Content
• Vision, gross anatomy, micro-structure of retina, regulation of pressure, visual pathways, cortical and subcortical areas, evoked potentials, control of eye movements.
• Visually evoked potentials: Evoked potentials of cognition.
• Auditory and vestibular: gross anatomy of ear, cochlear, hair cells, labyrinths, coding of auditory information, cortical and subcortical areas, vestibular systems, optokinetic reflex.
• Auditory evoked potentials: brainstem, clinical testing.
• Chemical sense: Olfaction and taste, structures of mouth, nose, transection of olfactory epithelium, pathway to cortex, taste receptors, classes of taste, interaction between smell, taste and trigeminal responses; perception and measurement.
• Sensory interactions and interactions between the special senses.

Reading Materials

HET227 Neurophysiology
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET133 Human Physiology and either HET149 Technology and Data Acquisition or HET162 Corequisite: NIL • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Pracs
A unit of study in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Arts (Psychology and Psychophysiology) and Bachelor of Science (Psychology and Psychophysiology).

Aims & Objectives
To provide students with an understanding of human neuroanatomy, peripheral and central motor systems, tactile sensory systems and the application of techniques and instrumentation for monitoring brain activity.

Content
• Neuroanatomy: spinal organisation and structure, pathways.
• Somatosensory system: receptors to touch, pressure, pain, temperature.
• Generator potentials and frequency coding in the CNS.
• Major afferent pathways: subcortical and cortical regions, sensory homunculus, sensory areas SI, SII, psychophysics, perception.
• Pain pathways and endogenous analgesia, pain suppression.
• Information processing: channel capacity, psychophysics.
• Neuropharmacology: Introduction to receptors, receptor activation, major anti-depressant classes, drugs,traction, routes of administration, drug treatment in some clinical disorders.
• Neuroendocrinology: Introduction to interactions between nervous system and hormones, effects on metabolism and arousal, hypothalamic pathways, pituitary-hypothalamic interactions and axis, hypothalamic-pituitary-adrenal axis, control and homeostasis.

Reading Materials

HET228 Electronic Actuators and Sensors
12.5 Credit Points • 1 Semester • 66 Hours • Hawthorn, Sarawak • Prerequisite: HET182 Electronic Systems and HMS213 Engineering Mathematics 3B recommended • Teaching methods: Lectures, tutorials and laboratory work • Assessment: Assignments, Examinations, Labs
A unit of study in the Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics) / Bachelor of Science (Computer Science & Software Engineering) Science & Software Engineering).

Aims & Objectives
• To introduce the principles of electromechanical energy conversion. This will include introducing the student to the construction, operation and applications
of magnetic circuits, the transformer, the induction motor and DC machines.

- To introduce the student to sensors typically used in robotics projects including torque, force, acceleration, velocity, displacement, fluid-flow, and temperature.

### Content

- Magnetic Circuits and Ampere’s Law
- Concepts of magnetic flux, flux density, magnetic field intensity, reluctance, permeability and permeance.
- Study of series and parallel magnetic circuits and electrical analogies.
- Permanent magnets, magnetic materials and B-H characteristics
- Self and mutual inductance.
- Energy density in a magnetic field.
- Magnetic force relationship.
- Force on a conductor carrying a current in a magnetic field.
- Transformer
  - Construction of a single phase transformer.
  - Ideal transformer equations: emf equation & ratio, mmf balance, phasor diagram.
  - Practical transformers: iron & winding losses, leakage reactance.
  - Equivalent circuit, efficiency, voltage regulation.
  - Introduction to the high frequency transformer and the pulse transformer.
  - Introduction to instrument transformers (CTs and VTs).
- Induction Motor
  - Three phase motor construction
  - Approximate equivalent circuit
  - Equivalent circuit with Thevenin’s equivalent
  - Torque - speed characteristic, slip for maximum torque.
- Losses, efficiency.
- Sensors & Transducers
  - Linear and rotational sensors
  - Measurement of time and frequency
  - Force torque acceleration sensors
  - Flow, temperature, distance sensors
- Light image and vision systems

### Textbooks
To be advised

### References

HET230 Cardiovascular Biophysics
12.5 Credit Points • 1 Semester • 4.5 Hours per Week • Hawthorn • Prerequisite: HET240 Cellular Biophysics • Corequisite: Nil • Teaching methods: Practicals and Tutorials • Assessment: Assignments, examinations, practicals

A unit of study in the Bachelor of Sciences (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering) and Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems).

### Aims & Objectives
To establish an understanding of the physiology associated with human cardiovascular processes and the application of monitoring techniques.

### Content
- The heart: cardiac cycle, mechanical and electrical events, Starling's law, mechanical properties of cardiac muscle.
- Fluid dynamics/flow instrumentation.
- Pulsatile pressure and flow in arteries, wave propagation in arteries, blood rheology, atherosclerosis, Starling’s hypothesis of the capillary system, mass transport, fluid in collapsible tubes, blood flow in particular organs, Guyton's model.
- Cardiac monitoring and pathologies.
- The ECG: genesis of myocardial field, changes in disease, arrhythmias and conduction defects.
- Pressure and flow monitoring: invasive and non-invasive methods, Swan Ganz catheters, cardiac output methods, oximetry, nuclear methods. Diagnosis by sonic and ultrasonic methods.
- Intensive care instrumentation: Cardiopulmonary bypass, coronary investigations.

### Reading Materials

### HET231 Perception and Motor Systems
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET227 Neurophysiology or HET226 Sensor Systems • Corequisite: Nil • Teaching methods: Lectures, Laboratory Work and Online/ Flexible Delivery • Assessment: Assignments, Pracs
A unit of study in the Bachelor of Science (Psychology and Psychophysiology).

### Aims & Objectives
To develop an understanding of human motor control systems and an understanding of psychophysiology, perception, human performance and experimental systems.

### Content
- Physiology of the motor system.
- Peripheral motor system, effecter pathways, and muscle performance.
- Motor system: peripheral effectors, muscle spindle, feedback, cortical regions, cerebellum, subcortical regions, motor pathways, control of movement, disorders of movement, Parkinson’s disease, chorea.
- Early historical developments in neuroscience.
- The development of notions of cortical localisation of function.
- Cortical mapping of motor and sensory function.
- Cortical plasticity, sensory remapping and phantom limb phenomena.
- Cerebellar function.
- Perception including optical and other illusions.
- Human performance

### Reading Materials

### HET232 Embedded Microcontrollers
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET210 Digital Electronics Design and HET200 Introduction to Programming or HIT1001 and HIT1002. Software Development 2 (co-require in certain courses) • Corequisite: HIT1002 for students enrolled in BSc (Research & Development) / BEng (Electronics & Computer Systems), BEng (Robotics & Mechatronics), BEng (Robotics & Mechatronics) / BSc (Computer Science & Software Engineering) • Teaching methods: Lectures, Laboratory Work and Tutorials • Assessment: Assignments, Examinations, Pracs
A unit of study in the Bachelor of Engineering (Electrical & Electronic Engineering), Bachelor of Engineering (Telecommunication & Internet Technologies) / Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Art, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Robotics and Mechatronics), Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Telecommunication & Internet Technologies) and Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications & Internet Technologies).

### Aims & Objectives
To understand the basic architecture of microcontrollers, and to be able to use these devices in practical applications. The course will be structured around the Motorola 68HC12 microcontroller. The programming languages used include Assembly Language and C. Investigative, design and problem-solving skills will be emphasised.
Content
Introduction to Microcontrollers:
- The Motorola 68HC12: overview, configuration, instruction set, programmable timer subsystem, interrupts, serial peripheral interface, A/D converter expansion methods - I/O ports, memory and timing diagrams.
- Expansion methods: I/O ports, memory and timing diagrams, interfacing components.
- Memory interfacing and timing.
- Memory decoding and buffering.
- Software building blocks: queues, tables, strings, state machines.
- Design and interface examples.

Textbooks

References

HET233 Games & Interactivity Lab 1
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisites: NIL • Corequisite: NIL • Teaching methods: Lecture and laboratory based learning with ongoing project development and assessment tasks • Assessment: Assignments, class and oral presentations, peer review.
A unit of study in the Bachelor of Arts (Games and Interactivity)

Aims & Objectives
- To introduce students to the fundamental concepts of game design and game play.
- To develop a critical vocabulary for understanding and evaluating games.
- To become accustomed to the nature and teaching of Games and Interactivity Labs.
- To gain exposure into other forms of media including: film, theatre, television and the digital arts.

Content
Students are exposed to a variety of lab projects which will accommodate both materials from the lectures and ongoing discussion through the laboratory design process. Each lab draws elements from the other units studied into their project work for achievable and defined outcomes. Students will focus on a number of topics per lab which carry through to their project work. For the foundation lab, students will focus on the following areas:
- Research and presentation methods
- Oral presentation and peer group feedback
- Visual aesthetics and the game play experience
- Communication techniques
- Analysis of linear and non-linear narratives

Reading Materials
TBA

HET234 Games & Interactivity Lab 2
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisites: HET233 Games & Interactivity Lab 1 • Corequisite: NIL • Teaching methods: Lecture and laboratory based learning with ongoing project development and assessment tasks • Assessment: Assignments, class and oral presentations, peer review.
A unit of study in the Bachelor of Arts (Games and Interactivity)

Aims & Objectives
- To introduce students to the fundamental concepts of narrative and ludology.
- To develop an understanding of plot development, back-story and storytelling.
- To introduce students to the fundamental concepts of narrative and ludology.
- To understand the concept of ludology and how it relates to games in general.

Content
Students are exposed to a variety of lab projects which will accommodate both materials from the lectures and ongoing discussion through the laboratory design process. Each lab draws elements from the other units studied into their project work for achievable and defined outcomes. Students will focus on a number of topics per lab which carry through to their project work. For the stories and storytelling lab, students will focus on the following areas:
- Textual communication
- Storyboarding
- Concepts of Interactive Storytelling
- Historical understanding of the narrative of games
- Representation

Reading Materials
TBA

HET235 Biomedical Electronics
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET210 Electronics or HET202 Digital Electronics Design • Teaching methods: Lectures and laboratory work. • Assessment: Assignments, examinations. A unit of study in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Medical Sciences) / Bachelor of Engineering (Electronics and Computer Systems) and Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
This unit of study has two aims. The first is to create an understanding of the electronic circuits and devices used in biomedical equipment. The second is to develop proficiency in the safe use of the electrical equipment used in health care.

Content
Signals, Amplifiers and Filters:
- Sources of electrical signals.
- Sensors, signals, amplifiers.
- Operational amplifier circuits.
- Ideal and non-ideal amplifier properties.
- Comparators.
- Active filters.
- Modulation.
- Digital to analog and analog to digital conversion.
- Digital filters.

Interference and Noise:
- Induced voltages and induced currents in sensors, leads, and circuits.
- Common impedance paths.
- Electric field coupling.
- Telephone field coupling.
- Electromagnetic radiation and shielding.
- Characteristics of noise.
- Noise spectra.
- Types of noise.
- Noise measurement.
- Noise factor.

Electrical Safety:
- Electrical safety.
- The biological effects of electrical current.
- Hazards, hazard identification, hazard evaluation, hazard control.

References
Lancaster, B, Active Filter Cookbook, Sams, 1989.

HET240 Cellular Biophysics
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET124 Energy and Motion or HET182 • Corequisite: NIL • Teaching methods: Lectures, tutorials and practical work • Assessment: Assignments, examinations, prac
A unit of study in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering) and Bachelor of Science (Biomedical
Aims & Objectives
To establish an understanding of the physiology of cellular processes by the application of physics principles.

Content
- Membrane phenomena: Structure and function of membranes and membrane channels, modes of transport of ions and non-electrolytes; Diffusive processes; Fick's laws, Nerst and Donnan equilibrium, osmosis, Goldman equation, Ussing flux ratio equation 'pore' hypothesis.
- Properties of electrodes: Measurement of intracellular potentials; electrode processes; half cell potentials - overpotentials, high impedance, microelectrodes, recording arrangements. Electrical and volume conduction properties of nerves; cable model.
- Pre- and post-synaptic processes: inhibitors and agonists; statistical analysis of mepps; receptors and neurotransmitters; types and mode of operation; inhibitory and excitatory neurons, integrative functions of soma.
- Muscle: length tension relationships, Hill equation, ultrastructure, excitation-contraction coupling, sliding filament theory, metabolic aspects, E-C coupling in smooth muscle, pathophysiology of muscle, electromyography; Cellular basis of muscle fatigue. Performance consideration; metabolism and energetics.

Reading Materials

HET260 Renal and Respiratory Biophysics
12.5 Credit Points • 1 Semester • 4.5 Hours per Week • Hawthorn • Prerequisite: HET173 Human Physiology and either HET124 Energy and Motion or HET182 Electronic Systems. • Corequisite: Nil • Teaching methods: Lectures and Practical Work • Assessment: Assignments, Examinations, Pracs
A unit of study in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering) and Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
To establish an understanding of the respiratory and renal physiological processes and the application of monitoring techniques and instrumentation.

Content
Respiratory System:
- Structure and function.
- Lung volumes and dead space.
- Diffusion.
- Blood flow.
- Ventilation perfusion inequality.
- Gas transport.
- Bohr and Haldane effects.
- Acid/base balance.
- Respiratory mechanics.
- Control of respiration.
- Lung function testing and lung diseases.
- Obstruction.
- Restriction.
- Flow/volume curves.
- Diffusion capacity.
- Compliance.
- Body plethysmography.
Respiratory Instrumentation:
- Exercise biophysics: respiratory changes associated with exercise.
- Anaesthesia: agents and their administration.
- Monitoring, physiological effects of anaesthesia.
Sleep Monitoring:
- Monitoring the respiratory processes associated with sleep, and disorders of sleep.
- Neonatal monitoring.
- Basic EEG.

Renal Biophysics:
- Vasculature.
- The juxtaglomerular apparatus.
- Kidney function tests.
- Countercurrent multiplication.
- Control of kidney function.
- Renal pathophysiology.
- The artificial kidney.

Reading Materials

HET305 Research and Development Project 3
12.5 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Assessment: Assignments, Class Presentations
A unit of study in the Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
To develop within the student:
- An understanding of the scientific research method.
- Practical research skills.
- Practical design and development skills in a research environment.

Content
Students will undertake a substantial project, usually as part of a team of students or based within a research group in the university or external industrial research establishment. A variety of projects will be made available to the student. In exceptional cases, students may negotiate to pursue a project of their own with the agreement of the subject convenor.

HET306 Unix for Telecommunications
12.5 Credit Points • 1 Semester • 56 Hours + Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures (24 hrs), Laboratories (20 hrs) and Tutorials (12 hrs) • Assessment: 10 Laboratory Reports, 1 Project, 1 Written Examination
A unit of study in the Bachelor of Engineering (Telecommunication and Internet Technologies), Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunication and Network Engineering), and Bachelor of Computing (Network Design and Security).

Aims & Objectives
Student who successfully complete this unit of study should be able to:
- Use basic Unix commands to access, copy, edit files.
- Become familiar with the administration of a unix server or workstation.
- Configure common network services, devices and security.
- Become familiar with the use of network administration tools on Unix systems.

Content
- History of Unix.
- Comparison of Unix Systems.
- Functionality of the Unix System.
- The Unix CLI and shell.
- Unix as a Networked Services Platform.
- Writing Networked Applications under Unix.
- Configuring Unix Networked Services.
- Network and Network Traffic Analysis.
**HET308 Circuits and Electronics 2**

12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET214 Circuits and Electronics 1 • Corequisite: Nil • Teaching methods: Lectures, Tutorials, Practical, Laboratory and Project Work • Assessment: Assignments, Examinations, Labs

A unit of study in the Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems) and Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems) (Computer Science and Software Engineering).

**Aims & Objectives**

- To provide the student with a variety of applications-oriented analog electronic design skills.
- To provide insights into design issues related to component variability, and into the behaviour of semiconductor functional blocks commonly used in integrated and discrete analog circuits.
- To introduce solid state device characteristics with particular emphasis on analog integrated circuit characteristics and the uses of analysis and simulation.

**Content**

- Introduction to two-port and three-port networks.
- Multi-transistor amplifiers: cascode, differential pair, current sources.
- Signal generators - oscillators, Schmitt triggers and multi-vibrator circuits.
- Feedback, A/D and D/A internal operation.
- Computer-aided analysis of analog circuits using PSPICE. MOSFETs: models, biasing, DC and AC analysis and applications.
- Power electronics, devices - Diodes, BJTs, SCRs, Triacs, GTOs, BJTs and MOSFETs.
- Applications: Controlled rectification, inversion and pulse width modulation, switch mode power supplies and heat sinks.

**Textbooks**


**References**


**HET312 Control and Automation**

12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET152 and either HMS213 or HMS211 Engineering Mathematics 3A • Corequisite: Nil • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Pracs

A unit of study in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electrical and Electronic Engineering) Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Arts, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Science, Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Robotics and Mechatronics) and Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering).

**Aims & Objectives**

- To develop techniques to formulate models to represent a linear dynamic system.
- To predict the dynamic response of a linear system to a variety of inputs using analytical tools.
- To introduce the concept of feedback in a linear system and to emphasise its advantages using specialised analytical techniques.
- These aims will be enhanced in a practical sense by laboratory assignments.

**Content**

System Concepts:

- Introduction to the concept of a system as a connection of elements.
- Electrical, mechanical and thermal elements and their basic physical relationship.
- Formulation of system equations to form a system model.
- Definition of a linear system applied to practical examples of open and closed loop systems.

Analysis of Linear Systems: The following analytical techniques are developed so that the dynamic response of a single input single output system may be predicted for a variety of input signals:
- Classical solution of differential equations.
- Solution of differential equations using Laplace transform techniques.
- Formulation of a system transfer function.
- Electronic analogues and their application to modelling dynamic systems.
- Frequency response techniques-analysis from the S-planes and Bode diagrams.
- An introduction to state variable analysis.
- Application of specialist computer packages such as Matlab.

Feedback of Control Systems:
- Basic concepts of negative and its advantages.
- Analysis of feedback control systems using specialized techniques, root locus diagrams and frequency response analysis.
- Steady state performance using the final value theorem.
- Basic compensation techniques using bode-feedback and PID controllers to improve the dynamic and steady state performance.
- Criteria for stability.
- Determination of stability from the s-plane and from Bode plots, gain margin and phase margin. Introduction to control system design to meet a set of specifications.

**Reading Materials**


**HET313 Telecommunication Technologies**

12.5 Credit Points • 1 Semester • 45 Hours • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures (32 hrs), Tutorials (8 hrs) and Laboratory Work (8 hrs) • Assessment: Tutorial Problems, Assignment, Laboratory Reports, Final Examination.

A unit of study in the Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Telecommunication and Internet Technologies), Bachelor of Multimedia (Networks and Computing); Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies) Bachelor of Science (Photonics) and the Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunication and Network Engineering).

**Aims & Objectives**

Students who successfully complete this unit will be able to outline and describe the basic technologies, concepts and techniques used in telecommunications systems.

**Content**

Data and voice communication over wired and wireless links in telecommunications networks, including telephony networks (fixed and mobile) and computer networks. Concepts will be introduced initially using examples from the early history of telecommunications technology and then comparing these with more current forms.
and uses of these concepts and technologies.

- Data and voice communications over wires.
- Circuit switched telephony networks.
- Data transmissions through the switched telephony network.
- Introduction to modulation methods for sending simple data and voice signals over radio.
- Radio propagation properties in different frequency bands (LF, MF, HF and beyond).
- Digital voice: PCM and the concept of time division multiplexing.
- Computer network connections for LANs and WANs with a data link layer emphasis.
- Mobile telephony and an outline of emerging mobile networks.
- Wireless Networks.

**Reading Materials**


**HET314 Communications Principles**

12.5 Credit Points • 1 Semester • 63 Hours • Hawthorn, Sarawak • Prerequisite: HMS512 Engineering Mathematics 2 • Corequisite: Nil • Teaching methods: Lectures (36 hrs), Tutorials (12 hrs) and Laboratories (15 hrs) • Assessment: 3 x Individual Tests, 5 x Laboratory Reports, Tutorial Problems, Written Final Examination

A unit of study in the Bachelor of Engineering (Electrical & Electronic Engineering), Bachelor of Engineering (Telecommunication & Internet Technologies) / Bachelor of Science (Computer Science & Software Engineering), Bachelor of Science (Research & Development) / Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Arts, Bachelor of Engineering (Electronics & Computer Systems) / Bachelor of Business, Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Telecommunication & Internet Technologies), Bachelor of Multimedia (Networks & Computing) / Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Photonics), and Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunication & Network Engineering)

**Aims & Objectives**

Students who successfully complete this unit of study will be able to:

- Understand common terminology, concepts, equipment and techniques of signal processing for communications.
- Explain, justify, analyse and critically evaluate common signal processing concepts and methods.
- Analyse the performance of various modulation methods for analogue and digital transmission.
- Evaluate the effect of noise on signal reception.
- Assemble signal processing modules to implement communications systems.

**Content**

- Analogue signals, spectral (fourier) analysis, bandwidth, ideal and real filters, transfer functions, amplitude and phase response, energy and power spectra.
- Analogue modulation and demodulation: amplitude, frequency, phase.
- Noise and its effects in analogue communication systems.
- Receivers.
- Commercial broadcasting: radio and television.
- Pulse modulation.
- Sampling theorem.
- Pulse amplitude modulation, time division and frequency division multiplexing, pulse code modulation.
- Digital methods: digital line codes, modulation and demodulation of ASK, FSK, PSK, DSK, DPSK, QAM, DPSK.
- Noise and its effects in digital communication systems, BER, analysis of digital modulation schemes.

**Reading Materials**


HET315 Communications Information Theory

12.5 Credit Points • 1 Semester • 64 Hours • Hawthorn, Sarawak • Prerequisite: HET314 Communications Principles and HMS214 Engineering Mathematics 3B • Corequisite: Nil • Teaching methods: Lectures (49 hrs), Tutorials (10 hrs), Laboratory/Pracs (6 hrs) • Assessment: Midsemester Test, Overall Laboratory Report, Final Examination

A unit of study in the Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Engineering (Computer Science and Software Engineering), Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Biomedical Engineering), Bachelor of Engineering (Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Science (Photonics) and Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunication and Network Engineering).

**Aims & Objectives**

To examine issues relating to the measure of information, relationship between information, channel capacity and applied coding techniques for improvement of information efficiency.

Students who successfully complete this unit of study will be able to:

- Understand the concepts of information, entropy and channel capacity.
- Perform source and channel encoding/decoding algorithms.
- Design and analyse linear black codes, cyclic codes and convolutional codes.

**Content**

- Digital communication systems, discrete sources and entropy, channel and channel capacity.
- Linear block error-correcting codes.
- Cyclic codes.
- Convolutional codes.
- Trellis-codes modulation.
- Information theory and cryptography.
- Shannon's coding theorems.

**Textbooks**


HET316 Electromagnetic Waves

12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HMS213 Engineering Mathematics 3B • Corequisite: Nil • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Lab Reports, Tutorial Tests

A unit of study in the Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Telecommunication and Internet Technologies) and Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies).

**Aims & Objectives**

- To become familiar with the concepts and applications of electromagnetic wave theory.
- To become familiar with methods used for wireless and wired communications, including radio frequency antenna and microwave propagation technology.

**Content**

- Review of relevant circuit theory.
- Maxwells equations.
- Magnetic vector potential.
• Time varying electromagnetic field theory.
• TEM wave propagation in free space, velocity, impedance.
• Transmission media: wire pairs, coaxial cables.
• Transmission line effects.
• Time transmission, in cables, TDR.
• Brief description of waveguides.
• Radio frequency terrestrial propagation, free space path loss, antennae, atmospheric refraction, earth curvature effects, diffraction, multipath and fading.
• Microwaves for industrial and communication purposes.
• EMI radiation and EMI compatibility, shielding and noise reduction techniques.
• Electromagnetic safety and standards.

Reading Materials

HET317 Network Security and Resilience
12.5 Credit Points ⊕ 1 Semester ⊕ 60 hours ⊕ Hawthorn, Sarawak ⊕ Prerequisite: HET424 IP Technologies or approved CNAP Semi 4 ⊕ Teaching methods: Lectures, Labs and Tutorials ⊕ Assessment: Examinations, Labs, Practical Examination, Tests
A unit of study in the Bachelor of Engineering (Telecommunication and Network Engineering), Bachelor of Engineering (Telecommunication and Network Engineering) / Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Computing (Network Design and Security)

Aims & Objectives
Students should be able to understand:
• Threats to network security.
• Security policy issues.
• The basics of the operations of firewalls.
• Encryption techniques and applications.
• Authentication, VPN and IDS technologies.
• Security issues related to wireless technologies.

Content
• Threats to network security
• Security policy
• Firewalls
• Encryption
• Virtual Private Networks
• Intrusion Detection Systems
• Authentication Systems
• Wireless Security

HET318 Applied Science Project A
12.5 Credit Points ⊕ 1 semester ⊕ 14 hours ⊕ Hawthorn ⊕ Prerequisite: Students must have completed at least 175 CPs excluding IBL, and cannot be taken during IBL ⊕ Corequisite: Nil ⊕ Teaching methods: Introductory meeting (2 hrs) ⊕ Regular Contact with Supervisor via Project Team meetings (1 hour per Week) ⊕ Regular project work with other members of the team ⊕ Assessment: Project Management (assessed by supervisor) ⊕ Final Report/Research Poster
A unit of study in the Bachelor of Science

Aims & Objectives
Students who successfully complete this unit will be able to:
• Plan a complete project where time, availability of hardware and money are realistic restraints.
• Develop skills in planning and executing a major project in a relevant discipline.
• Apply knowledge acquired during the course to planning and design of a project.
• Develop their research skills.
• Conduct a literature search.
• Present their research findings using a poster.
• Write a comprehensive report to detail all initial research, literature survey and the work performed.

Content
Students are expected to work on group projects in a typical group size of three (although other group sizes will be considered). The project itself must be continued and completed in HET319.

HET319 Applied Science Project B
12.5 Credit Points ⊕ 1 Semester ⊕ 14 Hours ⊕ Hawthorn ⊕ Prerequisite: HET318.
Apart from exceptional circumstances HET318 and HET319 must be completed in one 12-month period ⊕ Teaching methods: Introductory meeting (2 hrs), Regular Contact with Supervisor via Project Team meetings (1 hour per Week), Regular project framework ⊕ Assessment: Project Management
A unit of study in the Bachelor of Science

Aims & Objectives
• To develop skills in planning and completing a major project in an applied science field (eg photonics, electronics, mechatronics, computer science etc.).
• This project may be interdisciplinary in nature.
• To develop skills in preparing a major project report.
• To apply knowledge acquired during the course.
• To prepare and present a professional seminar on the project.

Content
Students are expected to continue with the project selected during HET318. The project may be university- or industry-based. It may take various forms in which technology, research and development, experimental work, computer analysis, industry liaison and business acumen vary in relative significance. It is expected that the project will involve a substantial technical development component.

HET320 Psychophysiological Project
12.5 Credit Points ⊕ 1 Semester ⊕ Variable depending upon project typically an average of 1 hour per Week ⊕ Hawthorn ⊕ Prerequisite: HET527 Sleep and Attention or HET528 Higher Cortical Functions ⊕ Corequisite: Nil ⊕ Teaching methods: Student Research ⊕ Assessment: Report, Seminar
A unit of study in the Bachelor of Science (Psychology and Psychophysiology) and Bachelor of Arts (Psychology and Psychophysiology)

Aims & Objectives
To apply skills to a research project within the area of psychophysiology.

Content
This unit of study gives the students the opportunity to apply techniques and skills introduced in the psychophysiology and psychology disciplines. Students will work in small groups to plan and review the literature, and carry out the experimental and analytical work involved. Most projects undertaken involving human subjects will also require approval from the human experimental ethics committee.
HET321  Physics of Games
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Laboratory and lecture based tuition with continual practical experience through exercises and set tasks. • Assessment: Major Assignment (30%), Hurdle Tasks (30%), Practical Examination (40%).

A unit of study in the Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Arts (Games and Interactivity).

Aims & Objectives
To provide an introduction to the practical application of physics concepts within computer and videogames through gameplay analysis and game and simulation design.

By completing this course students will be able to distinguish accurate modelling of in-game physics from inaccurate models. Students will also be able to perform basic calculations for modelling objects in motion.

Content
This unit of study involves an introduction to the application of physics in computer and videogames focusing on the areas of:

(i) Real-Time Physics Modelling
   - Newton’s Laws of Motion (e.g., Asteroids, Spacewar, Lunar Lander)
   - Coordinate systems and vectors (e.g., Missile Command, Pac Man, Civilization III)
   - Forward and inverse kinematics (e.g., Doom III)
   - Projectile Motion (e.g., Sydney 2000, Raster Blaster, 3D Pinball)
   - Centre of Mass and Moment of Inertia (e.g., Transformers Armada)
   - Momentum (e.g. Marble Madness, Real Pool, Pool)
   - Rotational Motion (e.g. Prop Cycle, camera movement in Tomb Raider III, Jak & Daxter, Tee Off Golf)
   - Force and Gravitation (e.g., Grand Prix Challenge, Lunar Lander, Doom II, Gavatza)
   - Oscillatory Motion (e.g., Colin McCraw Rally, [plus cameras within games using ‘caber’])
   - Collisions (e.g., Marble Madness, Havok Physics Engine games such as Max Payne 2 and Unreal Tournament 2003)
   - Particle Systems (e.g. ‘Fireworks’ for PS2)
   - Biomechanics of Character Animation (e.g., Quake 2, Sydney 2000)

(ii) Physics of Sound
   - Wave motion and Waveforms (e.g. Vibe Ribbon, [plus water within games using ‘caber’])
   - Wave frequency, velocity, amplitude, period (e.g. Rez, Music 2000)
   - Wave Superposition and Interference (e.g., Vibe Ribbon, Music 2000)
   - Wave Reflection and Transmission (e.g. Quake, Unreal Tournament, Half-Life)
   - Doppler Effect and Attenuation (e.g. Quake, Unreal Tournament, Half-Life)

(iii) Physics of 3D Computer Graphics
   - Viewing in 3D, view frustum, clipping planes, local length, depth of field (e.g., Colin McCraw Rally)
   - Lighting in 3D, source types, colour, decay and fall-off (e.g., Doom III, Rayman 2)
   - Shading, types of shading (faceted, smooth, specular), image mapping (e.g., Starblade [flat], Ridge Racer [gouraud], Metal Gear Solid 2 [specular])
   - Surface reflection and refraction (e.g., fire and water within games like Doom and Prince of Persia)

Reading Materials

HET324  Media Theory, DVD and Compositing
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET222 Digital Video and Audio • Corequisite: Nil • Teaching methods: Lectures, Laboratory classes, Online Delivery • Assessment: Group Short Video (20%), Solo Short Video (25%), Solo DVD Interface (25%), Three Group Presentations worth 10% each (30%)

A unit of study in the Bachelor of Arts (Games and Interactivity), Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Media Studies) and Bachelor of Multimedia.

Aims & Objectives
HET324 aims to give students a mixture of practical and theoretical knowledge about narratives, video editing, compositing and DVD authoring. An understanding of narrative and editing theory will assist students as they create stories using cinematic language appropriate for the Multimedia industry. Blue screen keying and special effects will be used to introduce students to video compositing and motion graphics.

This unit also introduces students to DVD interface design and authoring.

Content
- Narrative Theory - the three act play structure
- Narrative Theory - alternative structures
- Narrative Theory - the scene
- Narrative Theory - characterisation
- Editing Theory - history
- Editing Theory - current styles
- Editing Theory - genre
- Blue Screen Effects
- Video Compositing and Motion Graphics
- DVD Formats
- DVD Audio
- DVD Interface Design
- DVD Authoring

Reading Materials
Wright, S, Digital Compositing for Film and Video, Butterworth-Heinemann, Massachusetts, 2002.

HET325  Principles of Game Design
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET206 3D Animation and Special Effects • Corequisite: Nil • Teaching methods: Laboratory based tuition with continual practical experience through exercises and set tasks. • Assessment: Game Design Evaluation (35%), Reading Journal (30%), Final Exam (35%).

A unit of study in the Bachelor of Arts (Games and Interactivity), Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Media Studies) and Bachelor of Multimedia.

Aims & Objectives
- To develop an understanding of the design and development of multimedia games.
- To introduce a range of game principles and methodologies.
• To explore notions of narrative, storyboard, character and visual literacy particular to game playing milieux.
• To introduce students to game programming fundamentals.

Content
Principles of Game Design introduces students to the fundamentals of designing electronic games. Students apply previously developed skills to the design and implementation of a game of their choice through various projects. Students will be introduced to programming and basic interactive design for Multimedia games during the semester through laboratory-based assignment work.

• Game rules and play mechanics.
• Development and evaluation of game concepts.
• Game theory.
• Assessment and selection of game platforms.
• Visual literacy and communication.
• Learning curves, game addiction and longevity.
• Spatial and interface design.
• Artificial Intelligence, Avatars and control schemes.
• User-testing and User Analysis.
• Audio design.
• The Business of gaming.

Reading Materials

HET326 Electrical Power Systems
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET228 Electrical Actuators and Sensors • Corequisite: Nil • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Labs, Tests and Examinations
A unit of study in the Bachelor of Engineering (Electrical and Electronic Engineering).

Aims & Objectives
To introduce students to the fundamentals of Power Systems modelling and analysis.

Content
• Electrical Energy Supply Systems including per-unit Quantities
• Transmission Line Modelling
• Power System Modelling
• System Protection
• Economic Operations of Power System
• Power System Measurements/Instruments
• Unbalanced System Operation
• Power System Stability

Reading Materials

HET329 Digital Signal and Image Processing
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: H2M211 Engineering Mathematics III or H2M213 Engineering Mathematics 3B • Corequisite: Nil • Teaching methods: Lectures, Tutorials and Practical Sessions • Assessment: Examinations, Pracs
A unit of study in the Bachelor of Engineering (Electrical & Electronic Engineering), Bachelor of Engineering (Telecommunication & Internet Technologies), Bachelor of Science (Computer Science & Software Engineering), Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Research & Development)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Arts, Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Business, Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics) / Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Telecommunication & Internet Technologies), Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science ( Photonics) and Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies).

Aims & Objectives
The objective is to introduce the principles of signal processing, with an emphasis on discrete signal and image processing. The theoretical basis for linear processing schemes is presented together with discussions of a range of common algorithms and their implementations and uses.

Content
• Continuous time signals and systems.
• Fourier analysis.
• Continuous systems, linearity and time-invariance.
• Response of LTI systems, stability and causality, rational systems.
• Noise.
• Sampling and the sampling theorem.
• Practical aspects of sampling and reconstruction.
• Discrete time signals.
• Basic operations on signals.
• Discrete time Fourier transform, the DFT and the FFT.
• Discrete LTI systems and discrete linear convolution.
• FIR and IIR systems.
• Difference equations and their solutions.
• The z transform and its application to discrete time system analysis.
• Rational z transforms and the response of pole-zero systems.
• Structures for realising discrete LTI systems.
• Ideal filters.
• Causality and stability constraints.
• Rational transfer functions and approximations to ideal filters.
• Design of FIR filters, non-recursive FIR realisations.
• Linear phase filters.
• Use of DFT.
• Recursive FIR realisations.
• Design of recursive IIR filters.
• Digital integration and differentiation.
• Spectral analysis of continuous signals.
• Power and energy spectral densities, the spectra of random processes and the measurement of spectra.
• Discrete time spectral analysis.
• Calculation of spectra using the DFT.
• Introduction to parametric spectral estimation.
• Correlation techniques, matched filters, signal compression, non-linear processing, DSP hardware.
• Image processing.
• Grey level resolution, spatial resolution, contrast and brightness.
• The video signal, digital images, frame grabbers, colour images.
• Grey level mapping, histograms, point processes and convolution.
• 2D spatial frequency, the Fourier transform and filtering.
• Image segmentation.

Reading Materials

HET332 Interactive Multimedia
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET215 • Corequisite: Nil • Teaching methods: Laboratory based tuition with continual practical experience through exercises and set tasks.
• Assessment: Flash interface assignment (20%), Flash game assignment (45%), Test (10%), Examination (25%).
A unit of study in the Bachelor of Multimedia (Networks and Computing) /
Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Multimedia Software Development), Bachelor of Multimedia (Networks & Computing), and the Bachelor of Multimedia.

Aims & Objectives
To extend multimedia development and production skills to a professional level.

Content
- Thorough understanding of the strengths of different authoring environments.
- Basic understanding of software and programming issues in multimedia.
- Advanced scripting techniques for web-based multimedia.
- Advanced scripting techniques for CDROM multimedia development.
- Understanding programming standards, naming conventions and syntax.
- Working with predefined and custom objects.
- Debugging in different authoring environments.
- Developing game concepts.
- Packaging your software.

Reading Materials

HET336 Network Modelling and Analysis
12.5 Credit Points • 1 Semester • 54 Hours • Hawthorn, Sarawak • Prerequisite: HMS214 Engineering Mathematics 4B • Corequisite: NIL • Teaching methods: Lectures (35 hours), Tutorials (10 hours) and Laboratory Work (5 hours). • Assessment: 1 Mid Semester test, 1 Overall Laboratory Report, Final Examination.

A unit of study in the Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Telecommunication and Internet Technologies), Bachelor of Engineering (Telecommunication and Network Engineering), Bachelor of Engineering (Telecommunication and Network Engineering) / Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies).

Aims & Objectives
To examine issues relating to the performance of various telecommunication networks, and applied queuing theory for better design and improved efficiency of the telecommunication networks.

Students who successfully complete this unit of study will be able to:
- Understand different queuing models.
- Model and analyse the performance of various protocols and telecommunication networks using graph and queuing theory.

Content
- Probability and stochastic processes.
- Different queuing models: M/M/X, M/G/I, Engset, Gurev with priority.
- Applied queuing case study: Mobile Communications, TCP/IP protocol over wireless channel.
- Queuing networks.
- Routing in telecommunication networks.
- Network design and capacity planning.

Reading Materials

HET344 Mechatronics Systems Design
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET232 Embedded Microcontrollers • Corequisite: HES3350 Machine Design • Teaching methods: Lectures, tutorials and project work. • Assessment: Technical component • Examination. Project component - class presentation, report and project deliverables.

A unit of study in the Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Robotics and Mechatronics) and Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
- To bring together aspects of design in mechanical and electrical/electronics systems so that the student may have a good idea of the range of techniques available in designing a mechatronic system.
- To apply the knowledge and skills obtained in the previous two years of the course to the solution of real-world problems. By doing this, the student will be involved in considering the practical partitioning of a system between software, mechanical and electrical/electronic components.
- To further develop team skills in cooperation, coordination and scheduling of time and resources.

Content

References
Bolton, W, Mechatronics. 3rd edn, Addison-Wesley.

HET378 Integrated Circuit Design
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET431 Digital Electronic Design or HET202 Digital Electronics Design (from 2005) • Corequisite: NIL • Teaching methods: Lectures and Practical Work • Assessment: Class Presentations, Examinations, Pracs.

A unit of study in the Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electrical and Electronic Engineering) and Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
To provide students with an understanding of the current trends in high level synthesis using hardware description languages (HDL) and the methodologies involved in the design and integration of complex systems using computer-aided design tools.

Content
- Microelectronics design methodologies (ASIC and FPGA).
- Issues involved in high level synthesis.
- Hardware description language (VHDL) features.
- VHDL modelling techniques: structural and behavioural models.
- System implementation strategies.
- Technology-independent design.
- State machine VHDL description and synthesis.
- Hardware testing and design for testability.
- Design examples.
- Design methodology for high level synthesis.
- Partitioning in high-level synthesis.
- Algorithmic synthesis.
- Scheduling formulation and allocation.

Reading Materials
Perry, D, VHDL, McGraw-Hill.
Armstrong, J & Gary, F, Structured Logic Design with VHDL, Prentice Hall.
Bhasker, J, A VHDL Primer, Prentice Hall.
IEEE Design & Test of Computer Magazine.
HET401 Multimedia Project 1
12.5 Credit Points • 1 Semester • 1 Hour per Week (average) • Hawthorn, Sarawak • Prerequisite: HET213 User Experience Design (or corequisite), requires successful previous completion of 175 CP (75 CP in the case of the Bachelor of Multimedia), • Corequisite: HET213 User Experience Design • Assessment: Project: documentation 35%, Presentation 35%, Accountability (supervisor meetings) 10%, Assessor Panel Review 10%
A unit of study in the Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Networks & Computing); Bachelor of Multimedia (Business Marketing) Bachelor of Multimedia and Bachelor of Multimedia (Multimedia Software Development)
Aims & Objectives
To enable the student to acquire practical experience in multimedia technology, operating in a team environment.
Content
The multimedia project unit of study is for students in the final stage of the Bachelor of Multimedia course. The project unit is intended to bring together the skills and knowledge acquired/refined during the course, and to further develop these skills and knowledge. Typically, the project will incorporate aspects of project planning and design (preproduction), as well as usability testing and the development of some form of deliverable. The Bachelor of Multimedia course coordinator maintains a list of possible projects. Projects are normally drawn from this list, although projects outside this list may be possible. The projects involve group work. The ability to work effectively as part of a team is an important attribute in the multimedia industry, and will be a consideration in the assessment of projects. It is expected that wherever possible each project group will be liaising with an external client. Where necessary, and at the discretion of the course coordinator, an external project adviser may be appointed.
Reading Materials

HET402 Multimedia Project 2
12.5 Credit Points • 1 Semester • average of 1 Hour per Week • Hawthorn, Sarawak • Prerequisite: HET401 Teaching methods: Project: Assessment: Project documentation 26%, Presentation 20%, Accountability (supervisor meetings) 20%, Final deliverable 30%, Assessor Panel Review 10%
A unit of study in the Bachelor of Multimedia, Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Networks & Computing) and Bachelor of Multimedia (Multimedia Software Development)
Aims & Objectives
To enable the student to acquire practical experience in multimedia technology operating in a team environment.
Content
The multimedia project is a unit of study for students in the final stage of the Bachelor of Multimedia course. The project unit is intended to bring together the skills and knowledge acquired/refined during the course, and to further develop these skills and knowledge. Typically, the project will incorporate aspects of project planning and design (preproduction), as well as usability testing and the development of some form of deliverable. The Bachelor of Multimedia course coordinator maintains a list of possible projects. Projects are normally drawn from this list, although projects outside this list may be possible. The projects involve group work. The ability to work effectively as part of a team is an important attribute in the multimedia industry, and will be a consideration in the assessment of projects. It is expected that wherever possible each project group will be liaising with an external client. Where necessary, and at the discretion of the course coordinator, an external project adviser may be appointed.
Reading Materials

HET405 Research & Development Placement (Project 4)
50 Credit Points • Minimum 14 Weeks • Hawthorn, Sarawak • Prerequisite: 300 Credit Points • Assessment: This unit of study will be assessed as pass or fail on the basis of written reports from the student and the project supervisor.
A unit of study in the Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems)
Note: This unit of study is normally scheduled in the first semester of 4th year (7th academic semester). Students must have successfully completed at least 300 credit points of their course. Students will not be permitted to undertake this unit after the penultimate semester of their course.
Aims & Objectives
To develop within the student research and leadership competence towards the professional level, including:
- An understanding of the scientific research method.
- Practical design, research, analytical and development skills in a research environment.
- An ability to self-analyse, challenge and develop their understandings, abilities and attitudes.
- Communication skills including interview skills, developing and documenting professional practice via a written industry placement report and an oral presentation of this report.
- Teamwork skills by being an effective part of a multi-disciplinary team.
- Entrepreneurship skills by contributing to innovation and development during their industry placement.
- An understanding of the strategic, operational and technical levels of the organisation providing the industry placement.
- Refinement of their intended career path.
- Awareness of trends, opportunities and threats related to their intended career path.
- Identification of contacts and networks that may enhance their intended career path.
- Added motivation, confidence and maturity.
Content
Students will undertake a substantial project, usually as part of a multi-disciplinary team based within a research group in the university or in industry. A variety of projects and/or operational roles will be made available to the student. In exceptional cases, students may negotiate to pursue a project of their own with the agreement of the subject convener.
While projects will be of a substantial scientific research nature, they will generally be expected to include the development of hardware and/or software systems.
The Personal Development and Leadership program will be provided via Blackboard to develop leadership attributes and professional skills and an understanding of the organisational dynamics of change at the strategic, operational and technical/research levels.
HET406 Multimedia Data Processing
12.5 Credit Points • 1 Semester • 5.5 Hours • Hawthorn, Sarawak • Prerequisite: HET329 Digital Signal and Image Processing • Corequisite: HET329 Digital Signal and Image Processing • Teaching methods: 35 Hours of Lectures, 12 Hours of Tutorials, Four 3-Hour Laboratory Sessions • Assessment: 15% Assignments, 70% Examinations, 15% Laboratory Work
A unit of study in the Bachelor of Engineering (Electronics and Computer Systems)
Aims & Objectives
To develop a thorough understanding of the standard algorithms used for compression of the multimedia data, including text, images, audio and video, with a focus on the software/hardware implementation.
Content
- Introduction to information theory.
- Entropy.
- Lossless and lossy compression.
- Measures of performance.
- Huffman coding algorithm.
- Basic algorithm.
- Minimum variance Huffman codes.
Adaptive Huffman coding.
• Arithmetic coding, generating a binary code.
• Integer implementation.
• Applications to image compression.
• Vector quantization.
• Differential coding.
• Transform coding (discrete cosine transform) and application to image compression (JPEG).
• Video and audio compression.

Reading Materials

HET407 Multimedia Technology
12.5 Credit Points • 1 Semester • 4.5 hours per week • Hawthorn, Sarawak • Prerequisite: HET215 Multimedia Applications or Nil for students who commenced prior to 2004 • Corequisite: Nil • Assessment: Examination (60%), 4 Labs worth a total of 20%, 2 Computer tests worth a total of 20%

A unit of study in the Bachelor of Multimedia (Networks & Computing) / Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Multimedia Software Development), Bachelor of Multimedia (Networks & Computing), and Bachelor of Multimedia.

Aims & Objectives
To introduce an overview of the technologies that are essential for multimedia systems.

Content
• Overview of the human senses, particularly vision and hearing
• Colour theory and systems for colour representation
• Audio concepts: amplitude, loudness, frequency, pitch, phase, overtones, harmonics.
• Overview of analog and digital signals
• Sampling - digitizing analog signals, quantization
• Analog video and audio signals
• Image capture technology
• Audio capture technology
• Digital video and audio
• Digital image manipulation
• Digital audio manipulation
• MIDI technology.
• Image compression techniques
• Video compression techniques
• Audio compression techniques
• Introduction to and evolution of computer architecture.
• Internal and external computer interfaces and bus standards
• Data storage technologies.
• Video display technologies
• Audio reproduction technologies
• Virtual reality technology: visual, audio, haptic

Reading Materials
Online resources.

HET408 Biomedical Imaging and Emerging Technologies
12.5 Credit Points • 1 Semester • Average Weekly Contact of 3.6 Hours • Hawthorn, Sarawak • Prerequisite: HME211 Engineering Mathematics 3A or HME213 Engineering Mathematics 3B • Corequisite: Nil • Teaching methods: Lectures, tutorials and laboratory work. • Assessment: Assignments, examinations, projects.

A unit of study in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering) and Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
To gain a solid theoretical understanding of the physics and mathematics associated with major imaging modalities currently used in clinical and biomedical research settings, together with a review of new technology and its possible applications to medicine.

Content
• Biomedical imaging: image reconstructions from projections, diagnostic ultrasound, Doppler ultrasound, projection radiography, magnetic resonance imaging (MRI), spatially localised spectroscopy, radiolotope imaging, gamma scintigraphy, emission computed tomography, miscellaneous imaging modalities.
• General aspects of image display.
• Laser scanning confocal microscopy: multiphoton imaging nanotechnology.
• Fabrication methods including eximer laser.
• Physical properties of biological materials: visco-elastic properties.
• Methods of static and dynamic testing of bone, skin, muscle, arteries etc.
• Cell-cell adhesion, CAMs, adhesion to non living materials.
• Power sources for implantable medical devices: packaging, battery life and power density.
• Examples of devices: cochlear implant, glucose sensors, optical and membrane-based biosensors, implantable pumps operated by feedback.
• Rehabilitation technology: gait analysis.

Reading Materials

HET410 Network Administration
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures (24 hours), Tutorials (24 hours). • Assessment: Two Individual Tests, One Practical Examination, One Written Final Examination

A unit of study in the Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Multimedia (Networks & Computing), Bachelor of Engineering (Telecommunication & Internet Technologies), Bachelor of Engineering (Telecommunication & Network Engineering), Bachelor of Engineering (Telecommunication & Network Engineering) / Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Telecommunication & Network Engineering), Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & Internet Technologies) and Bachelor of Computing (Network Design & Security).

Aims & Objectives
Students who successfully complete this unit of study will be able to:
• Install Windows 2003 Server and Windows XP.
• Manage and maintain Windows 2003 Server and Windows XP.
• Perform user and domain resource management.
• Monitor and tune system performance.
• Implement secure Windows systems.
• Provide intranet/internet connectivity.
• Consider hardware requirements.

Content
• Introduction to Administering Accounts and Resources.
• Managing User and Computer Accounts.
• Managing Groups, Managing Access to Resources.
• Implementing and Managing Printing.
• Managing Access to Objects in Organisational Units.
• Implementing Group Policy.
• Implementing Administrative Templates and Audit Policy.
• Preparing to Administer a Server.
• Monitoring Server Performance.
• Managing Data Storage.
• Managing Disaster Recovery.
• Installing Microsoft Windows XP Professional.
• Automating an Installation of Windows XP Professional.
• Configuring Hardware on a Computer Running Windows XP Professional.
• Troubleshooting the Boot Process and Other System Issues.
• Configuring the Desktop Environment.
• Configuring TCP/IP Addressing and Name Resolution.
• Configuring Windows XP Professional to operate in Microsoft Networks.
• Supporting Remote Users.
• Configuring Windows XP for Mobile Computing.

Reading Materials
All students are required to have a copy of the following materials.
Microsoft Official Curriculum.
Managing and Maintaining a Microsoft Windows Server 2003 Environment
(Course 2273B)
Implementing MS Win XP Professional (Course 2272C)

HET411 Multimedia Interfaces
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite:
HET213 User Experience Design • Teaching methods: Lecture and tutorial
based tuition with continual practical experience through assignments, research
exercises and test tasks. • Assessment: Major Assignments, Examination
A unit of study in the Bachelor of Arts (Games and Interactivity).

Aims & Objectives
• To develop an understanding of the design and development of multimedia
interfaces, with particular emphasis on accessible, ubiquitous, engaging and immersive interfaces. Students will examine a range of
interface methodologies and practices through research and practical study. Topics will include:
  - History of interface design.
  - Interactive interface design techniques.
  - Human factors in interface design.
  - Interface design for different platforms and applications.
  - Cognition and mental models in interface design.
  - Creating immersive interfaces.
  - Using game design principles for non-game interface design.

Content
Multimedia interfaces introduces students to the fundamentals of designing interfaces for interactive multimedia, with particular emphasis on accessible, ubiquitous, engaging and immersive interfaces. Students will examine a range of interface methodologies and practices through research and practical study. Topics will include:
  - History of interface design.
  - Interactive interface design techniques.
  - Human factors in interface design.
  - Interface design for different platforms and applications.
  - Cognition and mental models in interface design.
  - Creating immersive interfaces.
  - Using game design principles for non-game interface design.

Reading Materials
Selected journal articles

HET411 Multimedia Interfaces
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite:
HET213 User Experience Design • Corequisite: Nil • Teaching methods: Lecture and tutorial
based tuition with continual practical experience through assignments, research exercises and test tasks. • Assessment: Major Assignments, Examination
A subject in the Bachelor of Arts (Games and Interactivity).

Aims & Objectives
• To develop an understanding of the design and development of multimedia
interfaces, with particular emphasis on accessible, ubiquitous, engaging and immersive interfaces. Students will examine a range of
interface methodologies and practices through research and practical study. Topics will include:
  - History of interface design.
  - Interactive interface design techniques.
  - Human factors in interface design.
  - Interface design for different platforms and applications.
  - Cognition and mental models in interface design.
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  - History of interface design.
  - Interactive interface design techniques.
  - Human factors in interface design.
  - Interface design for different platforms and applications.
  - Cognition and mental models in interface design.
  - Creating immersive interfaces.
  - Using game design principles for non-game interface design.

Reading Materials
Selected journal articles

HET412 Networking and Online Games
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn, Sarawak • Prerequisite:
HET104 LAN Principles or HIT2120 Data Communications and Security
and HIT1052 Software Development 2 or HIT3081 or HIT3181 Technical Software
Development or HIT2302 Object-Oriented Programming • Teaching methods:
Lectures plus laboratory-based project work • Assessment: Assignments, Examination
A unit of study in the Bachelor of Multimedia (Games and Interactivity) / Bachelor of
Science (Computer Science and Software Engineering).

Aims & Objectives
This unit of study will provide students with exposure to, and understanding of,
IP-based networking fundamentals as they pertain to interactive, multiplayer
online computer games. The focus will be on how the Internet's technical
capabilities enable a variety of client-server and client-client communication
models, and how the Internet's performance limitations impact on a game
developer's ability to support seamless interactive and immersive experiences
for their players. Students will end up with a deep appreciation for the engineering
trade-offs inherent in using wide-area and local-area IP networks for multiplayer
immersive environments, covering at least the First Person Shooter (FPS),
Massively Multiplayer Online Role Playing Game (MMORPG), and Real Time
Strategy (RTS) games.

Content
The unit of study will review IP networking fundamentals, cover concepts of
unicast UDP/IP and TCP/IP communication, and use high level examples of
existing multiplayer online games to discuss ISP considerations (predicating traffic
loads from games) and game developer considerations (e.g. lag compensation,
dealing with packet loss, etc).

Basic review of 'The Internet', IP addressing schemes, IP routing, hierarchy
device's, evolution of multiplayer games as a driver for online service
implementation (e.g. broadband).

• 'History'(1): early networked games (e.g. 'DOOM' broadcasting on Ethernet,
  Doom2 improving network utilisation, networked space warfare games of the
  'turns happen every X hours', etc).

• 'History'(2): putting 'games' into a broader context of 'immersive environments'
  and distributed simulation environments (e.g. US military and DARPA funded
  work in the 1990s).

• Network transport - how the choice of UDP versus TCP depends on game
  style (interactivity).

• Where does Lag and packet loss come from and why are they important?
  (Network congestion in ISP networks and, abstractly, in home routers).

• Importance of Lag compensation techniques across different game styles.

• Current research on traffic lag, jitter and loss sensitivity in players.

• Broadband access - how the different technologies (e.g. Cable, ADSL, wireless)
  affect consumer experience in online games.

• Where do players come from? Topological distributions of game players and
  and the implications for optimal location and distribution of servers on the network.

• Traffic patterns and their impact on the underlying IP network (e.g. packet size
  distributions, packets per second, impact on jitter, correlation of client-server
  traffic, burliness).

• Future directions (emerging technologies that may affect how ISPs offer or
deploy services in support of interactive multiplayer games, IP service quality,
impact of NAT/NOT on end to end transparency and client-client
communication models, relationship to peer-to-peer communications models,
etc).

Reading Materials
Armitage, G, Citypool, M & Branch, P Networking and Online Games:
Understanding and Engineering Multiplayer Internet Games, John Wiley &
HET416  Computer Systems Engineering
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET220 Embedded Microcontrollers & HET378 Integrated Circuit Design • Corequisite: Nil • Teaching methods: 36 Hours Lectures, 11 Hours Tutorials, 22 Hours Laboratory and Project Work • Assessment: Examination 60%, Laboratory and Project Work 40%
A unit of study in the Bachelor of Engineering (Electrical and Electronic Engineering), and Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
To develop an understanding of computer system design, particularly the relationship between hardware and software on system performance.

Content
- Fundamentals of computer design.
- Instruction set principles.
- CISC and RISC architectures.
- Pipelining concepts.
- Cache properties and performance.
- Memory-hierarchy design.
- Multiprocessors and thread-level parallelism.
- Storage systems.
- Interconnection networks and clusters.

Reading Materials

Recommended Reading

HET417  Photonics and Fibre Optics
12.5 Credit Points • 1 Semester • 4.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Laboratory Sessions and Tutorials • Assessment: Assignments, Computer-Managed Learning, Examinations, Labs, Tutorials
A unit of study in Bachelor of Engineering (Telecommunication & Internet Technologies) or Bachelor of Science (Biomedical Sciences), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Research & Development) / Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Telecommunication & Internet Technologies) and Bachelor of Multimedia (Networks & Computing) / Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Photonics), Bachelor of Science (Physics) / Bachelor of Engineering (Telecommunication & Network Engineering), and an elective in Bachelor of Engineering (Robotics & Mechatronics).

Aims & Objectives
To give students a broad outline of basic photonics principles and fibre optics applications, especially in the areas of communications and sensing. It is assumed that students already have an understanding of the basic principles of physics.

After completing this unit, students should have a basic understanding of:
- Models of light.
- The history of fibre optics.
- Optical fibre operation principles and manufacture.
- Light sources and detectors.
- Light modulation.
- Transmitters and receivers.
- Optical fibre components.
- Fibre optic telecommunication systems.
- Optical fibre systems and imaging.
- Optical fibre manufacture (including production methods, fibre types and cabling).
- Incoherent light sources (including wideband and line sources, electroluminescence).
- Lasers: light sources (including lasing mechanism, laser resonant cavities, mode structure, laser types).
- Light detectors (including thermal & quantum detectors).
- Detector circuits.
- Modulation of light.
- Fibre optics transmitters and receivers.
- Fibre optic components.
- Critical fibre testing and measurement.
- Fibre optic telecommunications systems.
- Simple fibre optic sensors and imaging.
- Simple FO sensors for measurement of temperature, pressure, position.
- Interferometric fibre optic sensors, including the fibre optic gyroscope and Bragg grating sensors.

Reading Materials

HET419  Physiological Modelling
12.5 Credit Points • 1 Semester • 6 Hours per Week • Hawthorn • Prerequisite: HET128 Physics 2 or HET213 Engineering Mathematics 3B • Corequisite: Nil • Teaching methods: Lectures, PracS and Tutorials • Assessment: Assignments, Examinations, Pracs
A unit of study in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering) and Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
To gain a solid theoretical understanding of the physics, mathematics and computational techniques associated with modelling human physiological processes.

Content
- Physiological control systems control theory, signal flow diagrams, fundamental block representations, open-loop gain.
- Dynamic responses Bode and Nyquist analysis, transfer function discovery-examples of physiological investigations.
- Cardiovascular system, mathematical models of the arterial system.
- Respiratory and thermal control.
- Multicompartment systems and methods analysis, models of membrane systems, channel statistics.
- Modelling of endocrine systems.
- Volume conductor theory: application to the EEG.
- Neurovolume conductors, models of brain electrical and magnetic activity.
- Modelling techniques.
- Application of control system techniques to human physiology.
- Compartmental analysis, statistical channels.

Reading Materials

HET422  Biomedical Project
12.5 Credit Points • 1 Semester • 12 hours • Hawthorn • Prerequisite: completed at least 200 CPS excluding IBL, and cannot be taken during IBL • Teaching methods: Self-paced, independent work based on a research project • Assessment: Meeting with the supervisor and contributing to a subject discussion board (10%); Written Report (90%), Class presentation (10%).
A unit of study in the Bachelor of Science.

Aims & Objectives
To develop within the student an understanding of the scientific research method, practical research skills, and practical design and development skills in a research environment.
Content
Students will undertake a substantial biomedical science-based project, individually, or as part of a team of students, possibly based within a research group in the university or external establishment. A variety of projects will be made available to the student. In special cases, students may negotiate to pursue a project of their own with the agreement of the unit convenor. While projects will be of a substantial scientific research nature, they are generally expected to include the need to develop hardware or software systems. A regular seminar series, featuring key internal and external researchers, may be offered. These seminars could cover specific research topics or aspects of research project management and general research skill development.

Reading Materials
As recommended by the supervisor to support the students’ project.

HET424 IP Technologies
12.5 Credit Points • 1 Semester • 80 Hours • Hawthorn, Sarawak • Prerequisite: LAN Principles (HET104) • Teaching methods: Online self study, lectures (12 hrs), laboratories (36 hrs), tutorials (12 hrs) • Assessment: Weekly online tests; Two online final tests; One Case Study; Skills exam; Final exam
A unit of study in the Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunication & Network Engineering) Bachelor of Computing, Bachelor of Multimedia (Networks & Computing), Bachelor of Multimedia (Networks & Computing) / Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Engineering (Telecommunication & Internet Technologies) / Bachelor of Science (Computer Science & Software Engineering) and Bachelor of Computing (Network Design & Security), Bachelor of Engineering (Telecommunication & Internet Technologies) / Bachelor of Science (Computer Science & Software Engineering)

Aims & Objectives
Students who successfully complete this unit will be able to:
• Install and configure CISCO switches and routers in multiprotocol internetworks using LAN and WAN interfaces.
• Provide Level 1 troubleshooting service.
• Improve network performance and security.
• Perform entry level tasks in the planning, design, installations, operation and troubleshooting of Ethernet and TCP/IP Networks.

Content
This unit provides training to prepare for siting the external CCNA certification examinations. Note the CCNA exam is conducted independently of SUT and there is a fee charged by the testing body.
• Variable length subject masking (VLSM)
• Classless routing protocols - RIPv2, OSPF and EIGRP
• Switching concepts, switch design and switch configuration
• Spanning Tree Protocol (STP)
• Virtual LANs
• Virtual Trunking Protocol (VTP)
• Scaling Networks with NAT and PAT
• Dynamic host configuration protocol (DHCP)
• WAN Technologies
• PPP
• ISDN and DDR
• Frame relay
• Network Management

Reading Materials
WAN Technologies CCNA4 Labs and Study Guide, Cisco Press, 2006

HET425 Nucleonics and Spectroscopy
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisites: HET132 and either HET116 or HET124 • Corequisites: Nil • Teaching methods: Lectures and Practicals • Assessment: Assignments, Examinations, Practicals
A unit of study in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems) and Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
Students will be introduced to a number of spectroscopic techniques with an emphasis on nuclear techniques and instrumentation, and interactions of electromagnetic radiation with matter. The unit has a large practical component where students will gain knowledge and experience in techniques used daily in industry, medicine, laser optics and materials analysis.

Content

Reading Materials
Wehr, MR, Elementary Modern Physics, Addison-Wesley.

HET427 Electrical Safety
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET326 Electrical Power Systems • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Labs, Tests and Examinations
A unit of study in the Bachelor of Engineering (Electrical and Electronic Engineering).

Aims & Objectives
This unit aims to introduce the fundamental concepts in electrical safety and the physical processes occurring at high voltage engineering.

Content
• Electrical safety and the law. Electric field fundamentals: field distribution, field grading.
• Devices normally providing protection from electric shock, circuit breakers, relays and surge arresters, equipment rating for operation in steady state and cyclic modes, electro-technical materials: conducting- and insulating materials.
• Lightning: the lightning stroke, atmospheric over-voltages in the electric power system.
• Earthing of power supplies; need for bonding.
• RCDs.
• Choice and use of protective equipment, including fuses.
• Affects of electric and magnetic fields and electromagnetic radiation.
• Electrosurgical hazards, electrical discharges.
• Electric breakdown strength fundamentals: the electron avalanche, Paschen’s law.
• Harmonics and their effects.
• High voltage equipment testing methods and their use in insulation condition.
monitoring of electrical energy systems
• Dimensioning stresses: electrical-, thermal- and mechanical stresses.

Reading Materials

HET433 Multimedia Interfaces
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET213 User Experience Design • Teaching methods: Lecture and tutorial with continual practical experience through assignments, research exercises and set tasks. • Assessment: Laboratory work (20%), Assignments (80%).
A unit of study in the Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Computer Science and Software Engineering). Note: This unit of study will be offered from 2008.

Aims & Objectives
• To develop an understanding of the design and development of multimedia interfaces.
• To introduce a range of interface design principles and methodologies.
• To explore the theory of interface structure, composition and utilisation.
• To introduce students to human factors in interface design.
• To explore the implementation of game design and gameplay principles within non-games interfaces.

Content
Multimedia interfaces introduces students to the fundamentals of designing interfaces for interactive multimedia, with particular emphasis on accessible, ubiquitous, engaging and immersive interfaces. Students will examine a range of interface methodologies and practices through research and practical study. Topics will include:
• History of interface design.
• Interactive interface design techniques.
• Human factors in interface design.
• Interface design for different platforms and applications.
• Cognition and mental models in interface design.
• Creating immersive interfaces.
• Using game design principles for non-game interface design.

Reading Materials
Selected journal articles.

HET434 Games & Interaction Project
12.5 Credit Points • 1 Semester • Typically 48 hours per semester • Hawthorn • Prerequisite: Completion of 175 credit points • Teaching methods: Lectures, regular contact with supervisor and project team sessions. • Assessment: Project planning and development, satisfactory progress with project.
A unit of study in the Bachelor of Arts (Games and Interactivity)

Aims & Objectives
This project unit is for students in the final stage of the Bachelor of Multimedia (Games and Interactivity) course. The unit is one of a pair of two 'capstone' units, HET434 and HET435, intended to integrate and develop the skills and knowledge acquired/refined during the course. This unit of study covers the final project production and completion stages.

The objectives of the unit of study include:
• To develop practical experience in multimedia aspects of the design and development of games and/or interactive environments or interfaces, synthesising skills learnt in other multimedia coursework subjects and successfully executing a major project in a team environment.

Content
• Project execution.
• Usability testing.
• The development of an approved form of multimedia deliverable plus a final project report and presentation.

Reading Materials
Course notes available from the subject website.

HET435 Games & Interactivity Project 2
12.5 Credit Points • 1 Semester • Variable depending on project, typically 18 hours per semester • Hawthorn • Prerequisite: HET434 Games & Interaction Project or HIT3158 • Corequisite: Nil • Teaching methods: Regular contact with supervisor and project team sessions. • Assessment: Project development and satisfactory completion, report and presentation.
A unit of study in the Bachelor of Arts (Games and Interactivity)

Aims & Objectives
The aims of the unit of study is to explore the key ideas of the emerging high-speed broadband networks, and the mixed services and traffic types they carry. The significance of broadband capability is explored, together with its promises and difficulties, including some important unsolved problems.

Content
The unit of study is expected to adapt in response to emerging issues. It is concerned broadly with two major issues in current and future high-speed broadband networks.
broadband networks - the ability to deliver properly managed and differentiated quality of service and the drive for higher speed access to support more diverse multimedia applications. In both areas there are difficult technical challenges, and techniques continue to evolve over time.

Reading Materials

HET452 Multimedia Communications
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HET314 Communications Principles, HET313 Telecommunication Technologies and HET335 Network Modelling and Analysis • Co-requisite: Nil • Teaching methods: Lecture (12 hrs), Laboratory (12 hrs) • Assessment: Examinations, Laboratory Reports
A unit of study in the Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Telecommunication and Internet Technologies) and Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies).

Aims & Objectives
Students who successfully complete this unit of study will be able to:
- Understand and use common mobile and personal communications terminology.
- Explain the behaviour of mobile communications systems and techniques.
- Analyse critically and evaluate performance of systems and sub-systems.
- Design systems to specified parameters, using analytical and empirical rules.

Content
- Introduction to wireless communications.
- Cellular concepts, frequency reuse, interference and capacity, channel assignment, handover, and GoS.
- Mobile radio signal propagation: large-scale path loss, shadowing, propagation models, link budgets.
- Small-scale fading and multipath propagation: factors causing small-scale fading, Doppler shifts, parameters of mobile channels, types of small-scale fading, models.
- Digital modulation for cellular mobile systems: Overview of factors influencing choice, line coding, pulse shaping, linear modulation (BPSK, DPSK, QPSK, OQPSK, P/3OQPSK), constant envelope modulation (FSK, MSK, GMSK), QAM, CDMA (DS-SS).
- Multiple access systems and cellular standards: GSM, CDMA, WCDMA and capacity comparisons.
- Wireless PAN, LAN and MAN technologies including 802.11, 802.15, 802.16.

Reading Materials

HET489 Robotic Control
12.5 Credit Points • 1 Semester • 6 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET312 Control and Automation • Co-requisite: Nil • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Pracs
A unit of study in the Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Arts, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Robotics and Mechatronics) and Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
- To study the dynamic behaviour of electrical DC machines from the point of view of displacement, velocity and acceleration control.
- To develop state space equations and their applications in control.
- To study the design and analysis of continuous and discrete control systems.
- To study stability in control systems.

Content
- Continuous Control Systems: Review of control systems analysis. Dynamic models of dc machines. The state model. Position and velocity control with compensation to meet a specification in a variety of applications. The design of forward path compensation, including PID controllers and state variable feedback in both analog and digital form. Analysis and design of non-linear control systems compensation, using classical techniques and computer simulation. The application of software packages such as Matlab and Simulink to solution of dynamic problems.
- Digital Control Systems

Reading Materials

HET501 Research and Development Project 5
12.5 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Assessment: Assignments, Class Presentations
A unit of study in the Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
To develop in students:
- An understanding of scientific research method.
- Practical research skills.
- Practical design and development skills in a research environment.

Content
Students will undertake a substantial project, usually as part of a team of students or based within a research group in the university or external industrial research establishment. A variety of projects will be made available to the student. In exceptional cases, students may negotiate to pursue a project of their own with the agreement of the subject convenor. While projects will be of a substantial scientific research nature, they are generally expected to include the need to develop hardware or software systems. A regular seminar series, featuring key internal and external researchers, may be offered. These seminars could cover specific research topics, or aspects of research project management and general research skill development.

HET503 Lasers
12.5 Credit Points • 1.5 Semesters • 40 Hours • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Assignment(s) 20%, Final Examination 80%
A unit of study in the Bachelor of Science (Biophotonics) (Honours), Bachelor of Science (Optoelectronics and Lasers) Honours.

Aims & Objectives
This unit will provide a broad and unified description of the generation and amplification of coherent laser radiation at the simplest level compatible with correct physical understanding.

Content
- Energy levels and the interaction of radiation with matter.
- Pumping processes and population inversion.
- Introduction to optical cavities.
- Rate equation treatment of 3- and 4-level lasers.
- Modes of laser oscillation: normal mode, Q-switching and mode locking.
- Examples of lasers, optical pumping systems.
- Gaussian beam characteristics and propagation.
- Resonant optical cavities, mode volume and mode selection techniques.

Reading Materials
HET504 Quantum Mechanics A
12.5 Credit Points • 1.5 Semesters • 40 Hours • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Assignments 20%, Final Examination 80%.
A unit of study in the Bachelor of Science (Optronics and Lasers) (Honours).

Aims & Objectives
This unit will provide an introduction to quantum mechanics, suitable for students entering the honours course with a minimal background in modern physics. On completion of this unit, students will have sufficient understanding of quantum mechanics to describe and analyze situations involving the quantum nature of light and matter and their interactions.

Content
Although the focus will be on theory, strong links will be made to experimental situations. The mathematical complexity will be appropriate for any student with a good background in science or engineering.

• Angular momentum: Central potentials, spherical harmonics. Spin, magnetic moment.
• Hydrogen atom: Radial equation. Spectra.

Reading Materials

HET505 Advanced Optical Imaging Theory
12.5 Credit Points • 1.5 Semesters • 40 Contact Hours • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Assignments 50%, Essay 50%.
A unit of study in the Bachelor of Science (Biophotonics) (Honours).

Aims & Objectives
This unit aims to provide a solid understanding of the principles of diffraction theory of light and Fourier optics, and an introduction to advanced optical imaging theory.

Content
• Diffraction theory and approximations.
• Three-dimensional optics of a thin lens.
• Point spread function and transfer function analysis.
• Imaging with high aperture lenses.
• Imaging with an ultrashort pulsed laser beam.
• Imaging with aberration.
• Introduction to confocal imaging systems.

Reading Materials

HET506 Modern Optics
12.5 Credit Points • 1.5 Semesters • 40 Hours • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Assignment final examination 80%.
A unit of study in the Bachelor of Science (Optronics and Lasers) (Honours).

Aims & Objectives
This unit aims to provide a solid understanding of basic concepts in modern optics and an introduction of fundamental principles of optical design.

Content
• Principles of wave optics.
• Introduction to Fourier optics.
• Introduction to optical engineering.

• Lenses and aberrations.
• Optical instruments.
• Detectors.
• Spatial light modulators.
• Lasers.
• Linear system transforms.
• Diffraction and interference.
• Holography.
• Signal processing.
• Fibre optics.

Reading Materials

HET507 Atomic and Molecular Spectroscopy & Non-linear
12.5 Credit Points • 1.5 Semesters • 40 Hours • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Assignments 20%, Final Examination 80%.
A unit of study in the Bachelor of Science (Biophotonics) (Honours) and Bachelor of Science (Optronics and Lasers) (Honours).

Aims & Objectives
This unit will provide:

• A detailed understanding of the structure of atoms and molecules.
• An understanding of the many non-linear interactions between light and matter and their applications.

Content
Spectroscopy:
• One-electron atoms.
• Schrödinger equation, bound states, energy eigenfunctions.
• Transition rates, Einstein co-efficients, selection rules.
• Fine structure, hyperfine structure.
• Stark shift, Zeeman shift, isotope shift.

Beyond one-electron atoms:
• Schrödinger equation for two-electron atoms, Pauli exclusion principle.
• Central field approximation, selection rules.

Molecular structure:
• Diatomic molecules.
• Rotational and vibrational states.
• Electronic and nuclear spins.

Spectroscopic properties:
• Natural linewidth, doppler broadening, collisional broadening.
• Homogeneous and inhomogeneous broadening, power broadening.
• Saturation, optical pumping.

Laser spectroscopic methods:
• Raman spectroscopy, time-resolved spectroscopy, coherence spectroscopy.
• Molecular beams, collisions.

Non-linear spectroscopy:
• Hole burning, Lamb dip, saturation spectroscopy.
• Polarisation spectroscopy, multiphoton spectroscopy.

Laser trapping and cooling:
• Radiation pressure, optical dipole force, magnetic and optical traps.
• Sub-doppler cooling, atom optics, evaporative cooling.
• Bose-Einstein condensation.

Non-linear optics:
• Anisotropic polarisability of atoms and molecules: susceptibility tensor.
• Crystallographic and optic axes of crystals and optical materials.
• Second harmonic generation.
• Phase matching: types I and II.
• Index matching in uniaxial crystals.
• Critical and non-critical phase matching.
• Optical parametric oscillators, signal and idler beams.
• Non-linear effects in optical fibres.
Aims & Objectives

The aims of this unit are to give students a well-developed grounding in the principles underlying the theory of optical waveguides, and in the principles and application of fibre optic sensing.

Content

Optical Waveguide Theory (10 Hours)
- Maxwell's equations for waveguides.
- Planar dielectric waveguides.
- Cylindrical dielectric waveguides.
- Dispersion, mode coupling and loss mechanism.
- Single mode fibres.

Fibre Optic Sensors (14 Hours)
- Important sensor characteristics.
- Classification of sensors.
- Intrinsic and extrinsic.
- Intensity, phase and modal distribution sensors.
- Matrix representation of sensor transfer characteristics.
- Representation of polarisation effects, Poincare sphere, Jones vectors and matrices.
- Single mode sensors, interferometers, polarimters via Jones matrices.
- Two beam interferometers, Michelson, Mach-Zehnder, Sagnac.
- Signal processing.
- Active homodyne, passive homodyne, two wavelength homodyne.
- Heterodyne: principles, demodulation schemes.
- Pseudo-heterodyne.
- Synthetic and quadrature recombination heterodyne.
- Low coherence interferometer.
- In-fibre Bragg grating sensors.
- Characteristics of FBGs.
- Manufacture of FBGs.
- Type 1 and type 2 FBGs.
- FBG devices and sensor applications.

Reading Materials


HET509 Advanced Optical Microscopy

Advanced Optical Microscopy
12.5 Credit Points • 1.5 Semesters • 40 Hours • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Assignments 20%, Final Examination 80%

A unit of study in the Bachelor of Science (Biophotonics) (Honours) and Bachelor of Science (Optronics and Lasers) (Honours)

Aims & Objectives

This unit aims to provide:
- An introduction to fundamental principles of modern optical microscopy.
- Various applications of modern microscopy.

Content

- Fundamental principles of confocal microscopy.
- Fibre confocal microscopy and coherent imaging.
- Fluorescence confocal microscopy and incoherent imaging.
- Multi-photon excitation in microscopic imaging.
- Multi-colour confocal imaging.
- Imaging through weakly and highly scattering media.
- Tissue optics.
- Introduction to image visualisation and reconstruction.
- Comparison of wide-field/deconvolution and confocal microscopy.
- Fundamental principles of near-field microscopy.
- Fundamental principles of X ray imaging.

Reading Materials


HET510 Laser Optical Diagnostics in Engineering

Laser Optical Diagnostics in Engineering
12.5 Credit Points • 1.5 Semesters • 40 Hours • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Assignment(s) 10%, Final Examination 90%

A unit of study in the Bachelor of Science (Biophotonics) (Honours) and Bachelor of Science (Optronics and Lasers) (Honours)

Aims & Objectives

- To provide students with a thorough understanding of the principles for selected laser diagnostic techniques, including laser Doppler anemometry (LDA) and particle image velocimetry (PIV).
- To develop foundational knowledge of laser optical, data acquisition and data processing techniques.
- To introduce to students to modern flow measurement applications using LDA and PIV.

Content

Introduction to laser optical diagnostic techniques in engineering, Laser Doppler Anemometry (LDA):
- Principle.
- Laser diodes.
- Light scattering.
- Doppler signal.
- Optical system for LDA.
- Signal processing.
- Data processing.
- Error analysis.
- Particle Image Velocimetry (PIV):
  - Principle.
  - Optical imaging system for PIV.
  - Imaging illumination.
  - Image recording.
  - Accuracy and spatial resolution.
- Modern flow measurement applications using LDA and PIV.

Reading Materials

Van de Hulst, HC, Light Scattering Small Particles, Dover, NY, 1981.

HET511 Honours Research Project
50 Credit Points • 2 Semesters • 5 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Research Project • Assessment: Written Research Report (with Oral Defence) 100%
A unit of study in the Bachelor of Science (Biophotonics) (Honours) Bachelor of Science (Optoelectronics and Lasers) Honours.

Aims & Objectives
This unit aims to develop the ability to undertake original scientific research as part of a research group. At the completion of the unit the student will have demonstrated the ability to define and investigate a scientific question, and have contributed new knowledge to the particular field under investigation. It is an expectation (although not a requirement) that upon completion of the honours research project, the student will continue on to a higher degree in research (MSc or PhD).

Content
The student will choose one of several projects offered by the various groups involved in the Honours course. The student will work in contact with the project supervisor and other group members as appropriate.

Reading Materials
To be advised.

HET512 Research Methods
0 Credit Points • 1 Semester • 12 Hours • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures and Informal Discussion Groups • Assessment: No Formal Assessment, Attendance Only
A unit of study in the Bachelor of Science (Biophotonics) (Honours) and Bachelor of Science (Optoelectronics and Lasers) (Honours).

Aims & Objectives
This unit provides honours students with important information and skills necessary for efficient and safe activity in a research environment.

Content
- Safety: Laser, mechanical, electrical issues and procedures.
- Information retrieval and management: Databases in the physical sciences. Searching and retrieving data/papers/patents. Use of software for storing and retrieving research information. Requirements for research record keeping, log books etc.
- Computational physics: Introduction to a modern symbolic mathematics programming language (e.g. Maple, Mathematica).

Reading Materials
To be advised.

HET513 Design of DSP Architectures
12.5 Credit Points • 1 Semester • 5.5 Hours per Week (average) • Hawthorn, Sarawak • Prerequisite: HET329 Digital Signal and Image Processing • Corequisite: Nil • Teaching methods: Lectures, Labs, Tutorials • Assessment: Assignments, Examinations, Experiments
A unit of study in the Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), and Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
This is an advanced unit in digital signal processing architectures which focuses on the implementation and design of families of DSP architectures using high level architecture transformation with in-depth analysis of the relevant algorithms.

Content
- DSP algorithms’ iteration bounds: notation of iteration bound and impact on achievable sampling rate, techniques to compute iteration bounds in DSP algorithms.
- Pipelining and parallel processing: pipelining of IIR digital filters, parallel processing and design of parallel IIR systems, pipelining and parallel processing for low power design.
- Retiming: properties of retiming, retiming techniques, cutset retiming and pipelining, retiming for clock period minimization.
- Unfolding: unfolding algorithm, applications of unfolding, retiming for register minimisation.
- Folding: folding transformation: design of time multiplexed architectures, register minimisation techniques using lifetime analysis and forward-backward register allocation, register minimisation in the folded architectures.
- Systolic array design: fast systolic arrays design, selection of scheduling vector, 2-D systolic array.
- Efficient algorithm computation using high level algorithm transformation, algorithm-architecture transformation.
- Parallel processing for IIR filters, low power IIR filter design using pipelining and parallel processing.
- Bit-level arithmetic architectures.
- Distributed arithmetic.
- Programmable digital signal processors.

Textbooks

References

HET514 Quantum Mechanics B
12.5 Credit Points • 1.5 Semesters • 40 Hours • Hawthorn • Prerequisite: Appropriate Undergraduate Introductory Quantum | Corequisite: Nil • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Assignments 20%, Final Examination 80%
A unit of study in the Bachelor of Science (Optoelectronics and Lasers) (Honours).

Aims & Objectives
This unit will provide an advanced course in quantum mechanics.

Content
- Semi-classical approximation: Classical limit of quantum mechanics. WKB method.
- Advanced topics: Time-dependent perturbation theory. Collision theory, potential scattering.
- Relativistic quantum mechanics: Klein–Gordon equation, Dirac equation.

Reading Materials
Merzbacher, E, Quantum Mechanics, Wiley, 1961.

HET515 Advanced Embedded Systems
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET222 Embedded Microcontrollers and HET378 Integrated Circuit Design • Teaching methods: Lectures (36 hrs), Laboratory and Project Work (30 hrs) • Assessment: Examinations, Labs, Project Work
A unit of study in the Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems) and Bachelor of Engineering (Robotics and Mechatronics).

Note: This unit of study will be offered from 2007.

**Aims & Objectives**

To expose students to techniques and methodology in embedded system design. Students will develop hands-on experience in design, simulation and implementation using EDA tools. Upon satisfactory completion of this unit of study, students should be able to carry out the design of an embedded system from requirement analysis through to implementation. To achieve this the student shall:

- Understand the constraints and characteristics of embedded systems.
- Understand the hardware/software trade-offs inherent in embedded systems.
- Understand the particular requirements of real-time systems.
- Be able to apply this understanding to carry out the design process.
- Become familiar with a range of design methodologies through their application to a significant design problem.

**Content**

- Overview of embedded systems and their characteristics.
- Embedded system modelling.
- Embedded system hardware and software.
- Real-time constraints.
- Real-time operating systems, software vs hardware concurrency, OS facilities.
- Hardware/software co-design, partitioning and tradeoffs.
- Embedded development tools. Analysis and design methods using graphical notations e.g. UML including state diagrams and automated generation of code.
- System-on-a-chip (implementation of a FPGA based project incorporating CPU & peripherals).

**Textbooks**


**Recommended Reading**


**HET517 RF Electronics Design**

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET202 Digital Electronics Design & HET306 Circuits and Electronics 2 • Corequisite: NI • Teaching methods: Lectures, Tutorials and Laboratories • Assessment: Assignments, Class Presentations, Examinations

A unit of study in the Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Science (Computer Science and Software Engineering).

**Aims & Objectives**

This unit of study aims to:

- Familiarise students with modern radio electronic devices, circuits and systems.
- Provide a relevant background to the wireless communications standards and to expose students to design concepts, methodology and design flow for low power RF signal circuits.
- Investigate some topical aspects of RF signal design.
- Develop an understanding of how to analyse complex wireless telecommunication systems.
- Gain an appreciation for the behaviour of basic circuit devices at RF.
- Develop an understanding of the building blocks of a wireless telecommunications system.
- Develop an appreciation for the design methodology required for wireless telecommunication systems.
- Gain practical skills in software design tools.

**Content**

- Introduction to RF Design.
- Devices and Models.
- Matching Networks.
- Frequency Selective Circuits.
- Small Signal Amplifiers.
- Power Amplifiers.
- Oscillators.
- Modulation/Demodulation.
- Mixers/Phase-Locked Loop PLL.
- Mixed Signal ADC & DAC.

**References**


See lecture notes for further references.

**Recommended Reading**


**HET527 Sleep and Attention**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET226 Sensory Systems or HET219 Neurological Monitoring • Corequisite: NI • Teaching methods: Lectures, Tutorials and Seminars • Assessment: Assignments, Examinations

A unit of study in the Bachelor of Science (Psychology and Psychophysiology). An understanding of the physiological and behavioural processes underlying normal sleep, attention and disorders of these states.

**Content**

- Sleep, consciousness and coma: stages of sleep, desynchronisation of EEG activity, functional models of sleep, sleep monitoring, sleep disorders.
- Attention: mechanisms, neurophysiology, models, assessment of attention, disorders of attention.

**Reading Materials**

Hobson, J. Sleep, Scientific American Library, New York, 1995


**HET528 Higher Cortical Functions**

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET231 Perception and Motor System/ HET226 Sensory Systems • Corequisite: NI • Teaching methods: Lectures, Tutorials and Seminars • Assessment: Assignments, Class Presentations, Examinations

A unit of study in the Bachelor of Arts (Psychology and Psychophysiology) and Bachelor of Science (Psychology and Psychophysiology).

**Aims & Objectives**

- Review basic techniques in neuroscience research of brain and behaviour.
- Provide a knowledge of the neurophysiological and behavioural processes of motivation, memory, speech and language.

**Content**

- Memory: neuronal plasticity, psychophysiological studies and models, memory pathology and neuropsychology, connectionist models.
- Speech and language: psychophysiological models, brain laterality and language processes, disorders of speech and language.

**Reading Materials**


HET550 Design and Development Project 1
12.5 Credit Points • 1 Semester • 1 Hour per Week average • Hawthorn, Sarawak • Prerequisite: Completion of 287.5 credit points excluding IBL • Corequisite: Nil • Teaching methods: Seminars (10 hrs), Weekly meeting (10 hrs), Assessment: Research Poster, Final Report.
A unit of study in the Bachelor of Multimedia (Networking and Computing) / Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering); Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Electronics and Computer Systems) /Bachelor of Arts, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business: Bachelor of Engineering (Telecommunication and Internet Technologies), Bachelor of Multimedia (Networking and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies).

Aims & Objectives
Students who successfully complete this unit will be able to:
- Plan a complete project where time, availability of hardware and money are realistic restraints.
- Develop skills in planning and executing a major project in a relevant discipline.
- Apply knowledge acquired during the course to planning and design of a project.
- Develop their research skills.
- Conduct a literature search.
- Present their research findings using a poster.
- Write a comprehensive thesis to detail all initial research, literature survey and the work performed.

Content
Students are expected to work on group projects in a typical group size of three (although other group sizes will be considered). The project itself must be continued and completed in HET556.

Students are expected to select a project from a list prepared by academic staff, or students may suggest their own topic based on an individual interest or arising from their period of Industry-Based Learning.

The project may be university or industry based. It may take various forms in which technology, research and development, experimental work, computer analysis, industry liaison and business acumen vary in relative significance. It is expected that the project will involve a substantial software development component. Students are expected to conduct literature surveys, to investigate probable solutions, prepare designs, analyse, and where appropriate, implement and test designed products and processes.

Reading Materials
As recommended by the supervisor to support the student's project.

HET551 Design and Development Project 1
12.5 Credit Points • 1 Semester • 1 Hour per Week (average) • Hawthorn, Sarawak • Prerequisite: Completion of 287.5 credit points (excluding IBL) • Corequisite: Nil • Teaching methods: Staff Supervision • Assessment: 100% on the initial design, planning and progress as a group and an HTML presentation of the project and its progress.
A unit of study in the Bachelor of Engineering (Robotics and Mechatronics).

Aims & Objectives
- To develop skills in planning and executing a major project in a relevant discipline.
- To apply knowledge acquired during the course.
- To develop skills in literature research.
- To develop an individual ability to pursue an engineering objective.
- To complete the research needed for completion of the project in Final Year Project 2.

The objective of the unit is to give the student experience in:
- Planning a complete project where time, availability of hardware, and money are realistic restraints. This includes planning a project with other students and working as a team with a team leader.
- Constructing and testing hardware and/or writing and commissioning software.
- Planning and delivering a short technical lecture.
- Writing a comprehensive thesis to detail all initial research, literature survey and the work performed.
- The personal rewards in completing a complex engineering task.

Content
Students are expected to work on group projects in a typical group size of three (although other group sizes will be considered). The project itself must be continued and completed in HET557.

Students are expected to select a project from a list prepared by academic staff, or students may suggest their own topic based on an individual interest or arising from their period of Industry-Based Learning.

The project may be university or industry based. It may take various forms in which technology, research and development, experimental work, computer analysis, industry liaison and business acumen vary in relative significance. It is expected that the project will involve a substantial software development component. Students are expected to conduct literature surveys, to investigate probable solutions, prepare designs, analyse, and where appropriate, implement and test designed products and processes.

Reading Materials
As recommended by the supervisor to support the student's project.

HET552 Design and Development Project
12.5 Credit Points • 1 Semester • 1 1/2 Hours per Week (average) • Hawthorn • Prerequisite: Completion of 287.5 credit points (excluding IBL) • Corequisite: Nil • Teaching methods: Staff Supervision • Assessment: A unit of study in the Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering).

Aims & Objectives
The objective of the unit is to give the student experience in:
- Planning a complete project where time, availability of hardware, and cost are realistic restraints.
- Constructing and testing hardware and/or writing and commissioning software.
- Planning and delivering a short technical lecture.
- Writing a comprehensive thesis to detail all initial research, literature survey, the work performed, software listings, results obtained and further direction of the project.
- The personal growth that accrues in designing, building, testing and commissioning a substantial engineering task.

Content
Student groups are required to perform a group design, develop the project and present a thesis. It is recommended that the student group select the project and its suitability negotiated with a staff member whose academic interests are consistent with the project scope. It is the responsibility of the student group to negotiate the project with the staff member who is likely to supervise it. Projects may be selected from topics based on relevant interest or arising from their period of Industry-Based Learning or from suggestion from academic staff.

This unit will include a fortnightly seminar on issues such as project management, legal and regulatory matters, electronic design automation, and occupational health and safety.

During the later part of the semester each student group is required to perform a 20 to 30 minute presentation of the project attended by all class members and interested staff.

Reading Materials
As recommended by the supervisor to support the student's project.

HET553 Software Engineering and Robotics Project
12.5 Credit Points • 1 Semester • Variable • Hawthorn • Prerequisite: HIT3158 Software Engineering Project A and 287.5 credit points of the degree excluding IBL • Corequisite: Nil • Teaching methods: Staff Supervision • Assessment: Product Developed, Documentation Produced, Presentation.
A unit of study in the Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering).
Aims & Objectives
- To develop a project with a significant software component relevant to the field of 'Robotics and Mechatronics Engineering' in a medium-size team (about 6 members).
- To exercise skills in the areas of constructing and testing of software, electronics hardware and mechanical systems.
- To write a comprehensive thesis to detail all initial research, literature survey, the work performed, software listings, results obtained and further direction of the project.
- Planning and delivering a short technical lecture.

Content
- Initiation, specification, design, implementation, testing and deployment of a 'Mechatronics and Robotics' system with a significant software component. The project requires students to function as members of a sizable team (where possible, these projects will be for industry clients).
- During the later part of the semester each student group is required to deliver a report and perform a 20 to 30 minute presentation of the project attended by all class members and interested staff.

Reading Materials
As recommended by the supervisor to support the student's project.

HET556 Design & Development Project 2
12.5 Credit Points • 1 Semester • Typically an average of 1 Hour per Week • Hawthorn, Sarawak • Prerequisite: HET550 Design and Development Project 1 • Teaching methods: Staff Supervision • Assessment: based on completion, testing and commissioning of the project, an oral presentation and a written thesis detailing all the work undertaken in HET550 and HET556

A unit of study in the Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electronics and Computer Systems)/Bachelor of Arts, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Telecommunication and Internet Technologies), Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies) and the Bachelor of Engineering (Robotics and Mechatronics).

Aims & Objectives
- To develop skills in planning and completing a major project in robotics, mechatronics and software development.
- To develop skills in preparing a major project report.
- To apply knowledge acquired during the course.
- To develop an individual ability to pursue an engineering objective.
- To prepare and present a professional seminar on the project.

Content
Students are expected to have selected a project for the Final Year Project 1. The project may be university- or industry-based. It may take various forms in which technology, research and development, experimental work, computer analysis, industry liaison and business acumen vary in relative significance. It is expected that the project will involve a substantial software development component.

Students are expected to investigate probable solutions, prepare designs, analyse, and where appropriate, implement and test designed products and processes.

Reading Materials
As recommended by the supervisor to support the student's project.

HET557 Design & Development Project 2
12.5 Credit Points • 1 Semester • Variable depending upon project: Typically an average of 1 Hour per Week • Hawthorn, Sarawak • Prerequisite: HET551 • Corequisite: In some cases the units HET557 and HET557 may be studied in the same semester, in which case HET551 is considered to be a corequisite. • Teaching methods: Staff Supervision • Assessment: Completion, Testing and Commissioning of the Project, Oral Presentation, Written thesis Detailing All Work Undertaken in HET551 and HET557

A unit of study in the Bachelor of Engineering (Robotics and Mechatronics) and Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
- To develop skills in planning and completing a major project in robotics, mechatronics and software development.
- To develop skills in preparing a major project report.
- To apply knowledge acquired during the course.
- To develop an individual ability to pursue an engineering objective.
- To prepare and present a professional seminar on the project.

Content
Students are expected to have selected a project during Final Year Project 1. The project may be university- or industry-based. It may take various forms in which technology, research and development, experimental work, computer analysis, industry liaison and business acumen vary in relative significance. It is expected that the project will involve a substantial software development component.

Students are expected to investigate probable solutions, prepare designs, analyse, and where appropriate, implement and test designed products and processes.

Reading Materials
As recommended by the supervisor to support the student's project.

HET559 Power Electronics
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET229 Electrical Actuators and Sensors • Corequisite: Nil • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Labs

A unit of study in the Bachelor of Engineering (Electrical and Electronic Engineering) and Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
To study the characteristics of modern semiconductor power electronic devices for best selection to a certain application. To study the application of power electronic circuits in the fields of AC and DC drives, power generation and transmission and energy conservation.

Content
- Introduction.
- A revision of power semiconductor devices in the transistor, thyristor and hybrid families.
- Driver and trigger circuits for power devices.
- Protection of power semiconductor devices.
- A revision of the principle of pulse width modulation and its advantages.
- Switched mode power supplies.
- Machine drives.
- A detailed study of modern AC and DC variable speed electrical machine drives.
- Calculation of component ratings, power factor, utilisation factor, retrieval of energy etc. for a given application.
- Principle of regenerative braking.
- Application and implementation of closed loop control to machine drives.
- Power generation and transmission.
- A review of alternators and power systems.
- The application of power electronics modern alternator field control and in transmission of power, including DC transmission.
- The superposition of information transmission on power lines.
- Energy conservation.
- Solar energy and other sources of energy.
- Battery technology as applied to the storage of electrical energy.
- The application of semiconductor inverters including uninterruptible power supplies to battery sources.

Reading Materials
HET560  Power System Operation and Control
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HET526 Electrical Power Systems • Corequisite: Nil • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Labs, Tests and Examinations
A unit of study in the Bachelor of Engineering (Electrical and Electronic Engineering).

Aims & Objectives
This unit examines the economic operation of power systems, system protection, power system stability, dynamics and control of power systems, high voltage DC transmission, and load flow interface.

Content
• Introduction to the main techniques currently used in the operation and control of power systems: economic dispatch and optimal power flow
• Unit commitment; fuel scheduling and management of storage hydro-electric releases;
• Production costing, reliability calculations and operations planning
• Medium Voltage Distribution
• Balanced Fault Calculations and Selection of Protective Equipment
• Unbalanced Faults
• Raceway Design
• Switchgear and Motor Control Centres.
• Power Quality
• Optimization applications in power systems
• Economic dispatch and optimal power flow
• Unit commitment and energy interchange, Generation control
• State estimation, Static security assessment
• Dynamic performance analysis and simulation
• Voltage stability

Reading Materials

HET601  Research and Development Project 6
12.5 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Assessment: Assignments, Class Presentations
A unit of study in the Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
To develop in students:
• An understanding of the scientific research method.
• Practical research skills.
• Practical design and development skills in a research environment.

Content
Students will undertake a substantial project, usually as part of a team of students or based within a research group in the university or external industrial research establishment. A variety of projects will be made available to the student. In exceptional cases, students may negotiate to pursue a project of their own with the agreement of the subject convenor.

While projects will involve substantial scientific research, they are generally expected to include the need to develop hardware or software systems. A regular seminar series, featuring key internal and external researchers, may be offered. These seminars could cover specific research topics or aspects of research project management and generic research skill development.

HET631  Abnormal Psychophysiology
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET527 Sleep and Attention • HET528 Higher Cortical Functions • Corequisite: Nil • Teaching methods: Lectures, Tutorials and seminars • Assessment: Assignments, examinations, tests
A unit of study in the Bachelor of Arts (Psychology and Psychophysiology) and Bachelor of Science (Psychology and Psychophysiology).

Aims & Objectives
Provide an understanding of the psychophysiology of emotional processes, affective and anxiety disorders, schizophrenia, and the processes of normal and abnormal aging.

Content
• Emotional processes: psychophysiological correlates of emotional processes.
• Psychopathology: psychophysiology of affective disorders, anxiety disorders, somatoform and dissociative disorders, substance abuse and organic disorders.
• Schizophrenia: biological factors, including biochemical abnormalities and brain imaging studies, information processing abnormalities, behavioural measures, models of the disorder and therapeutic approaches.
• Aging: psychophysiology of normal aging in the brain, and in the dementias.

Reading Materials

HET701  Research and Development Project 7
12.5 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Assessment: Assignments, Class Presentations, Seminar, Class Presentations
A unit of study in the Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems)

Aims & Objectives
To develop within the student:
• An understanding of the scientific research method.
• Practical research skills.
• Practical design and development skills in a research environment.

Content
Students will undertake a substantial project, usually as part of a team of students or based within a research group in the university or external industrial research establishment. A variety of projects will be made available to the student. In exceptional cases, students may negotiate to pursue a project of their own with the agreement of the unit convenor. While projects will be of a substantial scientific research nature, they are generally expected to include the need to develop hardware or software systems. A regular seminar series, featuring key internal and external researchers, may be offered. These seminars could cover specific research topics or aspects of research project management and generic research skill development.

HET704  Neurophilosophy
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lecture • Assessment: 50% Essay and 50% Examination
A unit of study in the Bachelor of Science in Psychology/Neuropsychology (Honours).

Aims & Objectives
Neuropsychology is a course designed for students that critically evaluates the case for mental states being comprehensible in terms of the physical states of a material system.

Content
Starting from a brief introduction to the philosophy of science and epistemology the current status of neurobiological theories of mind is examined in the context of the "hard" problems of brain: what type of evidence is sufficient to establish a neurobiological basis for the psychological categories of memory, emotion, consciousness and free will.

Recommended Reading

HET707  Neuroscience Methods
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Tutorials • Assessment: Seminar presentation, Examinations
A unit of study in the Bachelor of Science (Psychophysics)(Honours) and Bachelor of Science (Biomedical Sciences)(Honours).

Aims & Objectives
• To develop a deeper understanding of the methodological and experimental
Aims & Objectives

The aim of this unit is to expose students to advanced techniques and knowledge in biomedical sciences by means of lectures, seminars and discussion. Both theoretical and practical approaches are acceptable. Presentations will be focussed on the individual’s needs where possible, but generic topics will also be covered to increase the breadth of knowledge of state-of-the-art techniques in biomedical science. By writing a detailed technical report on a provided topic the student will be able to demonstrate mastery of the topic, as well as ability to search the literature and make critical judgment of the relevance of the sourced material. Students may be required to visit other institutions and laboratories to gain a full understanding of the discipline area and available technologies. Their cogent argument will be assessed for indication of their ability to draw conclusions and to elucidate new directions for research in their area of interest. Verbal and written communication skills will be improved by giving seminars to peers and to staff as well as creation of the dissertation.

HET803 Honours Project 1
25 Credit Points • 1 Semester • At least 4 (9) one hour duration lectures on operational research. Regular contact time negotiated with • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Supervised research • Assessment: Seminar presentation and submission of research synopsis
A unit of study in the Bachelor of Science (Psychophysiology)(Honours) and Bachelor of Science (Biomedical Sciences)(Honours).

Aims & Objectives

The aim of this unit is to prepare students for undertaking their research project. Material which ensures that they are able to plan, execute and analyze their data appropriately is provided in the lecture series. Students will be expected to produce a detailed proposal of their project, prepare ethics applications and write a synopsis of their research goals in the form of a well-documented literature review and project justification. They will be expected to present a summary of this synopsis in a seminar to staff and students. Overall the subject is intended to develop independent learning. The project component develops thorough skills in a particular chosen area and develops communication skills. This unit is meant to allow the student to continue their work in Semester 2 as part of HET802 Honours Project 2.

HET802 Honours Project 2
37.5 Credit Points • 1 Semester • At least 1 Hour per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Supervised research • Assessment: Seminar Presentation and submission of literature review. A unit of study in the Bachelor of Science in Psychology/Psychophysiology (Honours).

Aims & Objectives

The aim of this project is to develop independent learning through practical investigation. The project develops thorough skills in a particular chosen area and develops communication skills.

HET801 Honours Project 1
37.5 Credit Points • 1 Semester • At least 4 x 1 hour duration lectures on operational research • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Supervised research • Assessment: Seminar Presentation and submission of research synopsis
A unit of study in the Bachelor of Science in Psychology/Psychophysiology (Honours).

Aims & Objectives

The aim of this unit is to prepare students for undertaking their research project. Material which ensures that they are able to plan, execute and analyze their data appropriately is provided in the lecture series. The students will be expected to produce a detailed proposal of their project, prepare ethics applications and write a synopsis of their research goals in the form of a well-documented literature review and project justification. They will be expected to present a summary of this synopsis in a seminar to staff and students. Overall the subject is intended to develop independent learning. The project component develops thorough skills in a particular chosen area and develops communication skills. This unit is meant to allow the student to continue their work in Semester 2 as part of HET802 Honours Project 2.
HEW050 Industry-Based Learning (Placement 1)
50 Credit Points • 20 Weeks minimum (full-time or equivalent) • Hawthorn  
Prerequisite: 237.5 credit points • Corequisite: NIL • Teaching methods: There is no formal teaching for this unit. It involves undertaking approved engineering work in industry. • Assessment: IBL is assessed on a pass/fail basis, having regard to the timely submission of set tasks.  
A unit of study in the Bachelor of Engineering (Biomedical Engineering), Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Civil Engineering), Bachelor of Engineering (Civil Engineering) / Bachelor of Business, Bachelor of Engineering (Mechanical Engineering), Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business, Bachelor of Engineering (Robots and Mechatronics), Bachelor of Engineering (Robots and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Product Design Engineering), Bachelor of Science (Mechatronics), Bachelor of Science (Photons) / Bachelor of Engineering (Telecommunication and Network Engineering), Bachelor of Technology (Air Transportation Management) and Bachelor of Technology (Air Transportation Management) / Bachelor of Business.

Aims & Objectives

Content
Work requirements are established by the placing organisation in consultation with Swinburne staff.

HEW055 Industry-Based Learning (Placement 2)
50 Credit Points • 20 Weeks minimum (full-time or equivalent) • As required • Hawthorn  
Prerequisite: 237.5 credit points • Corequisite: NIL • Teaching methods: There is no formal teaching for this unit. It involves undertaking approved engineering work in industry. • Assessment: IBL is assessed on a pass/fail basis, having regard to the timely submission of set tasks.  
A unit of study in the Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business, Bachelor of Engineering (Mechanical Engineering), Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business, Bachelor of Engineering (Robots and Mechatronics), Bachelor of Engineering (Robots and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Civil Engineering), Bachelor of Engineering (Civil Engineering) / Bachelor of Business, Bachelor of Business, Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Civil Engineering), Bachelor of Engineering (Civil Engineering) / Bachelor of Business, Bachelor of Engineering (Mechanical Engineering), Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business, Bachelor of Engineering (Robots and Mechatronics), Bachelor of Engineering (Robots and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Product Design Engineering), Bachelor of Science (Photons) / Bachelor of Engineering (Telecommunication and Network Engineering), Bachelor of Technology (Air Transportation Management) and Bachelor of Technology (Air Transportation Management) / Bachelor of Business.

Aims & Objectives

Content
Work requirements are established by the placing organisation in consultation with Swinburne staff.

Reading Materials
As suggested by the Swinburne academic supervisor to support the student's task environment.

HFTV232AD Film and Television Project Series 1
12.5 Credit Points • 12 Weeks • 4 Hours per Week • Prahran  
Prerequisite: VFTV112AD Film and Television Language and Communication 1, VFTV122AD Film and Television Language and Communication 2 • Teaching methods: Production studio, laboratory and seminar-based tuition with continual practical experience through exercises and set tasks • Assessment: Projects will be appraised progressively  
A unit of study in the Associate Degree of Film and Television.

Aims & Objectives
• To consolidate the scriptwriting skills developed in Semesters 1 & 2.
• To consolidate the pre-visualisation skills developed in Semesters 1 & 2.
• To further advance skills in the area of concept and project development.
• To fully develop and document an original project for production in Semester 4.

Content
This unit focuses on the process of ideas development and pre-visualisation. Students develop a new project in preparation for production in Semester 4.

Reading Materials
As suggested by the Swinburne academic supervisor to support the student's task environment.
They are to research their chosen subject, production pathways, production techniques and visual style and develop industry standard pre-visualisation documentation. This documentation is to include a synopsis, treatment, final draft script, style guide, storyboard, animatic, production budget and schedule.

**Reading Materials**


**HFTV233AD Screen Techniques 1**

- 12.5 Credit Points • 12 Weeks • 4 Hours per Week • Prerequisite: HFTV111AD Film and Television Technology Production 1, HFTV121AD Film and Television Technology Production 2 • Teaching methods: Production studio, laboratory and seminar based tuition with continual practical experience through exercises and set tasks • Assessment: 4 Technical exercises 40%, major project 60%

A unit of study in the Associate Degree of Film and Television.

**Aims & Objectives**

- To further extend the production skills and practices developed in Semesters 1 & 2.
- To develop expertise within specific production areas.
- To continue to provide students with high-end production experience in collaboration with selected industry professionals.

**Content**

This unit provides students with the opportunity to specialise in a range of technical production processes. Specialisations may include cinematography, lighting, shooting for special effects, editing and other production areas as appropriate. Students with interests in particular production areas will be encouraged to follow individual pathways in a supportive production environment. Industry professionals will be invited to provide specialist training within chosen fields of expertise. This unit may also provide the opportunity for industry-based production attachments.

**Reading Materials**


**HFTV241AD Film and Television Technology 4**

- 12.5 Credit Points • 12 Weeks • 8 Hours per Week • Prerequisite: HFTV231AD Film and Television Technology 3 • Teaching methods: Production studio, laboratory and seminar based tuition with continual practical experience through exercises and set tasks • Assessment: Projects will be appraised progressively

A unit of study in the Associate Degree of Film and Television.

**Aims & Objectives**

- To ensure a deeper understanding of the fundamental principles, production techniques and practices of the film, television and digital imaging industries.
- To consolidate the skills and techniques developed in the previous technology subjects.

**Content**

Film and Television Technology 4 focuses specifically on interactive screen design and development. It provides a theoretical guide to the principles of film and television practice as they relate to interactivity. This unit covers areas such as interactive technologies and delivery formats, games development platforms and interactive design practice. It gives students a comprehensive and practical introduction to appropriate industry standard production equipment, computing systems, development platforms, networks and software packages. It also provides an opportunity for students to consolidate these principles and techniques in a practice-based production outcome.

- Introduction to Interactive Television.
- Game Prototype development.
- Introduction to Broadband technologies.

**Reading Materials**


**HFTV242AD Film and Television Project Series 2**

- 25 Credit Points • 12 Weeks • 7 Hours per Week • Prerequisite: HFTV232AD Film and Television Project Series 1 • Teaching methods: Production studio, laboratory and seminar based tuition with continual practical experience through exercises and set tasks • Assessment: Projects will be appraised progressively

A unit of study in the Associate Degree of Film and Television.

**Aims & Objectives**

- To further consolidate the production skills developed in Semesters One to Three.
- To further consolidate the post-production skills developed in Semesters One to Three.
- To further advance skills in all areas of industry-based production practice.
- To realise the production proposal developed in Project Series 1.

**Content**

This unit focuses on the practical implementation of the fundamental aspects of film, video and digital imaging production processes. Having researched their chosen subject, production pathways and production techniques in Semester 1, students will utilise their completed pre-visualisation materials and their newly acquired creative and technical skills to create a complete production. Students are expected to manage their production and post-production processes in accordance with industry standards and practices. Students will experience the production process from beginning to end, including casting, crewing, scheduling, shooting, directing, sound recording, art direction, editing, sound design and digital integration. Students will be encouraged to assist one another in the production process and to pursue areas of specific technical and/or creative interest within the context of the subject outcome requirements.
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Reading Materials

HFTV243AD Screen Techniques 2
12.5 Credit Points • 12 Weeks • 4 Hours per Week • Prerequisite: VFTV111AD Film and Television Technology Production 1, VFTV121AD Film and Television Technology Production 2 • Teaching methods: Production studio, laboratory and seminar based tuition with continual practical experience through exercises and set tasks • Assessment: 4 technical exercises 40%, major project 60%

A unit of study in the Associate Degree of Film and Television.

Aims & Objectives
• To further extend the production skills and practices developed in previous semesters.
• To further develop levels of expertise within specific production areas.
• To continue to provide students with high-end production experience in association with selected industry professionals.

Content
This unit provides students with a second opportunity to specialise in a range of technical production processes. Specialisations may include cinematography, lighting, shooting for specials effects, editing and other production areas as appropriate. Students with interests in particular production areas will be encouraged to follow individual pathways in a supportive production environment. Industry professionals will be invited to provide specialist training within chosen fields of expertise. This unit may also provide the opportunity for industry based production attachments.

Reading Materials

HFTV244 Title Design
12.5 Credit Points • 12 Weeks • 3 Hours per Week • Prerequisite: Nil • Teaching methods: Screenings, Production Studio, Laboratory and seminar based tuition with continual practical experience through exercises and set tasks • Assessment: Projects will be appraised progressively

A unit of study in the Bachelor of Film and Television.

Aims & Objectives
• To introduce the Title Sequence as a specific production component with particular narrative and design considerations and requirements.
• To provide a thorough knowledge of the history and creative development of the Title Sequence.
• To provide an understanding of the role the Designer within the filmmaking and digital imaging production process.
• To consolidate and further explore Motion Graphic Design, Typography and Animation techniques within the context of screen based delivery.

Content
The unit focuses on the history and the role of the Title Sequence within a range of genres and delivery formats including narrative film, documentary, animation and interactive productions. Students are to develop a greater understanding of typography and its various functions within screen design. Students are expected to create a number of title sequences using both traditional and digital techniques. Students are to collaborate with one another in the role of Title Designer on at least one HFTV242 FTV Project Series 2 production.

Reading Materials

HFTV244AD Title Design
12.5 Credit Points • 12 Weeks • 4 Hours per Week • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Screenings, production studio, laboratory and seminar based tuition with continual practical experience through exercises and set tasks • Assessment: 2 technical/design exercises 30%, title design project 70%, attendance - hurdle

A unit of study in the Associate Degree of Film and Television.

Aims & Objectives
• To introduce the title sequence as a specific production component with particular narrative and design considerations and requirements.
• To provide a thorough knowledge of the history and creative development of the title sequence.
• To provide an understanding of the role the designer within the filmmaking and digital imaging production process.
• To consolidate and further explore motion graphic design, typography and animation techniques within the content of screen based delivery.

Content
This unit of study focuses on the history and the role of the title sequence within a range of genres and delivery formats including narrative film, documentary, animation and interactive productions. Students are to develop a greater understanding of typography and its various functions within screen design. Students are expected to create a number of title sequences using both traditional and digital techniques. Students are to collaborate with one another in the role of title designer on at least one HFTV242AD Film and Television Project Series 2 production.

Reading Materials

HIT0004 Careers in the Curriculum
0 Credit Points • 1 Semester • 10 Hours • Hawthorn, Sarawak • Prerequisite: Nil • Teaching methods: Class • Assessment: Attendance and assignment

A core unit of study in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Software Engineering, Bachelor of Science (Computing)Bachelor of Multimedia (Multimedia Software Development), Bachelor of Computing, Bachelor of Information Systems and Bachelor of Information Systems / Bachelor of Business.

Aims & Objectives
To introduce career planning and career management skills to students.

Content
• Career Decision-Making and Planning: models and theories.
• Self Awareness: Identification of employment-related skills, interests, values and styles.
• Opportunity Awareness: Research and understand significant aspects of work such as the range of jobs available, the nature of work in the 21st century, trends in work and further training options.
• Job Hunting: Develop and implement skills in resumes and cover letter writing, interviews, networking and Assessment Centre participation.

Reading Materials
Charlton, P. Tap the Hidden Job Market, Choice Books, 2002
Stevens, P. Win That Job! The Centre for Workforce Counselling, 2000
Villiers, A. How to Address Selection Criteria, Southwood Press, 2001

HIT301 - Algorithmic Problem Solving
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Nil • Preclusions: HIT2000 Introduction to Programming and HIT1401 Introduction to Programming in .NET (Students may undertake only one introductory programming unit) • Teaching methods: Lecture (24 hrs), Laboratory (24 hrs) • Assessment: 3 Assignments, 2 Tests and a Final Examination

Aims & Objectives
• Given a simple problem statement, students will be able to produce a software solution that uses the fundamental programming constructs of sequence, selection and repetition.
• Students will be able to outline the stages of a simplified software development lifecycle, and will be able to describe the actions performed within each of these stages.
• Given some program source code students will be able to read and explain its purpose.
• Students will be able to use both functional and data programming abstractions to solve programming problems, including: Data types; including pointers, Functions and procedures; Call by value, and Call by reference; Simple collections, and Composite types.
• Given the source code to a program and a description of its purpose, students will be able to discover errors in logic and/or syntax without compiling or running the program.
• Students will be able to convert structured program designs expressed using diagrams and text into software solutions.
• Given source code students will be able to draw memory maps to illustrate the relationships between variables, pointers, and parameters called by reference or value. 
• Given a problem description students will be able to apply a number of problem solving techniques to produce an appropriate software solution. These include: Problem decomposition. Recursion.
• Given a problem description for a small single user program, students will be able to: Determine appropriate problem solving techniques with which to approach the problem; Analyse the requirements to fully understand the problem; Produce a design to address the problem using appropriate techniques, diagrams, and text; Implement the solution using the subject's programming language.
• Students will be able to build and use simple dynamic data structures, including lists and dynamic arrays.
• Given the source code of a program, students will be able to evaluate its implementation and suggest areas for improvement.

Content
• Working with Computers: Binary, memory, variables, and data types. Giving the computer instructions using statements, expressions, and conditions. Control flow using branches and loops.
• Programming language syntax: Data, and types of data. Statements, Conditions, and Expressions. Implementing functions and procedures.
• Working with multiple data elements. Representing composite data.

Reading Materials
Sally Fincher, Studying Programming, Palgrave MacMillan, 2006

HIT1307 - Internet Technologies
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: Programming eg HIT1051 Software Development 1, HIT1301 Algorithmic Problem Solving, HIT2080 Introduction to Programming, HIT1404 Introduction to Programming in .NET and Databases and SQL eg HIT1402 Database Analysis and Design, HIT2016 Database 1 • Prclusions: HIT1091 Web Development • Teaching methods: Lecture (2 hrs per week), Laboratory (1 hr per week) • Assessment: Assignments, Examination, Labs

A unit of study in the Bachelor of Computing, Bachelor of Computing (Network Design and Security), Bachelor of Science (Professional Software Development) and Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
• Students will be able to describe the basic infrastructure and architecture of the Internet, including the main protocols.
• Students will be able to use tools to query parts of the Internet infrastructure including name servers, individual machines, and web sites.
• Students will be able to list and describe contemporary Internet applications, their purpose, internal architectures, and related security, commercial and social issues.
• Given a mock-up of a web page, students will be able build an implementation using appropriate content representation and layout technologies.
• Given a design and mock-up, students will be able to develop simple database driven web applications using a server-side scripting language.
• Given a screen shot or access to a web application, students will be able to apply appropriate techniques and principals to evaluate its usability and accessibility.

Content
Internet infrastructure and architecture:
• Network architecture (gateways and routers).
• The main internet protocols and standards (TCP/IP, DNS, MIME, HTTP, SSL).
• Servers on the internet (web servers, and name servers, search engines).
• Client devices including assistive, mobile, PDA's and aggregation models.
Contemporary Web Applications:
• Introduction to common web applications (browser, search, WIKI, BLOG, email, etc.).
• Social and commercial issues of contemporary web applications.
• Security concepts and issues related to web technologies.
Web Development:
• Developing web sites with XHTML, CSS, and JavaScript, DHTML.
• Integration and appropriateness of multimedia technologies.
• Requirements for client and server side Interactivity.
• Developing simple database driven application with PHP and MySQL.

Usability and Accessibility:
• Evaluating web sites and applications.
• Usability principals, features and tools.
• Accessibility principles, guidelines and standards.

Reading Materials

HIT1312 - Computer and Logic Essentials
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Co-requisite: Nil • Teaching methods: Lectures (2 hrs per week), Laboratory (2 hrs per week) • Assessment: Assignments, Examination

A unit of study in the Bachelor of Computing, Bachelor of Science (Professional Software Development) and Bachelor of Science (Computer Science and Software Engineering).
Aims & Objectives

- To introduce students to a number of basic fundamental concepts of information technology.
- To develop a basic understanding of the component hardware parts of a computer and the functions they perform.
- To develop a basic understanding of the interactions between these component hardware parts.
- To develop a basic understanding of the reasons for operating systems, compilers and interpreters.
- To develop a basic understanding of the component software parts of a computer operating system and their functions.
- To introduce students to assembly language programming.
- To make students aware of a number of trade-offs that inevitably occur in any computer system design.

Content

- Basic computer organisation, Von Neumann and Harvard architectures.
- Memory types and organisation.
- Serial and parallel input/output.
- An introduction to interfacing to the analogue world.
- Number representations, the conflict between speed and precision.
- The CPU in more detail.
- An introduction to a microcomputer.
- An introduction to assembly language programming.
- An introduction to program timing considerations - interrupts.
- An introduction to data storage technologies.
- An introduction to assemblers, compilers and interpreters.
- An introduction to the main components of an operating system.

Reading Materials


HIT1322 Enterprise Technologies and Architectures

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: Nil • Prerequisites: HIT1401 Introduction to Business Information Systems • Teaching methods: Lectures/Seminars (2 hrs per week), Tutorial (1 hr per week) • Assessment: Folio (30%), Oral presentations (30%), Project Report (40%)

Aims & Objectives

The aim of this unit of study is to provide students a conceptual overview of how a range of Enterprise Applications work. To support this effort, students would be exposed to the set of popular technologies that underpin these applications. It is expected that students who complete this unit will have a good conceptual understanding of the various technologies that underpin the modern software applications and will be able to understand their strengths and limitations.

Content

- Defining enterprise technologies.
- Network, server and enterprise grade hardware.
- Workstation and server operating systems.
- Data organisation and management systems.
- Web servers, messaging servers and middleware.
- Modelling - UML component and deployment models.
- Business applications and solutions.

Reading Materials

Various contemporary journal articles and publications as appropriate.

HIT1401 Introduction to Business Information Systems

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: Nil • Prerequisites: HIT1025 Introduction to Information Systems or HIT3302 Enterprise Technologies and Architectures • Teaching methods: Lecture (2 hrs per week), Tutorial (1 hr per week) and Laboratory (1 hr per week) • Assessment: Tests; Oral Presentation; Assignments; Final Examination

A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems / Bachelor of Business, Bachelor of Computing, Bachelor of Science (Professional Software Development), Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Information Technology.

Aims & Objectives

Students who complete this unit of study should be able to:

- Identify the role, purpose and contribution of information systems to modern organisations operating in business environments characterised by uncertainty, complexity and turbulence.
- Explain the relationship between people, processes, and information systems, and understand the importance of information and information systems in supporting and enabling core business processes (both intra-and inter-organisational).
- Demonstrate an understanding of the ways in which information systems can contribute to organisational innovation, competitiveness, efficiency and effectiveness.
- Explain how organisations go about acquiring, developing and implementing information systems, and appreciate the major issues involved in successfully accomplishing this.
- Describe and understand the major ethical, legal and security concerns associated with the use and storage of data in modern organisations.
- Demonstrate appropriate communication skills in group work and written and oral presentations.
- Achieve basic competency in using MSExcel and Access for business transactions and processes.

Content

- Information Systems defined.
- Types of Information Systems, their role in an organisation.
- Organisational requirements for information systems.
- IS to enable and support business transactions.
- IS to enable and support business processes.
- IS to support organisational decision making, business intelligence, decision support, and knowledge management.
- Information Systems requirements analysis.
- Information systems acquisition, development, and implementation.
- Databases, and their importance to contemporary business.
- Enterprise systems.
- The nature of IS management.
- Ethical, legal and security issues.

Reading Materials

Current Business Information Systems texts to be advised via Blackboard content management system.

HIT1402 Database Analysis and Design

12.5 Credit Points • 1 Semester • 4 Hours per week • Hawthorn, Sarawak • Prerequisite: Nil • Prerequisites: HIT2016 Database 1 • Teaching methods: Lecture (2 hrs per week), Tutorial (12 hrs) and Laboratory (12 hrs) • Assessment: Assignments, Examination

A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems / Bachelor of Business, Bachelor of Computing, Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering) / Bachelor of Science (Professional Software Development), Bachelor of Computing (Network Design and Security) (1055), Bachelor of Multimedia (Multimedia Software Development) (J060), Bachelor of Science (Computer Science and Software Engineering) (2953Y) and Bachelor of Information Technology.

Aims & Objectives

Students who complete this unit of study should be able to:

- Describe the steps involved in database design and database systems development.
- Explain the fundamentals of the relational data model.
- Write SQL to define, query and manipulate a database.
- Use conceptual data analysis methods to produce and document a logical data model.
- Design and generate a simple inquiry and update system using a range of commercial DBMS tools.

Content

- Information in the organisation.
- DBMS terminology and concepts.
- The relational data model.
• Structured Query Language.
• Functional dependency diagrams.
• Entity relational analysis.
• Normalisation of data.
• Data integrity.

Reading Materials

HIT1403  ICT Environments
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn, Sarawak • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lecture (24 hrs), Laboratory/Tutorial (12 hrs) • Assessment: Assignments (2), Final Examination
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems / Bachelor of Business and Bachelor of Information Technology.

Aims & Objectives
Students who complete this unit of study should be able to:
• Demonstrate skills in the installation, configuration, and operation of the personal computing and basic networking technologies.
• Demonstrate skills in the interaction of information technology hardware and software components.
• Demonstrate the technology of the Internet and World Wide Web.
• Demonstrate programming for the World Wide Web and associated technologies.
• Apply and demonstrate the demands in providing information technologies support to an organisation with a particular focus on the operation of organisation's computer helpdesk.
• Demonstrate skills in liaising with end users, providing customer service.

Content
This course will cover:
• Introduction to Personal Computer Technology.
• Personal Computer hardware basics.
• Selection, installation and upgrading of operating systems and system applications for Personal Computers.
• Usage, installation and implementation of basic computer networks.
• Implementation approaches to database technologies.
• Introduction to basic programming techniques for the Web.
• Introduction to HTML, DHTML and XML.
• Introduction to Web development tools, server side protocols and languages.
• Management of an organisations help desk function.
• Development and operation of the personal computer Standard Operating Environment for an organisation.
• Approaches to Personal Computer rollout within an organisation.
• Customer management and interpersonal skills, task and job management.

Reading Materials

HIT1404  Introduction to Programming in .NET
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Nil. Preclusions: HIT1009/HT1019 Introduction to Programming in VB, HIT2080 Introduction to Programming and HT1301 Algorithmic Problem Solving (students may undertake only one introductory programming unit) • Assessment: Assignments, Tests, Examination
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems / Bachelor of Business and Bachelor of Computing

Aims & Objectives
Students who successfully complete this subject should be able to write programming code that makes use of: structured programming constructs of sequence, selection and repetition; variables, symbolic constants, structures, arrays, simple text files and built-in functions and methods for conversion between various data types; selected built-in string handling functions and methods; simple classes and objects.
• Design and write code that uses principles of modular design with general sub and function procedures.
• Given user requirements, design and implement a well structured and documented object solution to solve simple business problems develop a test plan and create useful test data to test written code.
• Utilise on-line help and debugging tools provided with a selected programming language.
• Use the Visual Studio.NET Integrated Development Environment to build Concurrent and Windows applications, create and maintain Visual Basic.NET objects, make use of Visual Basic.NET debugging tools and on-line help including the Microsoft Developer Network library (MSDN).

Content
• Structured Programming Constructs: Sequence, Condition (simple, two-way, multiple, compound) and Iteration (test at the top, test at the bottom and fixed number loops).
• Data types and conversion functions and methods, variables and variable life time and scope, symbolic constants, Option Specific, Option Strict.
• Arithmetic operations, input data validation with the use of selected standard string handling Visual Basic functions and Visual Basic.NET methods.
• General sub and function procedures with arguments and parameters.
• 1 and 2 dim arrays, 1-dim parallel arrays, Array List collections, structures and arrays of structures.
• Coding standards and documentation.
• Simple classes and objects, text files.
• Problem solving algorithms and structured programming case study.
• Project charts (structure charts), flowcharts.
• The Visual Studio.NET Integrated Development Environment.
• Console and Windows applications including objects, properties and events.
• Testing strategies (developing a test plan and creating suitable test data), debugging techniques, Visual Studio.NET debugging tools, online and MSDN help, and considerations for design of user interface.

Reading Materials

HIT1501  Discovering the Universe
12.5 Credit Points • 1 Semester • 49 Hours • Hawthorn • Prerequisite: Nil. Corequisite: Nil • Teaching methods: Lectures (36 hrs), Laboratory and Tutorial Work (12 hrs) • Assessment: Assignments, Lab Reports, Examination
A unit of study in the Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems).

Aims & Objectives
Students who successfully complete this unit will be able to:
• Develop a familiarity with modern astronomy.
• Develop an introductory level of understanding of our solar neighbourhood, the birth, life and death of stars, the structure of the Milky Way, galaxies & galaxy clustering, theories of dark matter, galactic evolution and introductory cosmology.
• Make use of real astronomical datasets.

The emphasis is on conceptual understanding, not mathematical techniques.

Content
• Observing the night sky: planetary motion, coordinate systems.
• The Solar System: the planets, satellites, planetary rings, asteroids and comets.
• The electromagnetic spectrum and tools of astronomy: telescopes, CCDs, supercomputers.
• The Sun: its structure, nuclear energy, solar dynamo.
• Stellar properties: distances, motions, magnitudes, colours and spectral types.
The stars: binary star systems, variable stars, stellar clusters and stellar populations.

- The life of a solar mass star: star formation, evolution and death; the HR diagram.
- Evolution of high mass stars: supernovae and creation of the elements, white dwarfs, novae, neutron stars, pulsars and black holes.
- The structure of the Milky Way, nebulae, the Galactic centre, the interstellar medium and nebulae, rotation curves & dark matter.
- Normal galaxies: spiral, elliptical & irregular galaxies, Hubble's classification.
- Galaxy clusters: the Local Group, rich & poor clusters, dark matter in clusters, superclusters & voids.
- Interacting galaxies, galactic cannibalism & mergers, starburst galaxies, modelling galactic evolution.
- Active galaxies & AGN: radio galaxies, Seyfert galaxies, a unified AGN model, quasars, supermassive black holes.
- The beginnings of cosmology: estimating galactic distances, redshifts & Hubble's Law, Hubble expansion, the cosmic microwave background.
- The Big Bang, the evolution and fate of Universe.

Life in the Universe, SETI, astrobiology.

Reading Materials

HIT2080 Introduction to Programming
12.5 Credit Points • 1 Semester • 46 Hours • Hawthorn, Sarawak • Prerequisites: HIT1301 Algorithmic Problem Solving and HIT1404 Introduction to Programming in .NET (students may indicate only one introductory programming unit) • Teaching methods: Lecture, Lab (2hrs per week each) • Assessment: Two individual tests, one individual assignment, Final examination

Aims & Objectives
Students who successfully complete this unit of study will be able to:
- Solve engineering problems using the C language.
- Write numerical intensive applications in C.
- Use modular decomposition to reduce the complexity of engineering issues.
- Construct well structured C language programs.
- Understand the issues of the software development life cycle.
- Test and validate their software solutions.

Content
- Introduction to engineering problem solving with C.
- The building blocks of the C programming language.
- Engineering numerical techniques.
- Control structures and file I/O.
- Functions, Arrays, Pointers, Strings, Structs.
- Program Testing and Validation.
- The Software Development of Life Cycle.

Reading Materials

HIT2120 Data Communications and Security
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HIT2302 Object-Oriented Programming or HIT1051 Software Development 1 or HIT2080 Introduction to Programming • Prerequisites: HIT2411 Business Data Communications & Networks or HIT2020 Data Communications • Assessment: Assignments, Examinations

A unit of study in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Multimedia (Multimedia Software Development), Bachelor of Software Engineering, Bachelor of Computing, Bachelor of Science (Professional Software Development) and Bachelor of Computing and Bachelor of Computing (Network Design and Security) (125)
Note: Students will only receive credit for one of HIT2120, HIT2411, HIT2085 and HIT1904.

Aims & Objectives
Students who successfully complete this unit of study will be able to:
- Understand the fundamental concepts and components involved in data communications.
- Understand communication protocols and computer networks.

Content
- Historical evolution of computer communications, standards, codes, reference models.
- Using the 5 internet layer standards describe the role of each layer in data transfer.
- World Wide Web and hypertext transport protocol (HTTP).
- Electronic mail.
- TCP and UDP protocol basics: error control, flow and congestion control, link management.
- Networks: topologies and access methods and routing.
- Overview of multimedia data transfer issues.
- Network security, encryption, firewalls.

Reading Materials

HIT2302 Object-Oriented Programming
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HIT1301 Algorithmic Problem Solving • Prerequisites: HIT1051 Software Development 1 or HIT2427 Object-Oriented Programming in .NET or HIT3087 Programming in Java • Teaching methods: Lectures (24 hrs), Laboratories/Tutorials (24 hrs) • Assessment: Three individual assignments; One group assignment; Examination

A core unit of study in Bachelor of Science (Professional Software Development). An elective unit of study in the Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Technology and Bachelor of Science (Professional Software Development).

Aims & Objectives
Given a problem statement students will be able to produce a software solution using object oriented design principals.
- Students will be able to use advanced programming constructs to solve larger programming problems, including: Encapsulation, Inheritance, Polymorphism, Exceptions.
- Students will be able to convert object oriented designs expressed using diagrams and text into software solutions.
- Students will be able to apply intention and test driven development to create a software solution.
- Given a problem description students will be able to use responsibility driven design to construct an object oriented solution.
- Given a problem description for a single user program, students will be able to: Produce a design to address the problem using appropriate techniques, diagrams, and text. Design, implement, and use unit tests to test the functionality of an implementation. Implement the solution using the subject's programming language.
- Students will be able to use object oriented libraries and frameworks when implementing a solution.
Given the source code of an object oriented program, students will be able to:

- Evaluate its implementation and suggest areas for improvement.
- Develop software using pair programming techniques.
- Use a shared code repository for collaborative development and version management.
- Use a contemporary integrated development environment to build and debug source code.

Content

- Object oriented development and programming: Objects, Classes, Inheritance, Polymorphism.
- Programming language syntax: Creating objects, Classes and Interfaces, Methods.
- Solving problems programmatically: Responsibility driven design, Intention and test driven programming.
- Software development tools: Concurrent versioning system, Integrated Development Environment (Eclipse).

Reading Materials

Troelsen, A Pro 0f 2005 and the .NET. 20 Platform, 3rd edn, APress, 2005

HIT2308 Software Development Practices

12.5 Credit Points • 1 Semester • 35 Hours • Hawthorn, Sarawak • Prerequisite: Two university-level programming units, e.g. HIT2000 Intro to Programming & HIT3181 Technical Software Development or HIT1301 Algorithmic Problem Solving & HIT2302 Object-Oriented Programming • Prerequisites: HIT1301 Introduction to Software Engineering or HIT2405 Requirements Analysis and Modelling • Teaching methods: Lecture (2 hrs per week), Tutorial (2 hrs per week) • Assessment: Assignments and ongoing assessment tasks 100%

A unit of study in the Bachelor of Computing, Bachelor of Computing (Network Design and Security), Bachelor of Science (Computer Science and Software Engineering), Bachelor of Multimedia (Multimedia Software Development), Bachelor of Multimedia (Networks and Computing) and Bachelor of Science (Professional Software Development).

Aims & Objectives

- Given a scenario, students will be able to identify the stakeholders, and their needs.
- By analysing a scenario students will be able to produce a problem statement that identifies the issues that need resolution. Given a scenario and a problem statement students will be able to produce a vision statement and a set of goals for a system that will address the identified problems.
- Given a problem domain students will be able to produce a problem statement.
- Given a scenario, problem statement, and vision statement, students will be able to identify and describe the main reasons why the software is to be developed and produce a conceptual solution which includes paper prototypes, domain models, and user stories.
- Students will be able to describe the attributes and activities involved in contemporary software development process models.
- Students will be able to work collaboratively and describe techniques to facilitate team work for small teams.
- Given a scenario students will be able to select appropriate techniques to facilitate team work for small teams, and justify their selections.
- Students will be able to clearly communicate problems and solutions using contemporary documentation techniques.
- Students will be able to evaluate documents and paper prototypes and suggest areas for improvement and techniques to address these.

Content

- Problems and solutions: Why software is developed. Problem and vision statements. Goals and objectives.
- Stakeholders and goals: Users and usability. Sponsors and functionality.
- Team work: Nature of team work. Team dynamics. Dispute resolution. Tools to enable team work. Tools for communication and collaboration. Tracking and monitoring work in teams.

HIT2313 Computer Systems

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: HIT1312 Computer and Logic Essentials • Prerequisites: HIT1015 Computer Systems • Teaching methods: Lectures, Laboratory • Assessment: Assignments, Examination

A unit of study in the Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Science (Professional Software Development).

Aims & Objectives

- To introduce students to a number of basic fundamental concepts of information technology.
- To develop a basic understanding of the component hardware parts of a computer and the functions they perform.
- To develop a basic understanding of the interactions between these component hardware parts.
- To develop a basic understanding of the reasons for operating systems, compilers and interpreters.
- To develop a basic understanding of the component software parts of a computer operating system and their functions.
- To introduce students to assembly language programming.
- To make students aware of a number of trade offs that inevitably occur in any computer system design.

Reading Materials


HIT2316 Usability

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: Nil • Prerequisites: HIT2024 Introduction to Human-Computer Interaction • Teaching methods: Lecture, Laboratory • Assessment: One group assignment with ongoing assessment. Four online MCQ tests. Examination

A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems / Bachelor of Business, Bachelor of Computing, Bachelor of Science (Computer Sciences and Software Engineering), Bachelor of Information Technology, Bachelor of Science (Professional Software Development) and Bachelor of Computing (Network Design and Security).

Aims & Objectives

By the end of the unit, students will be able to:

- Characterise the basic components of human-computer interaction.
- Demonstrate a knowledge and understanding of a user-centred approach to interface design.
- Select, design and conduct appropriate and ethical evaluation protocols and critically evaluate the results.
- Produce written reports in a standard format and effectively present information in an oral presentation.

Content

- The nature of HCI.
- Models of human behaviour: attention, memory, perception, communication and thinking.
- User-centred principles in the software development process.
- User needs and task analysis techniques.
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems / Bachelor of Business, Bachelor of Computing and Bachelor of Information Technology.

**Aims & Objectives**

Students who successfully complete this unit of study will be able to:

- Demonstrate initiative in investigating a problem.
- Establish the requirements for a system, Analyse and model the requirements and develop practical design solutions.
- Apply analysis, modelling and design techniques in the context of practical problems. Discuss alternative models and solutions. Argue effectively why some models or solutions are better than others given different evaluation criteria.
- Describe the purpose of system development as a solution to a business problem.
- Describe the phases of a system development project.
- Demonstrate an understanding of the Structured and Object-Oriented approaches to systems analysis.
- Differentiate between the Structured and Object-Oriented approaches to systems analysis.
- The context of these objectives is the development of a computerised information system for a real or imaginary business where currently no computerised system exists. The particular modelling techniques relate to Structured and Object-Oriented systems development paradigms.

**Content**

- The role of the analyst and the SDLC.
- Investigating system requirements.
- Modelling system requirements: traditional approach - especially DFDs, OO approach - especially use cases, activity diagrams, class diagrams.
- Evaluation of alternatives for requirements, environments and implementation.
- Packaged software and ERP.
- Exploration of different design options.
- Workflow models.

**Reading Materials**


**HIT2420 Database Management Systems**

12.5 Credit Points • 1 Semester • 36 Hours per Week • Hawthorn, Sarawak • Prerequisite: HIT1402 Database Analysis and Design or HIT2016 Database 1 and introductory programming eg HIT1051 Software Development 1, HIT1109 Introduction to Programming in VB, HIT1301 Algorithmic Problem Solving or HIT1404 Introduction to Programming in .NET or HIT2080 Introduction to Programming • Prerequisites: HIT3017 Database 2 • Teaching methods: Lectures (24 hrs), Tutorial/Laboratory (12 hrs) • Assessment: Assignments 30%, Examination 70%.

A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems / Bachelor of Business, Bachelor of Computing, Bachelor of Science (Professional Software Development), Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Technology.

**Aims & Objectives**

Students who complete this unit of study should be able to:

- Describe the architecture and capabilities of a modern Relational Database Management System (DBMS) and compare and contrast with other database models.
- Evaluate the effects of data restructuring and take action to maintain data independence.
- Explain and describe how a DBMS facilitates transaction management, concurrency and recovery.
- Implement a concurrent, multi-user business application using form based software.
- Build a simple distributed database system applying appropriate design principles.
• Using the concepts underlying data warehouse, data mining and OLAP systems build a simple data warehouse system applying appropriate design principles.
• Describe the principles involved in ensuring data security and privacy in a database system.

Content
• Database Objects and the Data Dictionary.
• Data Independence through Views.
• Transactions and Concurrency.
• Database Recovery Control.
• Client server systems.
• Forms based applications.
• Distributed database systems.
• Database models.
• Data Warehousing, Data Mining.
• Data security and privacy.

Reading Materials
Hoffer, JA, Watson, RT, Reading Materials, Rob, Kroenke, DM, A unit of study in the Bachelor of Business Bachelor of Technology

HIT2425 Business Systems Programming in .NET
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1404 Introduction to Programming In .NET or HIT1005 Introduction to Programming In VB or HIT1301 Algorithmic Problem Solving or HIT1051 Software Development 1 • Precalculations: HT3013 Programming Business Systems, HT2100 Business Programming 2, HT2110 Programming in VB, HIT2102 Software Development 2 or HIT2002 Object-Oriented Programming • Teaching methods: Lecture (24 hrs), Tutorial/Laboratory (12 hrs) • Assessment: 2 x Individual Assignments, Individual Test, Final Examination.
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems / Bachelor of Business, Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Technology and Bachelor of Science (Professional Software Development).

Aims & Objectives
Students who complete this unit of study should be able to:
• Develop applications within the .NET framework involving technologies such as VB.NET, CA, ADO.NET, XML, ASP.NET, Report Generators, VBA.
• Build applications using a multi layered design approach.
• Identify human-computer interaction concepts and apply them when designing and building software application.
• Develop, debug, test and document software to a high standard.

Content
• Console, Windows Forms and Web Form application development
• Data Base interfaces
• Debugging techniques
• Test plans and techniques
• File Processing
• Report Generators
• Visual Basic for Applications
• Human Computer Interface and Usability
• Help Files and documentation

Reading Materials

HIT2502 From Stars To Black Holes
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1501 Discovering the Universe, HMS111 Engineering Mathematics 1, HMS112 Engineering Mathematics 2, NET124 Energy & Motion • Teaching methods: Lectures (2 hours per week), Tutorials (1 hour per week) • Assessment: Examinations (50%), Tutorials (5%), Assignments (20%), Research Report (25%)

Aims & Objectives
To introduce students to the mathematical and physical basis of modern stellar astrophysics. Students will build on their foundation of conceptual astronomy to gain a deeper understanding of key areas in stellar astrophysics. In particular the student will be introduced to the study of the physical basis underlying stars including stellar structure, radiation processes, star formation and evolution models, stellar evolutionary end points (ie. neutron stars and pulsars) and the physics of black holes.

Content
• Star formation – interstellar medium, protostars, pre-main-sequence evolution
• Stellar atmospheres, stellar opacity, radiative transfer
• Stellar interiors, hydrostatic equilibrium, energy transport
• Physics of spectroscopy - absorption and emission lines
• Stellar evolution – low and high mass evolution
• Variability – pulsation, hertzsprung-rosset
• Stellar remnants - white dwarfs, degenerate matter, neutron stars, pulsars
• Black holes, introduction to general theory of relativity
• Spacetime, geodesics, metrics, event horizon, Hawking radiation

Reading Materials

HIT2503 Galaxies and Cosmology
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1501 Discovering the Universe, HMS111 Engineering Mathematics 1, HMS112 Engineering Mathematics 2, NET124 Energy & Motion • Teaching methods: Lectures (2 Hours per Week), Tutorials (1 Hour per Week) • Assessment: Examinations, Tutorials

Aims & Objectives
To introduce students to the mathematical and physical basis of modern astrophysics. Students will build on their foundation of conceptual astronomy to gain a deeper understanding of key areas in astrophysics of galaxies and cosmology. In particular the student will be introduced to the study of galactic structure and dynamics, the evolution of large scale structure and the formation of structure in the early universe.

Content
• Overview of galaxies
• Milky Way - structure, stellar content, dynamics
• Galactic dynamics - potentials, stellar orbits, vernal equation, density waves
• Galaxy interactions and mergers, dynamical friction
• Evolution of galaxies - Hubble/Chandra Deep Fields
• Dark Matter in galaxies - MACHOs, HI in spirals, dark matter in dwarf galaxies
• AGN, quasars, radio galaxies, supermassive blackholes
• Epoch of galaxy formation - hierarchical clustering, biased galaxy formation
• Classical cosmology, Hot Big Bang, recombination, CMB, primordial nucleosynthesis
• Inflationary cosmology, arguments for, predictions of, CMB structure
• "Concordance" LambdaCDM model, dark matter, dark energy, problems with LambdaCDM
• Large scale structure formation and evolution, Jeans length, power spectrum, N-body models
• Observational cosmology: 2dFGRS, Sloan Digital Sky Survey, 6dFGS
• Fate of the Universe, implications of inflation, dimensions, a Universe of universes?

Reading Materials
HIT3002  Introduction to Artificial Intelligence
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn, Sarawak • Prerequisite: HIT3172 Object-Oriented Programming in C++ or HIT1052 Software Development 2 or HIT3037 Programming in Java or HIT2302 Object-Oriented Programming or equivalent • Assessment: Assignments, Examination
A core unit of study in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Telecommunication and Internet Technology) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Software Engineering. Available as an elective unit of study in the Bachelor of Information Systems, Bachelor of Information Technology, Bachelor of Science (Computing), Bachelor of Science (Information Technology), Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Science (Professional Software Development) and Bachelor of Business.
Note: students should only receive credit for one of HIT3002 and HIT3102.

Aims & Objectives
By the end of the unit of study students should be able to:
• Demonstrate understanding of computational models of mental faculties.
• Design simple intelligent software.

Content
• Introduction
• Intelligent Agents
• Reasoning
• The predicate calculus
• Induction
• Fuzzy logic
• Uniformed and informed research
• Knowledge presentation
• Expert systems
• Evolutionary computing
• Artificial Neural Networks
• Learning
• Machine vision
• Natural languages processing
• Philosophical problem of Artificial Intelligence

Reading Materials

HIT3037  Programming in Java
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HIT3172 Object-Oriented Programming in C++ or 75% in HIT2427 Object-Oriented Programming in .NET. Prerequisite: HIT1052 Software Development 2 • Corequisite: Nil • Teaching methods: Lectures (2 hrs per week), Laboratories (2 hrs per week) • Assessment: Assignments, Examinations
A unit of study in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering/Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Computer Science (Computer Science and Software Engineering), Bachelor of Business Information Systems, and Bachelor of Business Information Systems / Bachelor of Business.

Aims & Objectives
To master the fundamentals of Java.

Content
• Introduction and comparison to C/C++.
• Java language.
• Exceptions, streams and IO.
• Applets and applications.
• Events, event handling and AWT/Swing.
• Graphics, and images/animation/multimedia.

Reading Materials

HIT3044  Professional Issues in Information Technology
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn, Sarawak • Prerequisite: Available to final year students only • Teaching methods: Lecture/Workshop (2 hrs per week), Tutorial (1 hr per week) • Assessment: Debate 10%, Assignment 20%, Test 25%, Examinations 45%
A unit of study in the Bachelor of Science (Computer Science & Software Engineering); Bachelor of Science (Computing), Bachelor of Engineering (Robotics & Mechatronics) / Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Information Systems, Bachelor of Information Systems / Bachelor of Business, Bachelor of Multimedia (Multimedia Software Development), Bachelor of Business Information Systems, Bachelor of Business Information Systems / Bachelor of Business, Bachelor of Software Engineering, Bachelor of Computing, Bachelor of Information Technology, Bachelor of Science (Professional Software Development) and Bachelor of Computing (Network Design and Security)

Aims & Objectives
• To introduce and review codes of ethics and codes of conduct governing the behaviour of software engineering professionals.
• To provide a broad understanding of the impact of information technology on humanity and the environment.
• To explore the importance of knowing one's belief system and values when confronting issues at the workplace and what it means to take social responsibility.
• To monitor one's own personal development.

Content
A variety of topics are included that involve social, legal and ethical aspects of computing in the human context.
• Ethical issues in the workplace, in work-teams and with clients.
• Moral values in the light of generation, culture, heritage and technology.
• Implications of technology, globally and in the Australian context.
• Implications of specialist areas such as artificial intelligence.
• Computer abuse, crime detection.
• Legal issues in the IT profession.
• Community, global and environmental responsibility.
• Professional ethical codes and personal responsibility.

Textbooks

HIT3046  Artificial Intelligence for Games
12.5 Credit Points • 1 Semester • 36 Hours per week • Hawthorn • Prerequisite: HIT1052 Software Development 2 or HIT2302 Object-Oriented Programming or HIT3161 Technical Software Development • Corequisite: Nil • Teaching methods: Lectures (2 hrs per week), Laboratories (1 hr per week) • Assessment: Assignments, Examination
A unit of study in the Bachelor of Computing, Bachelor of Business Information Systems / Bachelor of Business/Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Science (Professional Software Development)

Aims & Objectives
• To introduce important concepts in artificial intelligence including symbol and non-symbol based techniques, expert systems, artificial evolution, neural networks, agent systems, collective intelligence and emergent systems.
• To investigate the concepts of game design and the opportunities for artificial intelligence to be applied to games environments and development.
• Utilise scripting to implement artificial intelligence techniques in game environments.

Content
• Search and optimisation.
• Knowledge representation, reasoning systems, machine learning.
• Evolutionary systems, artificial neural networks, collective systems.
• Game design and development, rule design, game balancing.
• Scripting methods.
• AI evaluation.
Reading Materials

HIT3047 Real-Time Programming
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT2313 Computer Systems or HIT2114 Operating Systems (Linux) or HIT2322 Embedded Microcontrollers, and HIT3303 Data Structures and Patterns or HIT2253 Data Structures and Algorithms or HIT3172 Object-Oriented Programming in C++ • Corequisite: Nil • Teaching methods: Lecture (2 hrs per week), Laboratory (1 hr per week) • Assessment: Assignments, Examinations
A core unit of study in Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Software Engineering. An elective unit of study in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Computing), Bachelor of Engineering (Telecommunication and Network Engineering) / Bachelor of Sciences (Computer Science and Software Engineering), Bachelor of Computing, and Bachelor of Science (Professional Software Development)

Aims & Objectives
Students who successfully complete this unit of study will be able to:
• Design and implement real-time software systems using a high-level language.
• Develop control software for a hardware system with hard deadlines.

Content
• Real-time programming.
• Characteristics of real-time systems.
• Clocks and deadlines.
• Process interaction mechanisms: queues, semaphores, rendezvous.
• Protected objects and buffers.
• Low-level programming, interrupt handling.
• Priority and pre-emptive scheduling.
• Introduction to a real-time design methodology.
• Comparison of languages and operating system support for real-time programming.

Reading Materials

HIT3057 Software Testing and Reliability
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT2056 Software Project Management or HIT3309 Software Project Practices and Management • Corequisite: Nil • Teaching methods: Tutorial/Workshop (1 hr per week) • Assessment: Assignments, Examinations
A unit of study in the Bachelor of Software Engineering, Bachelor of Business Information Systems / Bachelor of BusinessBachelor of Computing, Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Science (Professional Software Development).

Aims & Objectives
To provide students with the concepts and methodologies of software testing and reliability.

Content
• Selection of test cases.
• Program instrumentation.
• Data flow analysis.
• Domain testing strategy.
• Mutation analysis.
• Basics of reliability theory.
• Reliability modelling.

Reading Materials

HIT3061 Software Team Project
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn, Sarawak • Prerequisite: HIT1052 Software Development 2 or HIT3202 Object-Oriented Programming or HIT3181 Technical Software Development or HIT2427 Object-Oriented Programming in .NET or HIT2425 Business Systems Programming in .NET, and HIT2016 Database 1 or HIT1402 Database Analysis and Design • Corequisite: Nil • Teaching methods: Lectures, Group Meetings and Consultation with Project Supervisor • Assessment: Group project plan, Group software project, Individual presentations, Individual log book entries, Individual peer reviews
A unit of study in the Bachelor of Computing and Bachelor of Computing (Network Design and Security)

Aims & Objectives
Students who successfully complete this unit of study will be able to:
• Apply software engineering principles for the development and successful implementation of a software product
• Use the principles of user-centred design to develop software that satisfies a client’s needs
• Demonstrate an ability to work effectively and efficiently in a software development team

Content
Students work as a team (typically 4 - 6 individuals) to develop a software product for a nominated client. Where possible, clients are external to the university. Each group is supervised closely by a member of staff who acts as a project manager. Three milestones must be satisfied. Teams are required to produce a final management plan and software requirements document that are in accordance with currently accepted software engineering principles and practice. These requirements involve analysis of project requirements, project design and development. The final milestone involves a formal oral presentation of the completed software at which the user is present.
Students will develop skills in:
• Team dynamics.
• Project planning and management.
• Presentation and communication.
• Requirement elicitation, task allocation, meeting process documentation and existing content blur.

HIT3066 Software Tools
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: A university level software engineering unit • Corequisite: Nil • Teaching methods: Classes • Assessment: Assignments, Examination
A unit of study in the Bachelor of Science (Professional Software Development) and Bachelor of Computing.

Aims & Objectives
One way of improving software productivity and quality is by using software tools. Unfortunately studies have shown that in most cases the acquired software tools are either not used or only partly used. Therefore in this course we shall examine a mix of fundamental’s (software engineering activities and tools) and practical hands-on knowledge on software tools. A combination of tools breadth and depth approach will be used covering in depth most important tools for testing and software configuration management, and a breadth of various tools.

Content
• Software Tools.
• Software Configuration Management and Testing Tools.
• Client-Server & Web, Software Engineering and Tools.
• Software Process Models and Software Cycles & Tools.

Reading Materials

HIT3078 Knowledge Management
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: Students must be in the final year of their degree • Teaching methods: Lectures and tutorials involving exercises in personal and group knowledge management and review of selected case studies • Assessment: Assignments, Examinations
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business, Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering), Bachelor of
Aims & Objectives
By the end of the unit of study, students should be able to:

- Describe the nature of knowledge and the way in which it is created.
- Describe a set of knowledge management (KM) processes.
- Identify and describe the nature and scope of KM.
- Describe some recent examples of the application of KM principles and the degree to which successful outcomes were achieved.
- Describe ways in which computer-based information systems (CBIs) may facilitate KM practice and the critical importance of this contribution.
- Apply principles learnt to personal and group knowledge management.

Content
The following issues are explored:

- The nature of knowledge, knowledge creation and KM processes.
- Kinds of knowledge and their interaction.
- The organizational context of KM.
- Guidelines for undertaking personal, group and corporate knowledge management.
- The contribution of IT to KM practice.
- The social technical and business oriented views of KM.
- The establishment of change programmes to introduce corporate KM.
- The role of KM is corporate strategic management and achieving competitive advantage.
- Review of some published case studies.

Reading Materials
A number of relevant journals are available in electronic form via the Swinburne library home page. These include:
- Communications of the ACM
- Decision Sciences
- Harvard Business Review
- IBM Systems Journal (particularly vol. 40, iss. 4)
- Information Strategy: the Executive's Journal
- Information Systems Management
- KM review
- Organizational Dynamics
- Sloan Management Review

Textbooks

References

HIT3083  Digital Graphics
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT3172 Object-Oriented Programming in C++ or HIT3054 C++ for Java Programmers • Corequisite: N • Teaching methods: Lectures (2 hrs per week), Laboratories (1 hr per week) • Assessment: Assignments, Examinations

A core unit of study in the Bachelor of Multimedia (Games and Interactivity), Bachelor of Science (Computer Science and Software Engineering). An elective unit of study in the Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Technology and Bachelor of Science (Professional Software Development).

Aims & Objectives
This unit of study introduces students to the theory, implementation and application of modern computer graphics techniques.

Content
- Basic transformations.
- Curve and surface representation.
- Illumination and shading, and modelling techniques.
- 2D and 3D graphics algorithms.
- Application areas of computer graphics.

Reading Materials

HIT3087  Advanced Java
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT3303 Data Structures and Patterns or HIT2253 Data Structures and Algorithms or 75% in HIT3037 Programming in Java • Teaching methods: Lectures (2 hrs per week), Laboratory (1 hr per week) • Assessment: Assignments, Examinations

An elective unit of study in the Bachelor of Multimedia (Multimedia Software Development), Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Computing), Bachelor of Science (Information Technology), Bachelor of Software Engineering, Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering), and Bachelor of Science (Professional Software Development).

Aims & Objectives
Students who successfully complete this unit of study will be able to:

- Competently use Swing to program the user interface of Java applications.
- Explain the architectural and performance issues of programming in Java.
- Use threads, collections, graphics 2D and J2ME APIs.

Content
- The Swing API.
- Specialised dialogs: JColor Chooser, J File Chooser, J Option Pane, etc.
- Model-based components: JTree, JTable, etc.
- Image display.
- Threads.
- Serialization.
- Graphics 2D.
- An introduction to J2ME Programming.

Reading Materials

HIT3098  Agile Development Project
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT3090 Business Analysis Application: A university unit of study in software engineering and object-oriented programming • Precursors: HIT3300 Enterprise .NET • Teaching methods: Lectures (12 hrs), Laboratory (24 hrs) • Assessment: Project

A unit of study in the Bachelor of Software Engineering, Bachelor of Computing, Bachelor of Science (Professional Software Development) and Bachelor of Computing (Network Design and Security) (I55)

Aims & Objectives
Students who successfully complete this unit of study will be able to:

- Understand the core concepts involved in an agile methodology.
- Participate in a project that uses the common agile practices.
- Critically evaluate and select a set of core practices for a given project.
- Work in a project that follows an agile methodology.

Content
- The Agile manifesto.
- Overview of agile development methods.
- Core practices and techniques.
- Test-driven development.
- Design patterns, Metaphor driven architectures, Refactoring.

Reading Materials
Fowler, M, Refactoring: Improving the Design of Existing Code, Addison-Wesley, 1999

HIT3099 Enterprise.NET
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1402 Database Analysis and Design or HIT2016 Database 1; and HIT3197 Advanced .NET Programming or 75% or greater in either HIT2427 Object-Oriented Programming in .NET or HIT2110 Programming in VB.NET • teaching methods: Lectures, Laboratories • Assessment: Assignments, Examinations
A unit of study in the Bachelor of Science (Information Technology), Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Science (Professional Software Development).

Aims & Objectives
On completion of this unit of study, students will be able to:
  • Use ADO.NET to interact with databases.
  • Create class libraries using .NET.
  • Provide access to business processing via XML Web Services.
  • Create interactive interfaces using ASP.NET.
  • Create simple windows applications.
  • Develop N-Tier applications.
  • Use .NET Enterprise Servers such as BizTalk, and SQL Server 2000.

Reading Materials
There is no prescribed text. Students will be directed to online resources.

HIT3105 Software Development Project A
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT3309 Software Project Practices and Management, HIT3303 Data Structures and Patterns, HIT3304 Database Programming. Students must enrol in HIT3205 Software Development Project B in the same calendar year • Corequisite: HIT3310 Software Architectures and Design. Prerequisites: HIT3099 Enterprise .NET • Teaching methods: Seminars (1 hr per week), Project work (7-15 hrs per week) • Assessment: Peer and self assessment, Performance reviews
A unit of study in the Bachelor of Science (Professional Software Development) and Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
  • Given a work objective students will apply knowledge, tools, and methodologies learnt in previous subjects to satisfactorily complete the tasks required.
  • Students will be able to clearly document their contribution to a team project in such a way that others will understand work completed, assumptions made, and alternatives considered.
  • Students will gain experience in developing a software system in a project team under the direction of a project manager, and will be able to apply techniques and methodologies as directed.
  • Students will experience all phases of the lifecycle of a software project, and be able to document their thoughts and progress on a regular basis.
  • Students will participate in regular meetings and be able to document meeting outcomes.
  • Students will lead small teams under the guidance of the project manager, and be able to critically evaluate their performance as a leader, and the performance of each team member.
  • Students will be able to write and review technical documents.
  • Students will be able to plan and deliver technical presentations.
  • Students will be able to recall techniques for the following and be able to apply these to the work they undertake on the project: Time management, Conflict management, Team leadership, Technical presentations.

Content
  • Teamwork: Leadership, Contribution.
  • Project and process: Project and methodology outline.
  • Documentation: Writing documentation, Evaluating documentation.
  • Presentations.

Reading Materials

HIT3119 Enterprise Java
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: 75% in HIT3037 Programming in Java or HIT1652 Software Development 2 or HIT2302 Object-Oriented Programming, and HIT2016 Database 1 or HIT1402 Database Analysis and Design • Corequisite: N/A • Teaching methods: Lectures, Laboratories • Assessment: Assignments, Examinations
A unit of study in the Bachelor of Science (Information Technology), Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Science (Professional Software Development).

Aims & Objectives
To understand and develop database and network software, using Java to examine Web-based database.

Textbooks

HIT3138 Intelligent Systems
12.5 Credit Points • 1 Semester • 46 Hours • Hawthorn, Sarawak • Prerequisite: N/A • Corequisite: N/A • Teaching methods: Lectures, Laboratory Work • Assessment: Assignments, Examinations
A unit of study in the Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Electronics and Computer Systems), and an elective unit of study in the Bachelor of Engineering (Robotics and Mechatronics), Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Science (Professional Software Development).

Aims & Objectives
  • To introduce students to artificial neural networks and their application to a range of problems. The range of networks includes back propagation, specialist classification networks, self-organising networks, together with a range of more advanced networks involving more biologically plausible networks. Sample applications are drawn from medicine, science and engineering.
  • To introduce students to techniques involving the application of the principles of Darwinian evolution to design and optimisation problems.
  • To introduce students to collective intelligence algorithms and their applications.

Content
  • Neural networks; artificial neural networks and the brain.
  • Artificial neurons.
  • Learning rates.
Aims & Objectives

- The importance of non-linear output transformations.
- Three basic node types.
- The back propagation learning algorithm and practical implementation considerations.
- Enhancements to back prop: cumulative update and momentum, and applications.
- Using fuzzy inputs and outputs to a neural net.
- Classification networks: PNN, Counterprop, LVQ, cluster networks and applications.
- Divide and conquer networks: cascade networks, ensembles of networks and applications.
- Data compression networks and applications.
- Self organising maps and applications.
- More biologically plausible neurons.
- Evolutionary systems.
- An introduction to Darwinian evolution.
- The basic evolutionary algorithm: example.
- Crossover rates and type mutation types.
- Population control strategies.
- Examples in scheduling function optimisation look-up table generation.
- Robot algorithm development.
- The problem of premature convergence.
- Evolutionary systems and neural nets: developing net structure, auto designing.
- Fuzzy membership functions using nets inside an evolutionary system.
- Specifying evolutionary algorithms: parallelising, population seeding, the importance of a local heuristic.
- Optimum partitioning of problems: hierarchical evolutionary algorithms.
- Information dense chromosomes and their advantages and disadvantages and examples.
- Evolution of neural network revisited.
- Simultaneous evolutionary and algorithmic development of solutions.
- Collective intelligence: the role of synergery.
- The Art Colony Optimisation and Particle Swarm Algorithms.

**HIT3149 Analysis, Modelling and Design**

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1031 Introduction to Software Engineering or HIT2306 Software Development Practices and HIT2016 Database 1 or HIT1402 Database Analysis and Design • Corequisite: NIL. Precension: HIT3049 • Teaching methods: Lectures, Tutorials & Assessment: Assignments, Examinations

A unit of study in the Bachelor of Information Systems, Bachelor of Information Systems/Bachelor of Business, Bachelor of Software Engineering, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Computing) and Bachelor of Information Technology, Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Computing and Bachelor of Science (Computer Science and Software Engineering).

**Aims & Objectives**

By the end of this unit of study, the student should be able to:

- Describe the nature of analysis and of design and explain the role of modelling in each in the context of the Unified Process.
- Demonstrate proficiency in analysis and design by appropriate use of UML notations.
- Describe and apply some CO approaches to design such as Responsibility Driven Design and Design by Contract.
- Describe and apply some design patterns.
- Describe ways of evaluating designs and evaluate a design against a set of criteria.
- Discuss the importance of modularisation and high level design for large systems.

**Content**

- Intro to UP
- Analysis and design in UP
- Modelling
- Design approaches
- Patterns
- Case studies
- Evaluation of designs
- High level design

**Reading Materials**


**HIT3156 Software Process Improvement**

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT2056 Software Project Management or similar university-level software engineering unit. • Teaching methods: Lectures/Guest Lectures by Industry Professionals/Workshops • Assessment: Assignments, Case Studies, Research Paper

A unit of study in the Bachelor of Software Engineering, Bachelor of Computing and Bachelor of Science (Professional Software Development).

**Aims & Objectives**

This unit of study aims to engage students in thinking through some of the major issues associated with the efficient and effective development of software-based systems. It addresses the following questions:

- What do we mean by a 'software development process'?
- How might we define the 'quality' of such a process?
- Can we relate the quality of a software development process clearly to the 'quality' of the system that is developed?
- How can we assess the quality of a software development process?
- How can we determine a framework for improving the quality of a software development process?
- How can such frameworks be implemented in practice, in organisations of varying sizes?

**Content**

- Various frameworks for software quality management and software process improvement will be studied, in particular ISO 9001, CMMI, ISO 15504 and CMMI.
- Approaches to software process improvement suitable for larger organisations, and for SME's, will be explored.
- Most software development organisations do not engage in SPI. The reasons for this will be examined.
- The literature on the economic benefits of SPI will be examined critically.
- The contrasts between the philosophy of quality management approaches to SPI and recent trends in software development exemplified by the new 'agile development methods' will be examined critically.

**Reading Materials**


**HIT3157 Large Scale System Design**

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT2056 Software Project Management • Corequisite: NIL • Teaching methods: Lectures (2 hrs per week), Tutorials (1 hr per week) • Assessment: Examination, Assignments, Weekly Question Submission

A unit of study in the Bachelor of Software Engineering, Bachelor of Computing, Bachelor of Science (Professional Software Development) and Bachelor of Science (Computer Science and Software Engineering).

**Aims & Objectives**

To facilitate an in-depth study by students of current approaches and techniques for large-scale system design, with a special focus on requirements and software architecture.

**Content**

- Requirements specifications.
- Validation of requirements.
- Requirements management.
- History and significance of architectures.
- Architectural styles and patterns.
- Architectures and frameworks.
- Architectural design.
Reading Materials
Laursen, S., Software Requirements: Styles and Techniques, Addison-Wesley, 2002

HIT3158 Software Engineering Project A
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HIT2253 Data Structures and Algorithms or HIT3303 Data Structures and Patterns or HIT3172 Object-Oriented Programming in C++, and HIT2056 Software Project Management or HIT3309 Software Project Practices and Management. Must be followed immediately by HIT3256 Software Engineering Project B or HIT553 Software Engineering and Robotics Project. • Corequisite: Nil • Teaching methods: Lectures (24 hrs), Regular Contact with Supervisor and Project Team Sessions (24 hrs). • Assessment: Project Report, Pass/Fail only
A unit of study in the Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
• To develop a software system in a medium-size team (about 6 members).
• To apply the range of knowledge and skills gained throughout the course, especially in software engineering, programming, data communications, database and multi-user/multi-platform technologies.

Content
• Initiation, specification, design, implementation, testing and deployment of a large software system development, requiring students to function as members of a sizable team (where possible, these projects will be for industry clients).
• Theoretical material will encompass the tools that will be required for the software development.

Reading Materials

HIT3164 Internet Networking Infrastructure
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn, Sarawak • Prerequisite: HIT2120 Data Communications and Security or HIT2411 Business Data Communications & Networks (or HIT2020 HIT3165) and HIT3037 Programming in Java or HIT1052 Software Development 2 • Corequisite: Nil • Teaching methods: Lecture (2 hrs per week), Laboratory (2 hrs per week) • Assessment: Assignments, Examinations
A unit of study in the Bachelor of Science (Information Technology).

Aims & Objectives
This unit of study is based on the study of MANs/WANs and the associated infrastructure technologies to enable Internet networking. Along with the technologies, the associated protocols that are implemented with Internet networking are studied in detail. New developments such as IP over ATM and next-generation Internet are also reviewed.

Content
• Technologies include: DDQ6, FDDI, SDM/SONET
• Emphasis is placed on protocols: TCP/IP protocol suite, Routing in the Internet, RIP and OSPF, Internet multicasting, DNS, Firewall design. Internet security in today’s environment

Reading Materials
To be advised.

HIT3166 Software Testing Processes and Automation
12.5 Credit Points • 1 Semester • 26 Hours • Hawthorn, Sarawak • Prerequisite: Programming and HIT2308 Software Development Practice, or HIT1031 Introduction to Software Engineering. Requires approval of Program Coordinator. • Corequisite: Nil • Teaching methods: Lecture, Tutorials, Labs • Assessment: Assignments, Labs, Examinations
An elective unit of study in Bachelor of Computing and Bachelor of Science (Professional Software Development).

Aims & Objectives
Students who successfully complete this unit of study will be able to:
• Understand and apply a broad testing knowledge.
• Understand and apply testing tools.
• Understand testing performance and apply performance testing tools.

Content
• Testing basic concepts.
• Test levels.
• Test techniques.
• Test related measures.
• Managing the test process.
• Automated testing and automated testing life-cycle.
• Automated test development.
• Automated defect tracking and reporting.
• Automated performance testing.

Reading Materials
Kit, E., Software testing in the real world: improving the process, 1996.
Selected sections of Mercury and Rational manuals (these manuals are available in electronic forms in the laboratories and the required sections can be printed or viewed online):

HIT3172 Object-Oriented Programming in C++
12.5 Credit Points • and 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HIT3181 Technical Software Development or HIT3081 or HIT3202 Object-Oriented Programming or HIT1052 Software Development 2 • Corequisite: Nil • Teaching methods: Lecture (2 hrs per session), Laboratory (2 hrs per session) • Assessment: Examination 60%, continuous assessment 40%.
A unit of study in the Bachelor of Computing, Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Professional Software Development), Bachelor of Engineering (Telecommunication and Network Engineering) / Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Computing (Network Design and Security).

Aims & Objectives
Students who successfully complete this unit of study will be able to:
• correctly use the features offered by C++ for Object-Oriented Programming,
• design and implement solid and maintainable object-oriented applications composed of many classes in C++.

Content
Correct use of C++ features for solid applications:
• Exceptions
• C++ strings vs. char *
• Containers, iterators and standard algorithms
• Defensive memory management.
• Essential C++ idioms.
Correct use of object-oriented features for maintainable applications:
• Class design, encapsulation, responsibilities, class relationships.
• Inheritance, polymorphism, abstract classes, delegation, inheritance vs. containment.
• Coding to an interface.

Reading Materials
HIT3181  Technical Software Development
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn, Sarawak • Prerequisite: HIT2080 Introduction to Programming or HES1300 Robotics and Mechatronics
Project 1 (or completion of a second level programming subject) • Corequisite: Nil • Teaching methods: Lecture (2 hrs per week), Laboratory (2 hrs per week) • Assessment: Assignments, Examination
A unit of study in the Bachelor of Computing, Bachelor of Computing (Network Design and Security) (1305) and Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
• To team to develop engineering software in a disciplined way.
• To participate as a successful member of a project team in software development.
• To improve skills in C programming.
• To obtain knowledge of C++ programming essentials.

Content
• Software specification.
• Software modularisation.
• Team software development.
• Advanced data structures (linked list, tree).
• Introduction to C++ (class and object, Stream I/O, basic inheritance).

Reading Materials

HIT3197  Advanced .NET Programming
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: 65% or greater in HIT3303 Data Structures and Patterns or HIT2253 Data Structures and Algorithms or 75% in either HIT2447 Object-Oriented Programming in .NET or HIT3377 Programming in Java. • Teaching methods: Lectures (24 hrs), Laboratory (12 hrs) • Assessment: Four Assignments, Examination.
A unit of study in the Bachelor of Science (Information Technology), Bachelor of Computing, Bachelor of Science (Professional Software Development) and Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
On completion of this unit of study the student will be able to:
• Design and develop complex concurrent programs using the .NET framework.
• Describe, identify and debug issues related to the development of concurrent programs.
• Create custom controls with the .NET framework. This includes custom drawn controls and design time support.
• Using the .NET framework in relation to advanced areas of interest covered. This includes cryptography, regular expressions, multi-language development, memory management and interoperability with the Windows API.

Content
• Overview of Visual Basic, .NET, C# and the .NET framework.
• Overview of programming fundamentals and good practice.
• .NET Delegates and Events.
• Developing concurrent programs.
• Issues with concurrent programs and their solutions.
• Debugging and debugging concurrent programs.
• Drawing with GDI+.
• Custom controls and Design time support.
• Cryptography.
• Calling the Windows API.
• Regular Expressions.
• Memory Management.
• Assemblies and the Global Assembly Cache.

Reading Materials

HIT3205  Software Development Project B
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT3105 Software Development Project A passed in the same calendar year. • Corequisite: HIT3311 Software Deployment and Evolution • Teaching methods: Seminars: 1 hour per week, Project work: 7 - 13 hours per week • Assessment: Peer and self assessment, Performance reviews
A unit of study in the Bachelor of Science (Professional Software Development) and Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
• Given a work objective students will apply knowledge, tools, and methodologies learnt in previous subjects to satisfactorily complete the tasks required.
• Students will be able to clearly document their contribution to a team project in such a way that others will understand the work completed, assumptions made, and alternatives considered.
• Students will gain experience in developing a software system in a project team under the direction of a project manager, and will be able to apply techniques and methodologies as directed.
• Students will experience all phases of the lifecycle of a software project, and be able to document their thoughts and progress on a regular basis.
• Students will participate in regular meetings and be able to document meeting outcomes.
• Students will lead small teams under the guidance of the project manager, and be able to critically evaluate their performance as a leader, and the performance of each team member.
• Students will be able to critically evaluate their performance as a team member and the performance of their team leader.
• Students will be able to write and review technical documents.
• Students will be able to plan and deliver technical presentations.
• Students will be able to recall techniques for the following and be able to apply these to the work they undertake on the project: Time management, Conflict management, Team leadership, Technical presentations.

Content
• Teamwork: Leadership, Contribution.
• Project and process: Project and methodology outline.
• Documentation: Writing documentation, Evaluating documentation.
• Presentations.

Reading Materials

HIT3243  Games Programming
12.5 Credit Points • 1 Semester • 36 Hours per Week • Hawthorn, Sarawak • Prerequisite: HIT3054 C++ or HIT3072 C++ for Programmers or HIT3172 Object-Oriented Programming in C++ or 75% in HIT3181 Technical Software Development • Corequisite: Nil • Teaching methods: Lectures (2 hrs per week), Laboratory (1 hr per week) • Assessment: Assignments, Examinations
A unit of study in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Computing), Bachelor of Information Technology, Bachelor of Multimedia (Multimedia Software Development), Bachelor of Software Engineering, Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Science (Professional Software Development).

Aims & Objectives
To introduce the implementation of high performance 2D and 3D programming and games software with practical application onto Windows Operating System platform.

Content
• Foundations to Windows Programming
• Processes and Threads
• 3D Maths
• 3D Modelling
• Introduction to DirectX
• Transformations and Viewports in DirectX
• Animation
• Texture Mapping
• 3D Graphics File Formats
• Lighting
• DirectSound
• DirectInput

Reading Materials

HIT3258 Software Engineering Project B
12.5 Credit Points • 1 Semester • 48 Hours per Week • Hawthorn • Prerequisite: HIT3158 Software Engineering Project A passed in the same calendar year • Corequisite: Nil • Teaching methods: Lectures (2 hrs per week). Regular contact with Supervisor and Project Team Sessions (2 hrs per week) • Assessment: All documents prepared for assignment, product created, plus presentations given.
A unit in study in Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering), and Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
• To develop a software system in a medium-size team (about 6 members).
• To apply the range of knowledge and skills gained throughout the course, especially in software engineering, programming, data communications, database and multi-user/multi-platform technologies.

Content
• Initiation, specification, design, implementation, testing and deployment of a large software system development, requiring students to function as members of a sizable team (where possible, these projects will be for industry clients).
• Theoretical material will encompass the tools that will be required for the software development.

Reading Materials

HIT3303 Data Structures and Patterns
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HIT2302 Object-Oriented Programming or HIT3037 Programming in Java or HIT1052 Software Development 2 • Corequisite: Nil. Precussion: HIT2203 Data Structures and Algorithms • Teaching methods: Lecture (2 hrs per week), Laboratory (2 hrs per week) • Assessment: Examination: 60%, Tests: 20%, Assignments: 20%
A unit of study in the Bachelor of Computing, Bachelor of Business Information Systems / Bachelor of Business/Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Technology, Bachelor of Business Information Systems and Bachelor of Science (Professional Software Development).

Aims & Objectives
Given a problem description students will be able to produce an object oriented design and implementation using known behavioural, creation, and structural software design patterns including:
• Abstract factory and singleton
• Adapter, facade and proxy
• Command, observer, and strategy
Students will be able to describe and use classic data structures, including:
• Lists, double linked lists, circular linked lists
• Stacks and queues
• Trees, binary search trees, and heaps
• Hash tables
• Graphs
Students will be able to describe and use sorting algorithms, including:
• Bubble, Insertion, and Merge sort
• Quick and Heap sort
• Bucket and radix sort
Students will be able to understand and use recursive algorithms.
Given the implementation or description of an algorithm, students will be able to determine its performance using big O.
Given a problem description for a large single user program, students will be able to:
• Produce a design to address the problem using appropriate design patterns, data structures, and algorithms
• Implement data persistence using files and streams
• Separate the model from its interface
• Implement the solution using Java

HIT3304 Database Programming
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HIT2302 Object-Oriented Programming or HIT3172 Object-Oriented Programming in C++ or HIT3037 Programming in Java or HIT1662 Software Development 2, and HIT1402 Database Analysis and Design or HIT2016 Database 1 • Corequisite: HIT2308 Software Development Practice) or HIT1031 Software Engineering • Teaching methods: Lecture (2 hrs per week), Laboratory (2 hrs per week) • Assessment: Assignments, Tests, Examination
A unit of study in the Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering)) and Bachelor of Science (Professional Software Development).

Aims & Objectives
• Given a problem description for a database application, students will be able to produce a component based design to address the problem, expressed using diagrams and text.
• Given a component based design expressed in diagrams and text, students will be able to implement a solution using the subject's programming languages.
• Students will be able to compare and evaluate different component based designs from multiple perspectives, including: Client perspectives.
• Architectural issues. Implementation issues.
• Students will be able to implement event driven graphical user interfaces for web and rich clients.
• Students will be able to implement authentication schemes for web and rich client database applications.
• Given an architectural diagram and description for a two tier database application, students will be able to identify and describe potential security issues and suggest mechanisms to ensure the safety of the application and its
Aims & Objectives

Students will be able to develop database applications that are used by multiple concurrent users.

Given a problem description for a multi-user database program, students will be able to: Design a simple two-tier architecture with a web and/or rich client application that addresses the problem. Configure the solution components to ensure that the system runs smoothly. Setup and store information in a database. Implement the solution using the subject’s programming languages.

Students will be able to work cooperatively in small teams to develop software solutions.

Students will be able to use tools to help them build software cooperatively, including: Automated build environments. Automatic unit testing of source code in nightly builds. Concurrent versioning source code repositories. Task allocation and bug tracking software.

Content

- Application programming: Developing web applications. Developing rich client applications. Rendering information from the database.

Reading Materials

- Thomsen, Database Programming with C#, APress, 2002.
- Microsoft, http://msdn.microsoft.com

HT3309 Software Project Practices and Management

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn, Sarawak • Prerequisite: HT2308 Software Development Practices or HT1031 Introduction to Software Engineering. Preclusions: HT2306 Software Project Management, HT3407 Information Systems Project Management. Corequisite: Nil • Teaching methods: Lecture (2 hrs per week), Tutorial (2 hrs per week) • Assessment: Assignments and ongoing assessment tasks 100%

A unit of study in the Bachelor of Computing, Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Professional Software Development) and Bachelor of Computing (Network Design and Security) (IVS5)

Aims & Objectives

- Given a scenario and a problem students will be able to describe implications in terms of the scope, time, cost, and quality in taking a certain action.
- Students will be able to describe and evaluate decision in terms upon the scope, time, cost, and quality of a project.
- Given a software product and its functional specification students will be able to identify and classify defects using an orthogonal defect classification system.
- Students will be able to clearly document the nature of the defect in such a way that it facilitates reproduction and correction.
- Given a change request students will be able to describe its impact on the software product and/or the development process.
- Students will be able to measure the size and complexity of code, and use these measures to identify defect-prone areas.
- Given a scenario student will be able to identify and prioritize risks based upon the risk’s impact and probability.
- Given a risk related to a scenario, students will be able to propose techniques to manage the risk.
- Given a project outline students will be able to identify and classify the tasks involved using work breakdown techniques.
- Students will be able to use and describe techniques for tracking the progress and status of a project.

Content

- Classification theory.
- Tracking and Reporting.

Reading Materials

- Swinburne University of Technology, Undergraduate Course Handbook 2008

HT3310 Software Architectures and Design

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn, Sarawak • Prerequisite: HT2308 Software Development Practices or HT1031 Introduction to Software Engineering / Corequisite: Nil • Teaching methods: Seminars (1 hr per week), Project work (1-3 hrs per week) • Assessment: Peer and self assessment 40%, Performance reviews 60%

A unit of study in the Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Science (Professional Software Development).

Aims & Objectives

- Students will be able to create and identify abstractions at suitable levels for given user goals and system constraints and justify their rationale.
- Given a set of user goals and priorities, students will be able to identify constraints and quality goals of the software system under consideration.
- Given a system’s architecture, students will be able to identify common patterns used within its structure.
- Given a system’s architecture, students will be able to determine its benefits and limitations and evaluate it in terms of the user goals and priorities.
- Given a problem domain, students will be able to detect and classify reusable artifacts and justify their rationale for reuse.
- Given a system’s specification, students will be able to: make architectural decisions, use common patterns to produce an architectural structure, appropriately document their decisions and structure, and describe the benefits and limitations of their structure.
- Students will be able to communicate their architectural decisions and structures using a contemporary modeling language.

Content

- Patterns and Abstractions: Levels of abstraction. Common patterns (structural and behavioural)
- Software Architectures: Decisions vs. structures. Decision trees. Communication
- Reuse and reuse models
- Case studies: Message-driven architectures. Client-server architectures. Layered architectures

Reading Materials


HT3311 Software Deployment and Evolution

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn, Sarawak • Teaching methods: Lecture (2 hrs per week), Tutorial (1 hr per week) • Assessment: Assignments 30%, Examination 70%

A unit of study in the Bachelor of Computing, Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Professional Software Development) and Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives

- Given a software system and associated documentation, students will be able to prioritize components of the system in terms of maintainability.
- Given a software system, associated documentation, and goals for modification, students will be able to evaluate the structure of the software.
system in terms of evolutionary constraints.

- Given the architecture, source code, and build scripts of a software system, students will be able to develop deployment procedures and identify areas for automated deployment.
- Students will be able to apply contemporary code management techniques in the context of software maintenance and evolution.
- Given the source code of a software system and associated documentation, students will be able to reverse engineer the system's structure and communicate their findings.

Content
- Evolution and Maintenance
- Software Deployment
- System Integration
- Security
- Monitoring, exception handling
- Performance tuning, Profiling
- Recovery, Backup
- Configuration management

Reading Materials

HIT3315 Languages in Software Development
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HIT2302 Object-Oriented Programming or HIT3181 Technical Software Development or HIT1052 Software Development 2 or HIT2427 Object-Oriented Programming in .NET • Teaching methods: Lecture (2 hrs per week), Laboratory (2 hrs per week) • Assessment: 25% homework grade; 25% mid-term test grade; 50% final exam grade

A unit of study in the Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Science (Professional Software Development).

Aims & Objectives
At the end of HIT3315 students will have knowledge of, and be able to apply, the following principles of modern programming language design, implementation, and application:

- Solve problems using the imperative, functional, and object-oriented paradigms.
- Interpret the tradeoffs and issues involved in the design of various language features.
- Assess strengths and weaknesses of compiled and interpreter-based languages.
- Describe the strengths and limitations of the imperative, functional, and object-oriented paradigms for solving different kinds of problems (or in different application domains), especially in relation to each other.
- Explain and answer questions about specific languages that illustrate different paradigms, including questions about relevant concepts and major features.
- Evaluate programming language features and designs based on their use in building domain-specific abstractions or in doing meta-programming.
- Design, define, and evaluate parts of programming languages or similar systems and justify your design decisions. Justifications can be by: Referring to known programming language concepts; Referring to the semantics of the features; Making analogies to features in specific languages that illustrate the different paradigms and their success or limitations, or Making some more direct argument or proof.

Content
- Introduction: Basic concepts; History of programming languages
- Inductive sets of data: Sets, set builders, BNF, EBNF; Classification of grammars; Induction; Recursive program specification
- Introduction to Lambda Calculus: What is computable? Lambda calculus - syntax and semantics; Evaluation orders - the Church-Rosser Property
- Imperative Languages: C++; RPN
- Functional Languages: Strict functional languages: Scheme; Lazy functional languages: Haskell
- Object-Oriented Languages: C++; Traits; Classboxes
- Parallel and Concurrent Programming Specification: Computer architectures; Petri nets; Threads; Synchronisation in Java and C#
- Scripting: Perl, Python
- Hypertext languages: XML; HTML; XSL

Textbooks
Loudon, KC Programming Languages: Principles and Practice, 2nd edn
Sebesta, RB Concepts of Programming Languages, 8th edn
Roosta, SH Foundations of Programming Languages • Design and Implementation

HIT3321 IT Security
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1307 Internet Technologies (or HIT424 IP Technologies) and intermediate C or Java programming (HIT3181 Technical Software Development or HIT2302 Object-Oriented Programming or Software Development 2 (HIT1052)). • Teaching methods: Lecture (2 hrs per week); Lab/Tutorial (1 hr per week) • Assessment: Assignments (20%), Practical work (10%) and Examination (70%)

A unit of study in the Bachelor of Computing (Network Design and Security).

Aims & Objectives
Students who complete this unit of study will:
- Will understand the nature of security threats to IT systems.
- Will be aware of deficiencies in modern software systems and will understand how to manage the security of computer networks.
- Will be familiar with the tools used by hackers and crackers and be aware of ways of identifying and rectifying security breeches.
- Will understand how to assess the vulnerability of computing systems.
- Will understand the role of a programmer in developing secure systems.
- Will be able to collect digital evidence and understand the rules of evidence gathering.
- Will be able to describe and use a number of authentication tools.

Content
- Overview of Internet Crime and computer security threats.
- Operating System Flaws.
- Introduction to maintaining a Secure System.
- Set up, patch and monitor.
- Tools.
- System logs.
- Firewalls, security: theory, practice, design and implementation.
- Ports scanning, packet sniffing and intrusion detection.
- Understanding and responding to security alerts.
- Server technologies, risks and policies.
- Vulnerability analysis and Audit, how, what, when and why.
- Security, the role of the programmer.
- Defensive programming.
- Java and Windows Security Models.
- Physical Security.
- Authentication (identity, biometrics and digital signatures).
- Digital Forensic’s (the rules of evidence).

Reading Materials
Introduction to Computer Security, Matt Bishop, Addison-Wesley, 2005

HIT3323 Web Programming
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1301 Algorithmic Problem Solving or HIT1404 Introduction to Programming in .NET • Corequisite: HIT1307 Internet Technologies (or may be taken as a pre­ requisite) • Teaching methods: Lectures (2 hrs per week); Lab (1 hr per week) • Assessment: Folio and Assignment (50%), Test and Exam (50%)

A unit of study in the Bachelor of Science (Computing), Bachelor of Computing, Bachelor of Science (Professional Software Development). This unit is also available in an Electives Plus sequence.

Aims & Objectives
Students who successfully complete this unit of study will:
- Understand server-side development techniques.
- Understand the technologies and techniques associated with web applications.
- Be able to develop simple web applications that interact with databases.

Content
- Server-side programming.
• Accessing data stores with web applications.
• Form processing and usability issues.
• Security and authentication.
• Session control.
• Testing web applications.

Reading Materials

HIT3324 Web Application Development
12 Credit Points • 1 Semester • 36 hours • Hawthorn • Prerequisite: HIT1307 Internet Technologies and HIT3323 Web Programming • Teaching methods: Lectures (2 hrs per week), Laboratory (1 hr per week) • Assessment: Folio and Assignments: Individual assignment (15%); Group project (20%); Participation of e-Learning (5%). Final examination (60%)
A unit of study in the Bachelor of Computing (Network Design and Security) and Bachelor of Science (Professional Software Development)

Aims & Objectives
Students who successfully complete this unit of study will:
• Be able to use asynchronous content update technologies
• Be able to apply XML technologies for data management
• Understand how client-side dynamic scripting works
• Understand how server-side programming technologies work with asynchronous update technologies
• Understand web services, APIs and mashups of web services
• Understand design patterns
• Handle external data and use other data transformation formats
• Be able to develop interactive web applications

Content
• Ajax programming environment
• XML, DOM and CSS used in JavaScript
• Asynchronous content update technologies
• XML objects used between clients and servers
• XSLT and XPath
• Web services, APIs and mashups
• Design patterns
• RSS and JSON

Reading Materials

HIT3325 Web Application Architectures
12 Credit Points • 1 Semester • 36 hours • Hawthorn • Prerequisite: HIT3324 Web Application Development • Teaching methods: Lectures/Seminars (2 hrs per week), Labs (1 hr per week) • Assessment: Folio and Oral presentations (60%), Project Report (40%)
A unit of study in the Bachelor of Computing (Network Design and Security) and Bachelor of Science (Professional Software Development)

Aims & Objectives
Students who successfully complete this subject will have built a scalable web application using a Service Oriented Architecture. The application will expose API over the web and will incorporate external web services.

Content
• Web services
• Security for Web Services
• Mashups and the Programmable web
• Program and systems design for web application architects
• Enterprise architectures
• SOA
• Web-based solution designs
• Infrastructure design for web application architects
• Scalable web architectures
• Web API and RPC over the web

Reading Materials
Scalable Internet Architectures, Theo Schlossnagle, Sams Press, 2006


HIT3406 Enterprise Systems
12.5 Credit Points • 1 Semester • 3 Months per Week • Hawthorn, Sarawak • Prerequisite: HIT1401 Introduction to Business Information Systems or HIT1025 Introduction to Information Systems or HIT1322 Enterprise Technologies and Architectures • Corequisite: NIL • Teaching methods: Lecture (2 hrs per week), Tutorial (1 hr per week) • Assessment: Assignments 40%, Examination 60%
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems/Bachelor of Business, Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Technology, Bachelor of Science (Professional Software Development)

Aims & Objectives
Students who complete this subject should be able to:
• Identify the motivation, development, and implications of Enterprise Systems on an organisation.
• Explain why processes are important in organizations.
• Demonstrate understanding of the organizational processes and transaction processing systems found in traditionally-structured organizations, and how these may be enhanced and enabled through appropriate application of Enterprise Systems
• Demonstrate how to document business processes.
• Explain the concept of business process (re)engineering (BPR) and its facilitation of the implementation of Enterprise Systems
• Evaluate how enterprise software can support organizational processes and organisational performance

All students will gain hands-on experience using SAP.

Content
• A foundation for understanding Enterprise Resource Planning Systems and Enterprise Systems
• Reengineering and Enterprise Resource Planning Systems
• Enterprise Systems and Organisational Integration
• Planning, Designing, and Implementation of Enterprise Planning Systems
• Documenting Business Processes for Enterprise Systems
• Software Modules in Enterprise Systems: Sales and Marketing
• Software Modules in Enterprise Systems: Accounting and Finance Revenue Collection
• Software Modules in Enterprise Systems: Purchaser to Pay Process
• Software Modules in Enterprise Systems: Production and Material Management
• Software Modules in Enterprise Systems: Business Reporting Processes
• Software Modules in Enterprise Systems: Human Resources Perspective
• Enterprise Systems and organisational supply chains
• Managing an Enterprise System
• Realising the enterprise system and its impact on the organisation
• Implementation issues and evaluation of Enterprise Systems success

Reading Materials

HIT3407 Information Systems Project Management
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn, Sarawak • Prerequisite: HIT2405 Requirements Analysis and Modelling • Preclusions: HIT3309 Software Project Practices and Management • Teaching methods: Lectures and Tutorials • Assessment: Group Assignment; Individual assignments; Final Examination
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems/Bachelor of Business, Bachelor of Computing and Bachelor of Information Technology.

Aims & Objectives
Students who complete this unit of study should be able to:
• Demonstrate knowledge of project management terms and techniques such as
as: the constraints of project management; the project management knowledge areas and process groups, as specified in the Project Management Body of Knowledge (PMBOK); the project life cycle, all as related to IS.

- Demonstrate knowledge of tools and techniques such as project selection methods, Work breakdown structures, Network diagrams, Critical path analysis and Earned Value analysis, applied in the context of IS development and IS acquisition.
- Explain the importance of project management to improving the success of IS projects and discuss motivation theory, team building and principled negotiation in the IS context.
- Explain the importance of achieving measurable organisational value from IS Projects and managing project risk.
- Discuss the different approaches to IS Project management, such as Traditional, Agile and Adaptive.

**Content**

- Introduction to IS Project Management, Project Life cycle and Software process models.
- Project Scope management, Project Time management and scheduling, Project Cost Estimation, Project Quality Management.
- Introduction to Project Risk management and Project tracking and Monitoring.
- Introduction to Software metrics and Software configuration management
- Introduction to Software Process Improvement.
- Introduction to IS Project approaches (Traditional, Agile, Adaptive).
- Introduction to Team management, motivation theory and principled negotiation.

**Reading Materials**


**HIT3408 Information Systems Risk and Security**

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn, Sarawak • Prerequisite: HIT1401 Introduction to Business Information Systems + Coursequisite: Nil • Teaching methods: Lecture (2 hrs per week), Tutorial/Seminar (1 hr per week) • Assessment: Assignments 40%, Examination 40%

A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems/Bachelor of Business, Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Technology, Bachelor of Science (Professional Software Development) and Bachelor of Computing (Network Design and Security).

**Aims & Objectives**

Students who complete this unit of study should be able to:

- Describe the importance of identifying and managing IS-related risk and security issues in organisations, and the relationship between these and the achievement of business value from IS/IT investments.
- Recognise the costs of not appropriately identifying and managing risk and security concerns, resulting in IS/IT failures, dysfunctional systems, and systems which fail to deliver value to key stakeholders.
- Develop strategies for IS risk and security management, including the components of business continuity planning and disaster recovery planning.
- Explain the major theories and concepts associated with IS failure and the management of IS risk and security issues.
- Adopt a critical approach to current orthodoxy (and the divergence between practice and theory) on IS risk management and security management.

**Content**

- Identifying and managing IS risk costs of not appropriately identifying and managing risk, resulting in IS/IT failures, dysfunctional systems, and systems which fail to deliver value to key stakeholders.
- Developing strategies for IS risk management, including business continuity planning and disaster recovery planning.
- The major theories and concepts associated with IS failure and the management of IS risk and security issues.

**Readings**


**HIT3409 Process Modelling**

12.5 Credit Points • 1 Semester • 36 Hours Per Week • Hawthorn, Sarawak • Prerequisite: HIT2405 Requirements Analysis and Modelling + Coursequisite: Nil • Teaching methods: Lecture (2 hrs per week), Tutorial/Seminar/Laboratory (1 hr per week) • Assessment: Assignments 40%, Examination 40%

A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems/Bachelor of Business, Bachelor of Computing, Bachelor of Science (Computer Sciences and Software Engineering), Bachelor of Information Technology and Bachelor of Science (Professional Software Development).

**Aims & Objectives**

Students who complete this unit of study should be able to:

- Outline the nature and role of process analysis in contributing to the delivery of business value from IS/IT investments.
- Explain the notions of value business process reengineering, workflow, interorganisational processes, and their relationship to and dependence on modern information systems including enterprise systems.
- Demonstrate an understanding of the benefits of conceptualising an organisation in terms of its core business processes, articulating a process architecture, and ensuring alignment between process modelling and innovation initiatives, and IT strategy and innovation.
- Demonstrate an understanding of and use appropriate methods, tools and techniques for process identification, modelling and mapping, and process improvements and redesign.
- Utilise software and appropriate tools to model and interpret "as-is" and "to-be" process models.
- Appreciate that IS/IT enabled process improvement constitutes the major source of innovation in contemporary organisations.
- Understand the implications of core business processes being embedded in modern software applications, including enterprise systems.

**Content**

- Process modelling/Process mapping.
- Process design principles for IS analysts.
- The relationship of process architectures to IS architectures.
- Process innovation via the application of modern information systems and technology.
- Aligning processes with IT strategy.
- Role of IT in enabling/supporting/redesigning business processes.
- Process modelling methodologies, tools techniques and notations.
- Implementation of software applications with embedded processes.
- IS/IT enabled Interorganisational processes & supply chains.

**Reading Materials**


**HIT3410 Systems Acquisition and Implementation Management**

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn, Sarawak • Prerequisite: Requirements Analysis and Modelling (HIT2405) and HIT3406 Enterprise Systems • Teaching methods: Lectures and Tutorials • Assessment: Individual assignment 30%, Group assignment 30%, Examination 40%

A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems/Bachelor of Business, Bachelor of Computing, Bachelor of Science (Computer Sciences and Software Engineering), Bachelor of Information Technology and Bachelor of Science (Professional Software Development).

**Aims & Objectives**

Students who complete this subject should be able to:

- Demonstrate knowledge of the issues and options available to providing organisational IT services.
- Evaluate the pros and cons of differing approaches to acquiring systems, and demonstrate an ability to match particular approaches to particular organisational contexts.
- Discuss the issues associated with package selection, including requirements specification, selection criteria, vendor due diligence, and apply tools and techniques to business cases.
- Demonstrate an understanding of the principles and processes involved in IS vendor selection and management, and IS contract negotiation and management.
- Explain the major issues and human concerns in IS-related organisational transformation, identify causes of human resistance to change, and to show an ability to identify and implement steps to effectively manage IS-related change in an organisation.
- Understand approaches and frameworks for implementing systems in organisations, and appreciate the purpose and approaches to post-implementation reviews.
- Write user documentation and basic training manuals.

**Content**

- IS Contract negotiation & management.
- IS procurement.
- IS Vendor selection & management.
- Understanding the business implications of Open Source architectures.
- ISD Methods.
- Agile, adaptive approaches.
- Build vs buy decisions.
- IS Packages (requirements specification, selection criteria, vendor due diligence, contract negotiation, modification, implementation, integration issues).
- Systems integration.
- Assessment and appraisal of various approaches to implementation of systems in organisation.
- Management of people issues in implementing systems.
- Management of IT-based change, motivating organisational change and innovation.
- Training.
- Creating user manuals.
- Post implementation reviews.
- Systems maintenance.

**Textbooks**


**Recommended Reading**


Gelfina, UJ, Souton, SG & Hutton, JE (2005) Acquiring, Developing and Implementing Accounting Information Systems, Mason, Ohio, Thomson


Additional readings will be also be drawn from various professional journals.

**HIT3412 Business Information Systems Analysis**

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn, Sarawak • Prerequisite: HIT2405 Requirements Analysis and Modelling or HIT2049 or HIT3049 • Corequisite: NA • Teaching methods: Lecture (2 hrs per week), Tutorial/Seminar (1 hr per week) • Assessment: Assignments 40%, Examination 60%

A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems/Bachelor of Business, Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Technology and Bachelor of Science (Professional Software Development).

**Aims & Objectives**

Students who complete this unit of study should be able to:

- Appreciate the contribution of business information systems analysis as an aid to organisational problem solving.
- Demonstrate an appreciation of the notion that information systems analysis, development and acquisition all occur within complex, turbulent, uncertain and interconnected organisational contexts, and the implications of this to the practice of business information systems analysis.
- Demonstrate a knowledge and understanding of some of the major, contemporary Information Systems problem solving methodologies, and their application to business information systems analysis.
- Apply the notion and context of Information requirements analysis and the contemporary issues and problems associated with information analysis in an organisational context.

**Content**

- Nature of systems, information systems and systems thinking for BIS analysis and problem solving.
- Hard vs soft approaches to intervening in IS analysis.
- Positivist and interpretive approaches to IS analysis.
- Soft OR approaches, and their relevance and application to business information systems analysis, and to IS development and IS acquisition.
- Sociotechnical theory and its relevance to business information systems analysis.
- Reflective systems development approaches.
- Issues & challenges in business information systems analysis, and the criticality of this to information system success.
- Information as social/cultural (political symbol & signal, concept of myth and metaphor in business information systems analysis, and stems development and acquisition.
- Techniques & approaches for business information systems analysis.
- Interpersonal issues & communication difficulties between and amongst systems analysts & users.

**HIT3413 Business Intelligence**

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn, Sarawak • Prerequisite: HIT2405 Requirements Analysis and Modelling, HIT3405 Enterprise Systems • Corequisite: NA • Teaching methods: Lecture (2 hrs per week), Tutorial/Seminar/Laboratory (1 hr per week) • Assessment: Assignments 40%, Examination 60%

A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems/Bachelor of Business, Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Information Technology/Bachelor of Science (Professional Software Development).

**Aims & Objectives**

Students who complete this unit of study should be able to:

- Explain the notion of information value, classifying types and sources of value, and explaining the types of processing that can add value to corporate data sources.
- Explain the nature and role of business intelligence in contributing to the
delivery of business value and competitive in modern organisations.

- Relate the business intelligence environment, specifically data warehousing and data mining, to different organisational contexts.
- Identify the potential benefits, risks, and range of organisational and managerial issues associated with a successful implementation of a business intelligence system.
- Explain the need for a data integration process, data profiling, data cleansing and data enhancement, and their contribution to adding value to data.
- Using the link between corporate strategy, IS strategy and business intelligence strategy, assess alignment in a particular context, and associate particular business analytics with particular business intelligence strategies.
- Distinguish between the concepts of knowledge discovery and creation, and data mining, and select appropriate data mining tools and techniques to implement a business intelligence strategy.
- Appreciate data modelling, star schemas, and normalisation issues for data warehouses.

Content

- Concept of business value from corporate data, the exploitation of information for advantage, types and sources of information value.
- Nature and value of business intelligence, the business intelligence environment, and how types of data processing can add value to corporate data sources.
- Knowledge discovery, data mining, data warehousing.
- Business analytics.
- OLAP analysis, metadata.
- Customer Relationship management systems.
- The relationship between corporate strategy, IS strategy and business intelligence strategy.
- BI links to enterprise systems, SCM systems, KM systems.
- Structured & unstructured data, content management systems.
- Enterprise information portals, data delivery.
- Privacy, ethical, legal issues.
- Legacy data, data integration, data profiling, data cleansing and data enhancement.
- Data modelling, star schemas.

Reading Materials

HIT3416 Industry Project (Analytical)
12.5 Credit Points • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: Completion of Stage 2 • Corequisite: Nil • Teaching methods: Lectures, Seminars, Supervised readings, Group consultation • Assessment: Oral Presentation 20%, Project Report 80%
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems / Bachelor of Business, Bachelor of Information Technology, and Bachelor of Computing.

Aims & Objectives
Students who complete this unit of study should be able to:

- Demonstrate an ability to work in a project team environment on a project focussed on one of a variety of analytical topics or problems in information systems.
- Demonstrate an ability to analyse, synthesise and construct arguments and offer solutions using a range of tools, techniques, methods and other appropriate resources.
- Better appreciate the relationship between and understanding of theoretical constructs and their practical outworking in a real life organisational setting.
- Demonstrate an understanding of basic concepts of usability, HCI.
- Apply a range of analytical and problem solving skills in an information systems context.
- Show a willingness to present ideas for scrutiny to group members and working professionals, and demonstrate a willingness and ability to accept criticism from others.
- Show evidence of self-reliance and time management skills, and an ability to organise a project in order to gain greater independence as a learner and project team member.
- Demonstrate increased awareness and understanding of ethical and professional behaviours in an organisational context.

Content
This is a project unit, and as such, is aimed at students who wish to undertake a project in one of the analytical areas of information systems. At the commencement of the project, deliverables need to be identified and agreed upon by project groups and the unit controller, and clear expectations set in terms of requirements for assessment.

Reading Materials
There is no prescribed textbook. Students will be directed to suitable books and readings.

HIT3417 Industry Project (Technical)
12.5 Credit Points • 3 Hours per Week • Hawthorn, Sarawak • Prerequisite: Completion of Stage 2 • Corequisite: Nil • Teaching methods: Lectures, Seminars, Supervised readings, Group consultation • Assessment: Oral Presentation 20%, Project Report 80%
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems / Bachelor of Business, Bachelor of Computing.

Aims & Objectives
Students who complete this unit of study should be able to:

- Demonstrate an ability to work in a project team environment on a project focussed on one of a variety of analytical topics or problems in information systems.
- Demonstrate an ability to analyse, synthesise and construct arguments and offer solutions using a range of tools, techniques, methods and other appropriate resources.
- Better appreciate the relationship between and understanding of theoretical constructs and their practical outworking in a real life organisational setting.
- Demonstrate an understanding of basic concepts of usability, HCI.
- Apply a range of analytical and problem solving skills in an information systems context.
- Show a willingness to present ideas for scrutiny to group members and working professionals, and demonstrate a willingness and ability to accept criticism from others.
- Show evidence of self-reliance and time management skills, and an ability to organise a project in order to gain greater independence as a learner and project team member.
- Demonstrate increased awareness and understanding of ethical and professional behaviours in an organisational context.

Content
This is a project unit, and as such, is aimed at students who wish to undertake a project in one of the technical areas of information systems. At the commencement of the project, deliverables need to be identified and agreed upon by project groups and the unit controller, and clear expectations set in terms of requirements for assessment.

Reading Materials
There is no prescribed textbook. Students will be directed to suitable books and readings.

HIT2405 Requirements Analysis and Development
12.5 Credit Points • 3 Hours per Week • Hawthorn • Prerequisite: HIT2401 Requirements Analysis and Modelling • Corequisite: Nil • Teaching methods: Lecture (2 hrs per week), Tutorial/Seminar/Laboratory (1 hr per week) • Assessment: Assignments 40%, Examinations 60%
A unit of study in the Bachelor of Business Information Systems/Bachelor of Business, Bachelor of Computing.

Aims & Objectives
Students who complete this unit of study should be able to:

- Demonstrate an understanding of basic concepts of usability, HCI.
- Apply a range of analytical and problem solving skills in an information systems context.
- Show a willingness to present ideas for scrutiny to group members and working professionals, and demonstrate a willingness and ability to accept criticism from others.
- Show evidence of self-reliance and time management skills, and an ability to organise a project in order to gain greater independence as a learner and project team member.
- Demonstrate increased awareness and understanding of ethical and professional behaviours in an organisational context.

Content
This is a project unit, and as such, is aimed at students who wish to undertake a project in one of the technical areas of information systems. At the commencement of the project, deliverables need to be identified and agreed upon by project groups and the unit controller, and clear expectations set in terms of requirements for assessment.

Reading Materials
There is no prescribed textbook. Students will be directed to suitable books and readings.
Aims & Objectives
Students who complete this unit of study should be able to:

- Identify the nature and characteristics of decision making in organisational contexts, state the factors that contribute to less than satisfactory decision being taken, and recognise the application of decision analysis to improved managerial decision making.
- Recognise the integration of quantitative and behavioural issues associated with managerial judgment and decision making.
- Recognise the relationship between problem solving and decision analysis, and their links to business analysis and requirements analysis.
- Identify key components of a business problem, such as multiple objectives, conflicting objectives, environmental uncertainty, rapid change, inadequate information sources, and be able to match appropriate structured decision analysis approaches to particular problem types.
- Explain the potential benefits, risks, limitations, and range of organisational and managerial issues associated with decision analysis.
- Apply and evaluate decision analysis techniques to business problems and cases, and appropriately utilise computer aided techniques to support the analysis process.

Content
- Nature of decision making in complex, uncertain and turbulent business environments.
- Dealing with multiple, often conflicting perspectives of what constitutes the problem, and multiple objectives in terms of problem improvement, and the role of decision analysis in supporting the decision making process.
- Introduction to basic probability, decision making under uncertainty.
- Appropriate use of quantitative decision analysis techniques, mixing quantitative and qualitative approaches.
- Scenario planning, and its contribution to decision making under uncertainty and complexity.

Reading Materials

HIT3422 Database Implementation
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT2016 Database; HIT3017 Database 2 • Corequisite: Nil • Teaching methods: Lecture (2 hrs per week), Laboratory (1 hr per week) • Assessment: Assignments 30%, Examination 70%
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems/Bachelor of Business, Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Technology and Bachelor of Science (Professional Software Development)

Aims & Objectives
Students who complete this unit of study should be able to:

- Describe what facilities are available in a modern multi-tiered database environment for the implementation of business rules.
- Discuss the advantages and disadvantages of implementing business rules in each of those tiers.
- Apply techniques and facilities such as stored procedures, database triggers and cursors.
- Explain and describe the implications of accessing a database via the web.
- Given a business domain, design and implement a collection of business rules in the appropriate tiers of a multi-tiered database system.

Content
- Multi-tier database architectures
- Data integrity
- Integrity independence
- Business rules
- PL/SQL
- Database Triggers
- Stored procedures
- Programming with cursors.
- Web based database systems

HIT3422 Database Performance Issues
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT2420 Database Management Systems or HIT3017 Database 2 • Preclusion: HIT3018 Database 3 • Teaching methods: Lecture (2 hrs per week), Laboratory (1 hr per week) • Assessment: Assignments 30%, Examination 70%
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems/Bachelor of Business, Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Technology and Bachelor of Science (Professional Software Development)

Aims & Objectives
Students who complete this unit of study should be able to:

- Analyse performance requirements and define appropriate database structures for a given database system.
- Explain the various options for database performance tuning.
- Explain how a given query plan executes and be able to evaluate its effectiveness and take action to improve it.
- Apply physical design principles to a range of database systems including distributed, data warehouse and non-relational database systems.

Content
- Database structures.
- Database definition and creation.
- Physical design issues.
- Query optimisation.
- Performance tuning.
- Performance in distributed systems.
- Performance in data warehouse systems.
- Performance in non-relational database systems.

Reading Materials

HIT3423 Enterprise Systems Management
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn, Sarawak • Corequisite: Nil • Teaching methods: Lecture (2 hrs per week), Laboratory (2 hrs per week) • Assessment: Assignments 40%, Examination 60%
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems/Bachelor of Business, Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Technology and Bachelor of Science (Professional Software Development)

Aims & Objectives
On completion of this unit of study students should be able to:

- Demonstrate an understanding of the IS management issues involved with enterprise systems.
- Apply basic techniques, tools, methods and principles in the control of enterprise systems.
- Demonstrate an understanding of and skill at configuration, customisation, and integration issues.

Content
- Introduction to Enterprise Systems Management.
- Enterprise System Project Life Cycle.
- Requirements Analysis, Business Fit and Tailoring of Enterprise Systems.
- Configuration Management of Enterprise Systems.
• Integration management of Enterprise Systems.
• Change management and Enterprise Systems Management.
• System Training.
• Implementing Enterprise Systems.
• Operational Management of Enterprise Systems.
• Understanding Benefits, Cost and Risks in Enterprise System Management.
• Evaluation of Enterprise Systems.
• Future Trends and Issues in Enterprise Systems.

Reading Materials

HIT3424 Information Systems Management
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Corequisite: Nil • Teaching methods: Lectures and Tutorial • Assessment: Individual and group assignments 65%, Examination 35%
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems/Bachelor of Business and Bachelor of Science (Computer Science and Software Engineering) Bachelor of Information Technology

Aims & Objectives
The student who successfully completes this unit of study will:
• Identify the characteristics and elements underpinning business and IS/IT strategies.
• Apply analytical tools and techniques to align business and IS/IT strategies.
• Identify problems, opportunities and challenges in IS management and make recommendations based on sound IS management theory and practice.
• Critically evaluate issues in the management of relationships between IS professionals and business clients demonstrating sensitivity to cross-cultural and interpersonal communication issues associated with the successful management of global IT teams.
• Demonstrate appropriate communications skills in group work and written and oral presentations.

Content
• Understanding the business environment.
• Introduction to strategy. IS/IT strategy.
• Concept of alignment with business strategy.
• IS/IT architectures.
• Managing the IS infrastructure.
• IT governance, governance mechanisms and processes.
• Developing & managing organisation wide IT capability.
• Structuring IT.
• Evaluating investments in IS, decision making about IT.
• Managing realisation of benefits from IT investments.
• Managing delivery of IS services.
• Managing global development teams.
• IT performance measurement, benchmarking.
• Cross cultural communication & management issues.
• Managing conflict (in development teams, with users).
• CIO-CEO relationship, building relationships with business, Business Relationship Management.
• Development a service culture in IS, managing users as clients.

Reading Materials


HIT3426 Enterprise Systems Implementation
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT3420 Database Management Systems, HIT3425 Business Systems Programming in .NET, HIT3406 Enterprise Systems • Corequisite: Nil • Teaching methods: Lecture (2 hours per week), Tutorial/laboratory (1 hour per week) • Assessment: Assignments 40%, Examination 60%
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems/Bachelor of Business, Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Technology Bachelor of Science (Professional Software Development).

Aims & Objectives
Students who complete this unit of study should be able to:
• Describe and differentiate the key technologies of Enterprise System Implementation.
• Explain the issues in the development of the project implementation plan.
• Describe the issues involved in implementing the alternative Enterprise System Integration solutions.
• Evaluate alternative Enterprise System Integration solutions.
• Apply certain key technologies of Enterprise System Implementation.

Content
• Technologies such as Data Base Systems, Legacy Systems, Application Packages, Ecommerce Systems and Messaging Systems.
• Develop a plan of Enterprise Application and Integration standards.
• Configure Enterprise Resource Planning Systems or Business Application software.
• Middleware and Integration Tools.
• Integrate data from various Business Systems.
• Model Driven Architecture.
• Business System Domains.
• Integration Infrastructure Model.
• Workflow Process Model.
• Enterprise System Security.
• Managing the Infrastructure.

Reading Materials

HIT3427 Configuring Business Information Systems Solutions
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT3406 Enterprise Systems and HIT3410 Process Modelling and HIT3410 Systems Acquisition and Implementation Management • Teaching methods: Lectures (2 hrs per week), Lab sessions (1 hr per week) • Assessment: Group work (20%), Oral presentation (20%), Project Report (60%)
A unit of study in the Bachelor of Business Information Systems, Bachelor of Business Information Systems / Bachelor of Business and Bachelor of Computing.

Aims & Objectives
• Students who complete this unit of study:
• Will be able to work effectively in project teams.
• Will understand the issues involved in, and be able to, specify business & information requirements for package software solutions, select appropriate tools and techniques, configure package solutions to meet business requirements.
• Will be able to apply a range of skills and knowledge acquired throughout their degree programme in a real life project context.

Content
• Problem analysis
• Requirements specification
• Package selection
• Software configuration & implementation
• Testing
• Usability

Reading Materials

HIT3504 Astrophysical Supercomputing 1
12.5 Credit Points • 1 Semester • Hawthorn • Prerequisite: HIT2080 Introduction to Programming, HMS111 Engineering Mathematics 1, HIT1501 Discovering The Universe • Teaching methods: Lectures (18 hours per semester), Laboratory Work (16 hours per semester) • Assessment: Assignments, Examinations

Aims & Objectives
Students will understand:
• How supercomputers are used in both theoretical and observational astrophysics
• The data reduction process in observational astronomy (optical and radio)
• The challenges of astronomy in the Virtual Observatory era

Students will be able to:
• Run an astrophysical code on a supercomputer using a batch queue system
• Use standard observational data reduction packages to create and analyze images
• Analyze time series data
• Access an astronomical dataset through a Virtual Observatory interface

Content
• Introduction to supercomputers: parallel computing, MPI, batch queue systems, code profiling
• Optical data reduction: CCD imaging, flat-fielding, filters and colour imaging, analysis techniques, photometry and astronomy
• Time series analysis: trend analysis, the Fourier transform, the correlation function, data windowing, finite time series, incomplete time series, significance testing, the fast Fourier transform
• Techniques of radio astronomy: single dish astronomy, multi-dish astronomy
• Astrophysical applications: pulsar searching and timing with supercomputers, the Square Kilometre Array
• Visualization of astronomical datasets
• Astronomy in the Virtual Observatory era

Reading Materials
Course notes will be available

HIT3505 Astrophysical Supercomputing 2
12.5 Credit Points • 1 Semester • Hawthorn • Prerequisite: HIT3504 Astrophysical Supercomputing 1 • Teaching methods: Lectures (18 hours per semester), Laboratory (18 hours per semester) • Assessment: Assignments, Examinations

Aims & Objectives
Students will understand:
• The role of supercomputers in modern astrophysics
• The fundamental role of gravity in determining the structure of the universe
• The mathematical concepts underlying N-body astrophysics

Students will be able to:
• Determine an appropriate numerical scheme for solving a gravitational N-body problem
• Analyze and visualize existing N-body datasets
• Generate initial conditions for a standard N-body code
• Write a code for solving a given astrophysical N-body problem

Content
• Introduction to numerical astrophysics: numerical algorithms, computational mathematics, finite difference techniques, numerical stability
• Gravity with few bodies: gravity, the two body problem, orbital elements, constants of the motion, phase space analysis, the restricted 3-body problem, deriving the Jacobi constant
• Chaos, integration techniques, visualization of phase space
• The Solar System: Hamiltonian dynamics, stability of orbits, symplectic integration methods
• Stellar clusters: Gravity as an N2 operation, the virial theorem, cluster evolution and multiple star processes, algorithms for problems with moderate N, statistical approaches, visualizing stellar clusters
• Simulating the Universe: Algorithms for very large N, cosmological simulation, comparing simulation with observation, visualizing the universe

Reading Materials

HIT3712 Enterprise Networking
12.5 Credit Points • 1 Semester • Hawthorn • Prerequisite: HIT3722 Object-Oriented Programming in C++ • Teaching methods: Lectures (2 hrs per week), Laboratories (2 hrs per week) • Assessment: Assignments, Examinations

Aims & Objectives
To introduce students to the challenges and rewards of scientific computing, via the principal mathematical and physical algorithms and their application. On completion of the course, students will be able to:
• Describe the challenges that scientific computing shares with other computing fields, and those that are unique to the field.
• Sketch and comprehend flow diagrams for generating meaningful results from measured data in the astronomy, medical imaging and particle physics fields.
• Estimate the compute power required for leading-edge scientific computing challenges such as the Square Kilometre Array and the Large Hadron Collider.
• Apply linear, statistical and filtering methods in C to deduce the important properties of scientific datasets.
• Construct and optimise a simple gravitational N-body code in C or C++.
• Analyse and visualize existing N-body datasets.
• Describe the challenges that scientific computing shares with other computing fields.
• Describe the challenges that scientific computing shares with other computing fields.
• Describe the challenges that scientific computing shares with other computing fields.

Content
• Foundations of scientific computing, and the scientific computing environment
• Principle mathematical algorithms: the Fast Fourier Transform, convolution, linear algebra and statistics, multiscale methods, filtering
• Image generation and processing, with applications from astronomy and medical physics
• Image characterisation and measurement noise
• Periodic and non-periodic signal detection
• Principle physics algorithms: particle codes, fluid codes, particle-mesh codes
• N-body cosmology
• Numerical magnetohydrodynamics
• Parallel programming and specialist processors including GRAPE boards
• Data presentation: 2d, 3d and stereoscopic graphics programming

Reading Materials
Starck, J-L. et al., Image Processing and Data Analysis, Cambridge University Press, 1998

HIT3712 Enterprise Networking
12.5 Credit Points • 1 Semester • Hawthorn, Sarawak • Prerequisite: HITET400 Network Administration or HIT7710 Network Administration • Teaching methods: Lectures (24 hrs) Tutorials (24 hrs) • Assessment: 2 x Individual Tests, Practical Examination, Written Final Examination

A unit of study in the Bachelor of Computing, Bachelor of Science (Computer Science & Software Engineering), Bachelor of Science (Professional Software Development), Bachelor of Science (Professional Software Development).
Aims & Objectives

Students who successfully complete this unit of study will be able to:

- Plan a TSP/IP physical and logical network.
- Plan and troubleshoot a routing strategy.
- Plan a Dynamic Host Configuration Protocol (DHCP) strategy.
- Optimize and troubleshoot DHCP.
- Plan a Domain Name System (DNS) strategy.
- Optimize and troubleshoot DNS.
- Plan and optimize Windows Internet Naming Service (WINS).
- Plan, optimize and troubleshoot IPSec network access.
- Troubleshoot network access.
- Describe the logical and physical components of Active Directory.
- Create and configure a forest and domain structure by using an Active Directory infrastructure design.
- Plan and implement an organizational unit structure.
- Plan and implement Active Directory user, group and computer accounts.
- Plan and implement a Group Policy strategy to centrally manage users and computers in an enterprise.
- Deploy, manage and troubleshoot software that is deployed using Group Policy.
- Implement sites to manage and monitor Active Directory replication.
- Plan and implement the placement of domain controllers, global catalogue servers and DNS servers that are integrated with Active Directory.
- Plan and manage operations master.
- Back up, restore and maintain Active Directory.
- Plan and implement an Active Directory infrastructure that is based on a directory service design that an enterprise architect provides.

Content

- Planning and optimizing a TCP/IP and Logical Network.
- Planning and Troubleshooting Routing and Switching.
- Planning, Optimizing and Troubleshooting DHCP, IPSec.
- Planning a DNS Strategy.
- Optimizing and Troubleshooting DNS.
- Planning and Optimizing WINS.
- Planning and Troubleshooting Network Access.
- Planning a Windows Server 2003 Network Infrastructure.
- Introduction to Active Directory Infrastructure.
- Implementing an Active Directory Forest and Domain Structure.
- Implementing an Organizational Unit Structure, User, Group, Computer Accounts and Group Policy.
- Deploying and Managing Software Using Group Policy.
- Implementing Sites to Manage Active Directory Replication.
- Implementing the Placement of Domain Controllers.
- Managing Operations Masters.
- Maintaining Active Directory.
- Planning and Implementing an Active Directory Infrastructure.

Reading Materials

All students are required to have a copy of the following materials.

Microsoft Official Curriculum.

Planning and Maintaining a Microsoft Windows Server 2003 Network Infrastructure (Course 22788).
Planning, Implementing and Maintaining a Microsoft Windows Server 2003 Active Directory Infrastructure (Course 22799).

HIT3713 Internetwork Routing

12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: HET4241P: IP Technologies • Corequisite: Nil • Teaching methods: Lectures (12 hrs), Tutorials (12 hrs) and Laboratories (336 hrs) • Assessment: Written Examination, Skills Examination, Online Final Test, Weekly Online Tests

A unit of study in the Bachelor of Engineering (Telecommunication & Internet Technologies), Bachelor of Engineering (Telecommunication & Internet Technologies) / Bachelor of Science (Computer Science & Software Engineering), Bachelor of Computing, Bachelor of Science (Computer Science & Software Engineering), Bachelor of Science (Professional Software Development).

Aims & Objectives

Students who successfully complete this unit of study will be able to:

- Understand the fundamental concepts of scalable network design,
- Obtain a good grasp of the different interior routing protocols used, with particular attention given to EIGRP, OSPF, IS-IS.
- Understand the function of and the need for route optimization,
- Have a basic understanding of BGP operation and configuration, as well as integrating BGP with ISP networks
- Understand and implement IP multicasting in a network.
- Understand the basic concepts of IPv6 including both its need and how it applies to the internet.

Content

- Scalable Network Design
- EIGRP & EIGRP Case Study
- OSPF & OSPF Case Study
- IS-IS
- Route Optimization
- BGP & BGP/EIGRP routing Case Study
- IP Multicast
- IPv6

Reading Materials


HIT3753 Remote Access Networks

12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn, Sarawak • Prerequisite: HET4241P: IP Technologies • Corequisite: Nil • Teaching methods: Lectures (12 hrs), Tutorials (12 hrs) and Laboratories (36 hrs) • Assessment: 1 Written Examination, 1 Skills Examination, 1 Online Final Test, Weekly Online Tests

A unit of study in the Bachelor of Computing, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Professional Software Development) Bachelor of Science (Professional Software Development), Bachelor of Engineering (Telecommunication and Internet Technologies) and Bachelor of Engineering (Telecommunication and Internet Technologies) /
Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
Students who successfully complete this unit of study will be able to:
- Understand and explain the CISCO hierarchical network model as it pertains to the WAN
- Describe and implement teleworker configuration and access
- Implement and verify frame mode MPLS
- Describe and configure a site-to-site IPSEC VPN
- Describe and configure Cisco EZVPN
- Understand and explain the strategies used to mitigate network attacks
- Describe and configure Cisco device hardening
- Describe and configure IOS firewall and IPS features

Content
- Remote Network Connectivity Requirements
- Teleworker Connectivity
- IPsec VPNs
- Frame Mode MPLS Implementation
- Cisco Device Hardening
- Cisco IOS Threat Defense Features
- Case Studies

Textbooks

References

HIT4000 Honours Research Project
50 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Teaching methods: Individual tuition with supervisor and seminars • Assessment: Written report, Research Project, Final Presentation, Test
A unit of study in the Bachelor of Information Systems (Honours), Bachelor of Information Technology (Honours), and Bachelor of Science (Computer Science)(Honours).

Aims & Objectives
Develop academic research techniques and communication skills while exploring a topic in depth.

Content
Determined in consultation with supervisor.

HIT4010 Research Methods
12.5 Credit Points • 1 Semester • 24 hours • Hawthorn • Prerequisite: Available to Honours students only • Corequisite: Nil • Teaching methods: Lectures • Assessment: Written Report, Presentation, Test
A unit of study in the Bachelor of Information Systems (Honours), Bachelor of Information Technology (Honours), and Bachelor of Science (Computer Science)(Honours).

Aims & Objectives
By the end of this unit of study students should be able to:
- Identify the basic principles of academic research and the fundamentals concepts of research.
- Interpret and critically evaluate previously published research in a formal literature review.
- Describe the characteristic features of common research methods and debate their relative merits.
- Identify a research question (or project question/objective) and justify the selection of an appropriate and ethically managed research method.
- Produce a written research/project proposal/report/paper and effectively present information in an oral presentation.

Content
- Defining research.
- Specifying roles of student and supervisor.
- Developing a research/project question/problem/objective.
- Presentation techniques.
- Reviewing the literature.
- Planning research/project design.
- Ethics.
- Writing a research/project proposal.
- Qualitative and quantitative research methodologies.
- Writing a research paper and technical report with corresponding writing skills.

Reading Materials

HIT4058 Software Engineering Project A
25 Credit Points • 2 Semesters • 60 Hours per Semester • Hawthorn • Prerequisite: HIT2153 Software Development 3A or HIT2253 Data Structures and Algorithms, and HIT3055 Software Maintenance Project • Teaching methods: Lectures, Project Supervision, Assessment: Project Work, Presentations
A unit of study in the Bachelor of Software Engineering.

Aims & Objectives
- To engineer a software system in a large team.
- To apply a range of knowledge and skills gained throughout the course, especially in software engineering, programming, data communications, database and multi-user/multi-platform technologies.

Content
- Initiation, specification, design, implementation, testing and initial maintenance of a large software system development, requiring students to function as members of a sizeable team (where possible these projects will be relevant to identifiable industry needs).
- Theoretical material will encompass the tools that will be required for the software development.

Reading Materials
Reading materials will be announced during the subject, the following are a guide: Boehm, BW, Software Risk Management, IEEE Computer Society Press, Washington, 1986.

HIT4070 Research Report
25 Credit Points • 2 Semesters • 48 Hours • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Assessment: Class Presentations, Report
A unit of study in the Bachelor of Software Engineering.

Aims & Objectives
To provide a flexible program of study which allows the student to undertake a special project. This would require research into a topic that is relevant to the course, but alternative to the prescribed units.

Content
Approved students to prepare an article of around 8,000 words on a topic chosen in consultation with a staff member. Generally the paper will take the form of a comprehensive literature review of a topic of contemporary interest, followed by a presentation of research undertaken by the student.

Reading Materials
There is no prescribed text. Students will be directed to appropriate books and journal articles.

HIT4071 Research Project
12.5 Credit Points • 1 Semester • 120 Hours • Hawthorn • Prerequisite: Students must be in the final year of their program and enrolment must be approved by the subject coordinator. • Corequisite: Nil • Teaching methods: Project Work, Research Group Meetings and Consultation with Project Supervisor • Assessment: Final Report
A unit of study in all Faculty of Information and Communication Technologies undergraduate courses.

Aims & Objectives
Students who successfully complete this unit of study will:
- Understand the principles of academic research and the fundamental concepts of research methodology.
- Work in a team towards a research goal.

Content
Students work as a member of one of the School of Information Technology’s research groups for a total of 120 hours. All work will be under the guidance of an
established researcher. The nature of the work may be negotiated with the research leader. Assessment is based on the quality of the work done (50%) and a reflective report on the major contribution to the research project (50%). The reflective report will take the form of an academic research paper.

**Reading Materials**
There is no prescribed text. Students will be directed to appropriate books and journal articles.

**HIT4301 Studio Project A**
37.5 Credit Points • 300 hours of project work • Hawthorn • Prerequisite: HIT3200 Software Development Project B • Prerequisite: HIT2100 IBL

**Aims & Objectives**
- Given a work objective students will apply knowledge, tools, and methodologies learnt in previous subjects to satisfactorily complete the tasks required.
- Students will design, develop, and maintain applications for external clients.
- Students will interact with external clients to determine requirements under the direction of the project staff.

**Reading Materials**
As required by project.

**HIT4302 Studio Project B**
37.5 Credit Points • 300 hours of project work • Hawthorn • Prerequisite: HIT4301 Studio Project A • Prerequisite: HIT3105 Software Development Project A and HIT3205 Software Development Project B • Teaching methods: Project work • Assessment: Peer and self assessment 40%, Performance reviews 60%

**Aims & Objectives**
- Given a work objective students will apply knowledge, tools, and methodologies learnt in previous subjects to satisfactorily complete the tasks required.
- Students will design, develop, and maintain applications for external clients.
- Students will interact with external clients to determine requirements under the direction of the project staff.

**Reading Materials**
As required by project.

**HIT4303 Research Project A**
37.5 Credit Points • 300 Hours of Project Work • Hawthorn • Prerequisite: HIT3105 Software Development Project A and HIT3205 Software Development Project B • Teaching methods: Project work • Assessment: Performance review 100%

**Aims & Objectives**
- Given a work objective students will apply knowledge, tools, and methodologies learnt in previous subjects to satisfactorily complete the tasks required.
- Students will design, develop, and maintain applications for external clients.
- Students will interact with external clients to determine requirements under the direction of the project staff.

**HIW050 Industry-Based Learning**
100 Credit Points • 1 Year • Prerequisite: NIl • Assessment: Report

**Aims & Objectives**
The object of Industry-Based Learning is for students to integrate theoretical knowledge with the practical applications and experiences in a commercial environment. It also aims to assist the student by providing opportunities for personal growth and developing both technical and interpersonal skills. Benefits to the student:
- Academic performance is often seen to improve following the industry experience.
- Opportunity to experience particular areas of their chosen profession before graduation.
- Ability to earn while they learn.
- A head-start to a successful future. As students with industry experience already have a point of comparison, career decisions are more informed and students have more to offer employers when they seek graduation employment.

**Content**
This unit of study is available to students in the Faculty of Information and Communication Technologies for students who are accepted who are able to successfully gain an approved placement. All applicants will be interviewed to determine their suitability.

**HIW051 Industry-Based Learning**
50 Credit Points • 20 Weeks • Hawthorn • Prerequisite: HIT2100 IBL

**Aims & Objectives**
- While the learning activity is undertaken in commercial environments, the objects are educational, not commercial. The objectives of the unit of study are broadly stated as:
  - Personal development.
  - Exposure to the environment and culture of business/industry.
  - Development of information technology skills.

**Content**
HIW051 Industry-Based Learning is the first of two mandatory placements within the Bachelor of Information Technology program. The development of information technology skills particularly relates to experiencing programming, systems software and the information technology environment of business and industry.

**HIW052 Industry-Based Learning**
50 Credit Points • 20 Weeks • Hawthorn • Prerequisite: HIW051 Industry-Based Learning • Prerequisite: HIT2100 IBL

**Aims & Objectives**
- While the learning activity is undertaken in commercial environments, the objects are educational, not commercial. The objectives of the unit of study is broadly stated as:
  - Personal development.
  - Further exposure to the environment and culture of business/industry.
  - Further development of information technology skills.

**Content**
HIW052 Industry-Based Learning builds upon the knowledge and experience gained in HIT2100 IBL and the units studied within the Bachelor of Information Technology, with particular emphasis on the specialist studies undertaken in the 8th and 9th segments.

**HMA103 Statistics and Research Methods A**
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: NIl • Corequisite: NIl • Teaching methods: Lectures, Tutorials, Assessment: Assignments, Examination, Test

**Aims & Objectives**
A unit of study in the Bachelor of Science (Psychology and Biochemistry); Bachelor of Science (Psychology and Psychophysiology); Bachelor of Arts; Bachelor of Arts (Psychology and Psychophysiology); and Bachelor of Social Science (designed for students undertaking psychology as a major and going on to study HMB210).

Note: students may only receive credit for one of: HMA103, HMA104, HMB110, HMB111 and HMB102.
Aims & Objectives
This unit of study is designed to enable students to develop the capacity to carry out independent statistical investigation, together with an awareness of the assumptions and limitations involved with the generalisation of the results of such investigations.

Content
- Ordering & grouping data: frequency tables; picturing data: histograms and stemplots; summarising data: median, IQR & boxplots; the mean & standard deviation; level of measurement.
- Describing and displaying relationships; Pearson’s r; introduction to regression; relationships in tabulated data; correlation and causality.
- Producing data; experiments; population and samples; density curves and normal distribution; the standard normal.
- Making decisions about means, the z and t tests; testing relationships; Pearson’s r and the chi-squared test of independence.
- Introduction to estimation, confidence intervals for the mean.

Reading Materials
To be advised.

HMA105 Practical Statistics
12.5 Credit Points • 1 Semester • Three hours per week for one semester in a computer lab/casual room • Hawthorn • Prequisite: NIL • Teaching methods: Lectures, Tutorials, Excel Labs • Assessment: Workbook and spreadsheet task 20%, Mid-semester test 30%, Final exam 50%.
A unit of study in the Bachelor of Arts, Bachelor of Arts (Media and Communications) and Bachelor of Social Science (designed for students not taking Psychology as a major).

Note: Students may only receive credit for one of: HMA103, HMA104, HMA105, HMB110, HMB111 and HMS102.

Aims & Objectives
An increasing number of positions require employees to have a wide range of statistical skills including designing studies, collecting data, carrying out data analysis, including secondary analysis of existing data sets, as well as presenting and communicating the results. They also need an understanding of the literature in their discipline which involves statistical results.

This unit of study aims to provide students with a practical introduction to the concepts and practice of data collection, analysis and presentation, including an introduction to statistical estimation and testing. It aims to use data that relates to real situations where students have to decide which methods to apply and how to report the results. Furthermore, it aims to have students learn how to use appropriate methods for finding relationships, determining whether groups differ significantly on particular characteristics, to estimate population values and determine an appropriate sample size. It also aims to help develop good critical skills so they are given sufficient knowledge of data collection methods, including sampling methods and experimental design, and determine whether the methods used are valid or not.

This unit is designed to enable students to develop the capacity to understand and evaluate information presented in numerical form, to carry out independent statistical investigation and to develop an awareness of the assumptions and limitations involved in interpreting the results of such investigations.

Content
This is an introductory unit of study in statistical methods with the emphasis on statistical techniques applicable to the social sciences. The approach will be largely non-mathematical, concentrating on concepts rather than mathematical theory.

The first part of the unit of study will be an introduction to descriptive statistics for univariate and bivariate data, covering topics such as levels of measurement, ordering and grouping data; frequency tables, the mode, quartiles. Measures of centre and spread: the median and mean, range, IQR and standard deviation. Introduction to rates, ratios and index numbers and time series. It will also include describing and displaying relationships between two variables, relationships in tabulated data, percentages, Pearson’s r, introduction to correlation and regression. Investigation the effect of a third variable and causality. Picturing data: histograms, stemplots, barcharts, pie charts, boxplots, scatterplots.

The second part introduces the ideas of inferential statistics, that is drawing inferences about populations on the results obtained from samples. Topics would include samples and populations, basic methods of sampling and experimental design, sampling distributions and the standard error. The normal distribution.

Introduction to hypotheses testing with techniques chosen from testing differences in proportions, means, inference for Pearson’s r and the chi-squared test, confidence intervals and determination of an appropriate sample size.

Applications to data drawn from the political and social sciences and media including secondary data sources such as ABS data. Capturing and analysing secondary data with a spreadsheet. The statistical packages EXCEL and SPSS graphics calculators will be used where appropriate as teaching tools and computational aids (previous experience will not be assumed). Students will learn skills that will allow them to go into the workplace with knowledge of issues involved in collecting, analysing and reporting the results from quantitative studies. The unit will focus on practical skills and the presentation of results in a workplace setting.

Reading Materials
Course notes as prepared by the lecturer. Other resources and optional material.
Gu全域旅游 (2006), Statistical Practice 1, HMS770 Course Notes, Swinburne Bookshop.
Against All Odds (1999), Comap Inc (Video series).

HMA278 Design and Measurement 2
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prequisite: HMA103 Statistics and Research Methods A • Corequisite: NIL • Teaching methods: Lecture/Tutorial or Supported Independent Learning • Assessment: Examinations
A unit of study in the Bachelor of Social Science (Psychology) Bachelor of Social Science; Bachelor of Arts (Psychology and Psychophysiology); Bachelor of Arts; Bachelor of Science (Psychology and Psychophysiology); and Bachelor of Science (Psychology and Biochemistry).

Aims & Objectives
The aims are:
- To introduce you to the statistical package SPSS for Windows (SPSS stands for Statistical Package for the Social Sciences).
- To develop your capacity to carry out independent statistical investigations, together with an awareness of the assumptions and limitations involved with the generalisation of results of such investigations.

On completion of the unit students will be able to:
- Make a clear statement of the objectives of a study.
- Prepare the data for analysis by SPSS for Windows.
- Analyse the data using SPSS for Windows.
- Interpret the results and write a concise report.

Content
The content is divided into two modules and each module is further divided into topics.

Module 1: Using SPSS for Windows for Basic Data Analysis
- Review of basic statistics: providing a framework for the unit of study.
- Introduction to SPSS for Windows: exploiting existing data sets, summarising the distribution of a categorical variable.
- Describing the distribution of a metric variable.
- Describing the relationship between two metric variables.
- Testing significance using Pearson’s r.
- Comparing the relationship between two metric variables for two or more sub-groups.
- Describing the relationship between two categorical variables.
- Testing significance using the chi-square statistic.
- Comparing the relationship between two categorical variables for two or more sub-groups.
- Describing the relationship between a categorical variable and a metric variable.
- Testing significance using t-tests.
- Comparing the relationship between a categorical variable and a metric variable for two or more sub-groups.
**Unit of Study Details**

- Entering your own data into SPSS.
- Module 2: Analysis of Variance
  - Review of variance and t-tests.
  - Introduction to the analysis of variance: the single factor, independent groups design.
  - Using SPSS to produce an analysis of variance.
  - Effect size and power analysis for ANOVA.
  - Reporting an analysis of variance. Analytical comparisons in the single factor independent groups design.
  - Analysis of variance for the single factor within subjects design.
  - Analysis of variance for the completely randomised factorial design.
  - Analysis of variance for the two factor mixed design.

**Reading Materials**

A learning guide for HMA278.

**Textbooks**


Francis, G., Analysis of Variance, Swinburne University, 2003.

**HMA279 Design and Measurement 3**

| 12.5 Credit Points | 1 Semester | 4 Hours per Week | Hawthorn, Sarawak | Prerequisite: HMB110 or HMA103, HMA104, HMB111, HMS102 | Teaching methods: Lecture/Tutorial or Supported Independent Learning • Assessment: Assignments, Examinations |

A unit of study in the Bachelor of Arts (Psychology/Psychophysiology); Bachelor of Science (Psychology and Psychophysiology); and Bachelor of Science (Psychology and Biochemistry)

**Aims & Objectives**

The aims are to provide the theoretical background and practical skills which will enable students to:

- Critically assess statistics presented in journal articles.
- Choose appropriate analyses to perform on your own data.
- Understand the assumptions and limitations involved in the analyses.
- Screen data and, if necessary, transform variables before analysis.
- Perform data analyses using SPSS for Windows.
- Write an informative report on the data analysis.

**Content**

The unit of study content has been divided into topics, and then further divided into sections.

- Module 1: Data Modification and Selection and Data Screening
  - Selecting samples of data in SPSS.
  - Recoding variables and creating new variables.
  - Identifying outliers and out of range values.
  - Removing or replacing outliers and out-of-range values.
- Module 2: Investigating the Relationship between Two Metric Variables
  - Describing the relationship using graphs and summary statistics.
  - Significance testing and power analysis.
  - The theory behind simple linear regression.
  - Testing the assumptions underlying simple linear regression.
  - Using dichotomous variables in regression.
- Module 3: Multiple Regression
  - Multiple regression using SPSS for Windows.
  - Understanding partial and part correlation coefficients.
  - Selecting and using different regression strategies.
  - Presentation of results.
  - Testing the assumptions in multiple regression.
  - Testing for interactions in multiple regression.
- Module 4: Multivariate Analysis of Variance
  - Single factor, independent groups design MANOVA.
  - Single factor within subjects design MANOVA.
  - Testing assumptions and other practical issues.
- Module 5: Factor Analysis
  - The steps involved in factor analysis.
  - Assessing a factor analysis.
  - Performing a factor analysis using SPSS for Windows.

**Reading Materials**

Francis, G., Multiple Regression, Swinburne University of Technology, 2003.


**HMB110 Quantitative Analysis A**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn, Sarawak

Prerequisite: Nil • Teaching methods: Two 1.5-Hour Lectures and One 1-Hour Tutorial per Week • Assessment: Assignment, Examination, Test

A unit of study in the Bachelor of Business (only available to students whose highest level of mathematics does not exceed VCE Further Mathematics).

Note: Students may only receive credit for one of: HMA103, HMA104, HMB110, HMB111 or HMS102.

**Aims & Objectives**

- That students improve their level of numeracy and develop methods of approach in quantitative analysis which can be applied in subsequent areas of their course.
- To provide students with a knowledge of particular mathematical and statistical techniques that will assist them to reach a greater understanding of the quantitative procedures required in various disciplines within the Bachelor of Business and related courses.

**Content**

The unit of study has a business emphasis and is applied in nature. Interpretation and presentation form an integral part of the unit.

Topics covered will normally include the following:

- Presentation of statistical data.
- Measures of central tendency and dispersion.
- Introduction to probability and the normal probability distribution.
- Sampling and sampling distributions.
- Estimation and confidence intervals.
- Hypothesis testing.
- Correlation and linear regression.
- Time series analysis.
- Basic financial mathematics.

**Reading Materials**

Comprehensive student notes will be available from the Swinburne bookshop.

A specialist calculator is required: the Texas TI-83, or approved equivalent.

**Recommended Reading**


**HMB111 Quantitative Analysis B**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn

Prerequisite: Nil • Corequisite: Nil • Teaching methods: Two 1-Hour Lectures and One 1-Hour Tutorial per Week • Assessment: Assignment, Examination, Test

A unit of study in the Bachelor of Business (only available to students with a pass in VCE Mathematical Methods or equivalent).

Note: Students may only receive credit for one of: HMA103, HMA104, HMB110, HMB111 or HMS102.

**Aims & Objectives**

- That students improve their level of numeracy and develop methods of approach in quantitative analysis which can be applied in subsequent areas of their course.
- To provide students with a knowledge of particular mathematical and statistical techniques that will assist them to reach a greater understanding of the quantitative procedures required in various disciplines within the Bachelor of Business and related courses.

**Content**

The unit of study has a business emphasis and is applied in nature. Interpretation and presentation form an integral part of the unit.

Topics covered will normally include the following:

- Presentation of statistical data.
- Measures of central tendency and dispersion.
- Introduction to probability and the normal probability distribution.
- Sampling and sampling distributions.
- Estimation and confidence intervals.
• Hypothesis testing.
• Correlation and linear regression.
• Time series analysis.
• Basic financial mathematics.

**Reading Materials**
Comprehensive student notes will be available from the Swinburne bookshop. A specialist calculator will be required: the Texas TI-83, or approved equivalent.

**Recommended Reading**

**HMS101 Foundation Mathematics**
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Any mathematical subject at VCE level. • Corequisite: Nil • Teaching methods: Lectures (36 hours), tutorials / seminars (24 hours) • Assessment: Assignments, Tests and closed book exam

A unit of study in the Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology) and Bachelor of Business.

**Aims & Objectives**
• To provide students with mathematical knowledge and skills needed to support their concurrent and subsequent engineering studies.
• To provide students with a thorough grounding in mathematics.
• To lay a foundation for further studies in engineering mathematics.

**Content**
Number: calculation, notations, rounding and accuracy, indices, fractions and ratios.

Ensurance and trigonometry: units of measurement, angles, radian and degree measures, classification of triangles, definitions of trigonometric ratios, right-angled triangles, trigonometric functions, inverse trigonometric functions, simple measurement formulas for areas and volumes.

Algebra: general manipulation, transposition of formulas, solution of simple equations and inequations, simple systems of 2 or 3 equations, arithmetic and geometric progressions.

Functions and Graphs: linear functions, power functions, simple polynomials and rational functions, quadratic polynomials (including completing the square, formula), general polynomials, factors, factor theorem, division, algebraic fractions, rational fractions, trigonometric functions and inverses, exponential and logarithmic functions, interpretation of graphs of functions, function modelling.

Differentiation: ideas and simple rules, product, quotient and chain rules, rates, linear approximations and error analysis, simple one-variable optimization, stationary and inflexion points on a curve, introduction to partial derivatives and many-variable optimization.

Integration: ideas and simple rules, including numerical integration, easy substitutions (e.g. linear), use of short tables of integrals, simple areas and volumes.

Note: A graphics calculator will be used extensively in this unit.

**Reading Materials**
Course notes will be available.

**Graphics calculator**

**HMS102 Introduction to Statistics**
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lecture/Tutorials • Assessment: Assignments, Examinations, Tests

A unit of study in the Bachelor of Health Science (Public and Environmental Health), Bachelor of Science (Biochemistry and Chemistry), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Science (Biotechnology/Biochemistry) / Bachelor of Arts (Media & Communications) and Bachelor of Science (Biotechnology/Biochemistry) / Bachelor of Business.

**Aims & Objectives**
• To provide knowledge and skills sufficient to allow students to understand the role of statistics in research.
• To develop skill in the basic methods of data gathering and analysis.
• To provide sufficient background to be able to interpret statistical results in research papers.

To develop sufficient knowledge of probability and probability distributions to support further studies in statistics and operations research.

**Content**
• Displaying and summarising univariate and bivariate data.
• Introduction to probability.
• The normal, binomial and Poisson distributions; simulation of random variables.
• Obtaining data from experiments and surveys.
• Estimating means and proportions.
• Statistical tests using the normal, t, and Chi-square distributions.
• Simple linear regression.

Note: A graphics calculator will be used extensively in this unit of study. A computer package such as Minitab may also be used.

**Textbooks**
Graphics calculator: Texas Instruments TI-83 or equivalent.
A Swinburne-prepared combined text and workbook.

**References**

**HMS111 Engineering Mathematics I**
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: VCE Mathematical Methods or equivalent • Teaching methods: Lectures (36 hours), tutorials / seminars (24 hours) • Assessment: Assignments, Tests and closed book exam

A unit of study in the Bachelor of Engineering (Biomedical Engineering), Bachelor of Engineering (Civil Engineering), Bachelor of Engineering (Civil Engineering) / Bachelor of Business, Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Mechanical Engineering), Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business, Bachelor of Engineering (Robotics and Mechatronics), Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Multimedia (Networks and Computing), Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Biomedical Sciences), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Science (Photonics), and Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunication and Network Engineering).

**Aims & Objectives**
• To provide students with mathematical knowledge and skills needed to support their concurrent and subsequent engineering studies.
• To provide students with a thorough grounding in mathematics.
• To lay a foundation for further studies in engineering mathematics.

**Content**
• Number: Error analysis, binary octal and hexadecimal systems.
• Vectors: Basic operations in 2D, introduction to 3D space, basic vectors in 3D, products, projections.
• Algebra: Equations in one-variable: algebra, graphical solution, numerical solution; inequations in one variable: algebra, graphical solution; transformation of equations and formulae.
• Functions and Graphs: Review of functions and graphs, including polynomials, rational functions and a review of trigonometry, problems of domain, limits, asymptotes, partial fractions, inverse trigonometric functions, hyperbolic and inverse hyperbolic functions.
• Differentiation: Rates, approximations, Taylor polynomials, implicit and logarithmic differentiation, optimisation, detailed graphing including inflection, indeterminate forms, limits.
• Integration: Substitution, parts, general techniques, use of extensive tables, areas, centroids, volumes, arc lengths, surface areas, numerical integration.
• Note: A graphics calculator will be used extensively in this subject.

**Reading Materials**
Course notes will be available.
HMS111P Engineering Mathematics 1P
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Classes (48 Hours), Tutorials/Practice Classes (12 Hours) • Assessment: Assignments, Examinations

A unit of study in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
- To provide students with a thorough grounding in mathematics.
- To develop students' ability to use mathematics with understanding in engineering situations.
- To provide students with the mathematical knowledge and skills needed to support their concurrent and subsequent engineering studies.
- To lay a foundation for further studies in engineering mathematics.

Content
- Number: Error analysis, binary systems, complex numbers.
- Algebra: Equations in one-variable: algebra, graphical solution, numerical solution; inequalities in one variable: algebra, graphical solution; transformation of equations and formulae.
- Functions and Graphs: Review of functions and graphs, including polynomials, rational functions and a review of trigonometry, problems of domain, limits, asymptotes, partial fractions, log-log graphs, inverse trigonometric functions, hyperbolic and inverse hyperbolic functions.
- Differentiation: Rates, approximations, Taylor polynomials, implicit and logarithmic differentiation, optimisation, detailed graphing including inflection, curvature, indeterminate forms, limits and calculator use.
- Integration: Substitution, parts, general techniques, areas, centroids, volumes, arc-lengths, surface areas, numerical integration, improper integrals and calculator use.
- Basic Data Analysis: Graphical and numerical summaries of single variable data, bivariate plots, correlation, least squares regression lines and residual analysis.
- Note: A graphics calculator will be used extensively in this unit.

Reading Materials
Course notes will be available.
Graphics calculator: TI-89 or equivalent.

HMS112 Engineering Mathematics 2
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HMS111 Engineering Mathematics 1 or equivalent • Corequisite: Nil • Teaching methods: Lectures (36 Hours), Tutorials/ Seminars (24 Hours) • Assessment: Assignments, Tests and closed book exam

A unit of study in the Bachelor of Engineering (Biomedical Engineering); Bachelor of Engineering (Civil Engineering); Bachelor of Engineering (Civil Engineering) / Bachelor of Business; Bachelor of Engineering (Electrical and Electronic Engineering); Bachelor of Engineering (Electronics and Computer Systems); Bachelor of Engineering (Mechanical Engineering); Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business; Bachelor of Engineering (Robotics and Mechatronics); Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering); Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering); Bachelor of Multimedia (Networks and Computing); Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies); Bachelor of Science (Biomedical Sciences); Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems); Bachelor of Science (Photonics); Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunication and Network Engineering); Bachelor of Engineering (Electronics and Computer Systems) and the Bachelor of Science (Psychology and Psychophysiology)

Aims & Objectives
- To provide students with the mathematical knowledge and skills that are needed to support their concurrent and subsequent engineering studies.
- To provide students with a thorough grounding in mathematics.
- To lay a foundation for further studies in engineering mathematics.

Content
- Discrete Mathematics: Boolean algebra, switching and logic circuits, simple network analysis, graph theory.
- Linear Algebra: Matrices, determinants, solution of systems of linear equations, matrix inverse, Gaussian and complete elimination.
- Complex numbers: Arithmetic, geometrical representation, cartesian and polar forms, powers and roots, exponential form, fundamental theorem of algebra.
- Vectors Applications: Lines and planes in 3D, angular velocity, torque.
- Curves: 3D scalar co-ordinates, 2D parametric curves, parametric differentiation and antidifferentiation, 3D curves, parametric differentiation and antidifferentiation.
- Surfaces and Partial Differentiation: Standard surfaces as z = f(x,y); relations, parametric forms, 3D scalar co-ordinates, drawing 3D pictures of surfaces and 3D curves, partial derivatives, approximations, optimisation.
- Differential Equations: First order separable, exact, linear, orthogonal trajectories, second order linear with constant coefficients and simple right hand sides.

Note: A graphics calculator will be used extensively in this unit.

Reading Materials
Course notes will be available.
Graphics calculator: TI-89 or equivalent.

HMS112P Engineering Mathematics 2P
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HMS111P Engineering Mathematics 1P • Corequisite: Nil • Teaching methods: Lectures (48 Hours), Tutorials/Practice Classes (12 Hours) • Assessment: Assignments, Examinations

A unit of study in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
- To provide students with a thorough grounding in mathematics.
- To develop students' ability to use mathematics with understanding in engineering situations.
- To provide students with the mathematical knowledge and skills that are needed to support their concurrent and subsequent engineering studies.
- To lay a foundation for further studies in engineering mathematics.

Content
- Discrete Mathematics: Boolean algebra, switching and logic circuits, simple network analysis, graph theory.
- Linear Algebra: Matrices, determinants, solution of systems of linear equations, matrix inverse, Gaussian and complete elimination.
- Complex numbers: Arithmetic, geometrical representation, cartesian and polar forms, powers and roots, exponential form, fundamental theorem of algebra.
- Vectors Applications: Lines and planes in 3D, angular velocity, torque.
- Curves: 3D scalar co-ordinates, 2D parametric curves, parametric differentiation and antidifferentiation, 3D curves, parametric differentiation and antidifferentiation.
- Surfaces and Partial Differentiation: Standard surfaces as z = f(x,y); relations, parametric forms, 3D scalar co-ordinates, drawing 3D pictures of surfaces and 3D curves, partial derivatives, approximations, optimisation.
- Differential Equations: First order separable, exact, linear, orthogonal trajectories, second order linear with constant coefficients and simple right hand sides.

Note: A graphics calculator will be used extensively in this unit.

Reading Materials
Course notes will be available.
Graphics calculator: TI-89 or equivalent.

HMS133 Mathematics for Computing
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures, Tutorials • Assessment: Assignments, Examinations, Tests

A unit of study in the Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
To give students a grounding in those aspects of discrete mathematics and statistics that have application to computing and to explore appropriate computing applications.

Content
• Boolean Algebra: Definitions & applications, simplification & proof, normal forms.
• Number: Binary & other number systems, combinatorial analysis: counting & listing sets, divisors and modular arithmetic.
• Graph Theory: Definitions and representations, shortest paths, critical paths, spanning trees.
• Probability: Probability distributions, e.g. Binomial, Poisson, Gaussian, simulation, random number generation.
• Statistics: Summarising data, the basics of estimation and hypothesis testing, analysing simple experiments such as for two or more independent groups; interpretation of statistical experimental results, simple linear regression.

Reading Materials
HMS132 lecture notes (available from the Swinburne bookshop).
Graphics calculator: TI-83 or TI-83 Plus graphics calculator or equivalent.

Students will need to either own or have extensive access to this calculator. Classes and assessments will be run under the assumption that all students have this calculator.

HMS141 Aviation Mathematics
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisite: Nil • Teaching methods: Lectures/Tutorials • Assessment: 70% examinations, 30% Class Tests.
A unit of study in the Bachelor of Technology (Aviation)); Bachelor of Technology (Air Transportation Management); Bachelor of Technology (Aviation); Bachelor of Business and Bachelor of Technology (Air Transportation Management); Bachelor of Business.

Aims & Objectives
To meet the mathematical and statistical needs of aviation students who are undertaking either the Bachelor of Technology (Aviation) or Bachelor of Technology (Air Transportation Management) degree and may also be undertaking a concurrent Bachelor of Business degree.

At the completion of this unit, students will have an understanding of the basic mathematics of calculus, vectors, linear algebra and complex numbers, along with a grounding in statistics, financial mathematics and the Excel package which will be useful for aviation and business needs.

Content
• Linear Algebra: Linear algebra, matrices and matrix algebra, determinants, systems of linear equations, Gaussian and complete elimination.
• Vectors: Addition, subtraction and scalar products, relative velocity, applications to ground speed, wind speed, airspeed and heading, resolution of forces.
• Calculus: Limits, differentiation, anti-differentiation, definite integral, separable differential equations.
• Complex numbers: Operations, conjugates, modulus, polar form, de Moivre’s theorem, exponential functions.
• Business and Aviation Statistics: Data summary and presentation, basic probability, the normal distribution, estimation and testing hypotheses, correlation and regression.
• Financial Mathematics: Simple and compound interest, nominal and effective rates, present values, future values, annuities, mortgages, net present value, internal rate of return.
• Spreadsheet Applications: Excel programming, analysis and presentation.

Textbooks
Books of student notes will be available from the Swinburne bookshop. A specialist calculator will be required.

References

HMS211 Engineering Mathematics 3A
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HMS112 Engineering Mathematics 2 or equivalent • Corequisite: Nil • Teaching methods: Lectures (36 Hours), Tutorials/Laboratories (24 Hours) • Assessment: Examinations
A unit of study in the Bachelor of Engineering (Mechanical Engineering); Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business; Bachelor of Engineering (Robotics and Mechatronics); and Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
• To introduce students to the computer package Mathematica.
• To provide students with mathematical and statistical knowledge and skills to support their concurrent and subsequent engineering studies.

Content
• Introduction to Mathematica.
• Fourier series: Fourier series expansion, functions defined over a finite interval, differentiation and integration of Fourier series, engineering application.
• Functions of a complex variable: Complex functions and mappings, complex differentiation, complex series, singularities, zeros and residues, contour integration, engineering application.
• Laplace transforms: The Laplace transform, properties of the Laplace transform, solution of differential equations, step and impulse functions, transfer functions, engineering application.
• Applied probability and statistics: Probabilities of random events, random variables, the Central Limit Theorem, important practical distributions, estimating parameters, control charts, Poisson processes and simple queues, engineering application.

Textbooks

References
Ostle, B et al., Engineering Statistics, Duxbury, 1996.

HMS212 Engineering Mathematics 3A
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HMS112 Engineering Mathematics 2 • Corequisite: Nil • Teaching methods: Lectures (36 Hours), Tutorials/Laboratories (24 Hours) • Assessment: Examination and Tests
A unit of study in the Bachelor of Engineering (Mechanical Engineering) and Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business.

Aims & Objectives
To provide students with the mathematical knowledge and skills to support their concurrent and subsequent engineering studies.

Content
• Matrix analysis: The eigenvalue problem, numerical methods, reduction to canonical form, functions of a matrix, engineering application.
• Numerical solution of ordinary differential equations: Initial value and boundary value problems, finite difference methods.
• Vector calculus: Derivatives of a scalar point function, derivatives of a vector point function, line integrals, double integrals, surface integrals, volume integrals, Green's theorem in the plane, Gauss divergence theorem, Stokes theorem, engineering application.
• Note: The Mathematica package will be used in this unit.

Textbooks

HMS213 Engineering Mathematics 3B
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HMS112 Engineering Mathematics 2 • Corequisite: Nil • Teaching methods: Lectures (36 Hours), Tutorials/Practise Classes (24 Hours) • Assessment: Assignments, Examinations, Tests
A unit of study in the Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies).
Bachelor of Engineering (Biomedical Engineering); Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems); Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Electronics and Computer Systems); Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering); Bachelor of Science (Biomedical Sciences); Bachelor of Science (Photonics); and Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunication and Network Engineering).

Aims & Objectives
• To introduce students to the computer package Mathematica.
• To provide students with the mathematical knowledge and skills to support their engineering studies.

Content
• Introduction to Mathematica
• Fourier Series: Fourier series expansion, functions defined over a finite interval, differentiation and integration of Fourier series, complex form of Fourier series, engineering application.
• Laplace Transforms: The Laplace transform, properties of the Laplace transform, solution of differential equations, step and impulse functions, transfer-functions, engineering application.
• Vector Calculus: Derivatives of a scalar point function, derivatives of a vector point function, line integrals, double integrals, surface integrals, volume integrals, Green's theorem in a plane, Gauss's divergence theorem, Stokes' theorem, engineering application.

Reading Materials

HMS214 Engineering Mathematics 4B
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HMS112 Engineering Mathematics 2 • Corequisite: Nil • Teaching methods: Lectures (36 Hours), Tutorial/Practice Classes (24 Hours) • Assessment: Assignments, Examinations, Tests

A unit of study in the Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Engineering (Electrical and Electronic Engineering), Bachelor of Engineering (Electronics and Computer Systems); Bachelor of Engineering (Telecommunication and Internet Technologies); Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering); Bachelor of Science (Photonics); and Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunication and Network Engineering)

Aims & Objectives
To provide students with the mathematical knowledge and skills to support their concurrent and subsequent engineering studies.

Content
• Matrix Analysis: The eigenvalue problem, numerical methods, reduction to canonical form, functions of a matrix, engineering application.
• Functions of a Complex Variable: Complex functions and mappings, complex differentiation, complex series, singularities, zeros and residues, contour integration, engineering application.
• The z Transform: The z transform, properties of the z transform, the inverse z transform, discrete-time systems and, difference equations, engineering application.
• Applied Probability and Statistics: A selection from: Probabilities of random events, important practical distributions, estimating parameters, joint distributions, correlation and regression, goodness-of-fit tests, moment generating functions, statistical quality control, Poisson processes and the theory of queues, Bayes’ theorem, engineering application.

• Note: The Mathematica package will be used in this unit.

Textbooks

HMS215 Engineering Mathematics 3C
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HMS112 Engineering Mathematics 2 or equivalent • Corequisite: Nil • Teaching methods: Lectures (36 Hours), Tutorial/Laboratories (24 Hours) • Assessment: Assignments, Exams and closed book exam

A unit of study in the Bachelor of Engineering (Civil Engineering) and Bachelor of Engineering (Civil Engineering) / Bachelor of Business.

Aims & Objectives
To provide students with mathematical and statistical knowledge and skills to support their concurrent and subsequent engineering studies. After completing the topics below you will be able to:
• Express a periodic function as a Fourier series
• Express a periodic function as a Fourier sine or cosine series.
• Differentiate and integrate Fourier series.
• Solve a partial differential equation using separable variable method.
• Calculate the Fourier transform of a function.
• Explain the properties of the Fourier Transform.
• Apply the Fourier Transform to engineering problems.
• Use Mathematics to do problems in Fourier series and Fourier transform.
• Solve first order and second order initial value problems using Euler and Runge-Kutta methods.
• Apply the finite difference method to solve boundary value problems.
• Summarises data using tabular and graphical methods and summary statistics.
• Show understanding of the addition and multiplication rules for two events by correctly using them to solve simple probability problems.
• Identify situations where the following probability distributions apply and use the appropriate distribution to calculate probabilities using a graphics calculator: Binomial, Geometric, Poisson, Exponential and Normal.
• Create, using MiniTab, and correctly interpret, probability plots (also called Q-Q plots) for normal, exponential and extreme value data. Also use a Q-Q plot to compare the distributions underlying two sets of data.
• Understand and apply the principles of correlation and regression to continuous bivariate data.
• Understand and apply the principles of basic extreme value theory.

Content
• Fourier Series: Fourier series expansion, functions defined over a finite interval, Half-Range Fourier sine and Fourier cosine series, differentiation and integration of Fourier series, method of separable variables to solve partial differential equations.
• Fourier Transform: Definition of integral transform, Fourier integral, properties of the Fourier transform, engineering applications.
• Numerical solution of differential equations: Ordinary differential equations: Initial value and boundary value problems, finite difference methods, and engineering application.
• Applied probability and statistics: Probabilities of random events, important practical distributions, sampling distributions, correlation and regression, extreme value distributions with application to hydrology.

Textbooks

Grahame, N & Richards, D., Engineering Mathematics 3C, Probability and Statistics, FEIS, Swinburne University of Technology.

Texas TI-83 Graphics calculator or equivalent (especially for the Probability and Statistics section).

References

HMS411 Engineering Mathematics 5A
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn, Sarawak • Prerequisite: HMS212 Engineering Mathematics 4A or equivalent • Corequisite: Nil • Teaching methods: Lectures (48 Hours), Tutorial/Laboratories (12 Hours) • Assessment: Assignments, Exams

A unit of study in the Bachelor of Engineering (Mechanical Engineering).
Aims & Objectives
- To provide students with advanced mathematical knowledge and skills to support their concurrent and subsequent engineering studies.
- To discuss the concept of approximation in geometric and engineering applications.
- To examine common numerical methods such as finite element and finite difference techniques, including the strengths and weaknesses of particular applications.

Content

References

LAC100 Computing Fundamentals
12.5 Credit Points • 12 Weeks or equivalent • Lilydale • Prerequisite: Nil • Teaching methods: Lectures (1.0 hours per week) and tutorials (1.5 hours per week) • Assessment: A typical example would be: Assignments 40%, Subject Workbook 20%, Examination 40% • A Stage 1 unit of study in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Lilydale.

Aims & Objectives
- To provide participants with an understanding of what modern computer systems are and why they are the way they are.
- To enhance participants ability to make practical use of computer systems and provide a solid foundation for further learning in other areas of information technology and information systems.
- The knowledge-focused content of this unit will be accompanied by practical activities that are designed to help participants develop introductory skills in research and presentation; and to help them become more effective as self-directed, independent learners.

When a participant has successfully completed this unit they will have demonstrated that they can:
- Use your knowledge of important fundamental concepts underlying the design, construction and operation of contemporary computer systems to answer questions and discuss issues associated with real applications of these systems.
- Use relevant problem-solving skills to develop solutions to simple information technology related problems.
- Develop and present your own considered opinions about some of the issues and challenges that arise in human organisations and cultures as a result of the use of information technology.
- Use simple techniques to researching, summarizing, integrating and presenting technical information about the operation and application of contemporary computer systems.
- Use simple techniques for planning your work and effort so that you can effectively complete tasks and projects.

Content
Computers, Information and Society
- The historical and future development of computer systems.
- The common organisation of contemporary computer systems.
- Society, information and the role of IT 'experts'.

Algorithms
- Characteristics of algorithms.
- Developing and describing algorithms.
- Some common algorithms.
- Big-Oh notation.
- Estimating algorithm efficiency.

Binary Systems
- Characteristics of binary digital systems.
- Bits, words, and binary representations.
- Binary representation of real-world data.
- Binary sampling of dynamic data.
- Binary logic gates.
- Binary logic circuits and devices.

Computer Architecture
- The stored program concept and Von-Neumann architecture.
- Main memory.
- Peripheral devices.

Low-Level Programming
- Software development.
- Machine language programming.
- Assembly languages and translation.

High-Level Programming
- Programming paradigms and programming languages.
- High-level programming.
- Translation - compilers and interpreters;
- Machine-dependence of software.
- The virtual-machine concept.

System Software
- Characteristics of operating systems.
- Types of operating systems.
- Multi-tasking.
- Computer Networks
- Communication concepts.
- Computer networks.
- The Internet, Intranets & the World Wide Web.
- Mobile computing.
- Distributed processing.
- Computation
- Models of computation.
- Unsolvable problems.

Textbooks

References
Snyder, L, 2004, Fluency with information technology, Pearson/Addison Wesley, Massachusetts.

LAC200 Programming
12.5 Credit Points • 12 Weeks or equivalent • Lilydale • Prerequisite: LAC100 Software and Application Development Concepts • Teaching methods: Virtual lectures (1 hr per week) and face-to-face tutorials (2 hrs per week) • Assessment: Assignments 45-55% and examination's 35-55%

A Stage 2 unit of study in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Lilydale.

Aims & Objectives
This unit aims to develop participants understanding and skills in practical software development, especially in the aspects known broadly as design and...
implementation. Participants will become familiar with some of the main ideas that underlie the design and development of computer software using a selected contemporary high-level computer programming language. The content and activities associated with this unit are organised around three themes, a software development theme, a programming language theme, and a programming concepts theme. The unit is designed to explore these themes.

When a participant has successfully completed this unit they will have demonstrated that they can:

- Select and use appropriate strategies and techniques to efficiently design, develop and test a new software product or software component - of simple to medium complexity.
- Select and use appropriate strategies and techniques to effectively carry out software maintenance tasks on existing software products or software components within specified time and resource constraints.
- Use simple record-keeping techniques to maintain detailed and summary data about the time and effort spent on programming projects and tasks, and keep the data in a form that can be easily accessed and used.
- Design and implement software products that effectively use the data item, data structure and object-oriented features of a chosen programming language to model and manipulate real-world data.
- Design and implement software products that effectively use the structured, modular and object-oriented features of a chosen programming language.
- Design and implement software products that effectively use the features of a chosen programming language to implement common data validation data processing and file-processing tasks.
- Design and implement software products that effectively use the features of a chosen programming language to provide a suitable and effective user interface.

Content
- Data and Processing: Literals, variables and constants: Data types. Expressions and statements. Input/output.
- Data Structures: Arrays. Stacks and Queues. Searching and Sorting.
- Data Management: Text files. Binary files. Database programming.

Textbooks

References
Humphrey, WS. 2000, Introduction to the personal software process, 1st edn, 8th printing, Addison Wesley, Massachusetts.
Robertson, LA 2000, Simple program design, 3rd edn, Nelson Thomson Learning, Melbourne.

LAC220 Systems Programming and Architectures
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisites: LAC100 Computing Fundamentals • Teaching methods: Lectures (1 hr per week) and tutorials (2 hrs per week) • Assessment: Assignments 20-40%, tests 10-30% and examination(s) 40-60%

A Stage 2 unit of study in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Lilydale.

Aims & Objectives
This unit extends the basic information technology skills gained in first year computing subjects by examining operating system architectures, administration and programming. These will be developed using UNIX operating system.

The aims of this unit are:
- To provide an introductory course in operating system structures, interfaces and programming environment(s).
- To provide a detailed look at UNIX systems and their administration.

This unit will also provide a solid foundation for further studies and learning in other subjects from the information technology and information systems study streams.

After completing LAC 220 System Programming & Architectures you should be able to:
- Understand the significance in using analyzing tools such as flow charts to design programs.
- Articulate architectural considerations and implications with regards to the UNIX operating system.
- Use the UNIX shell environment to obtain information about the UNIX system you are using.
- Use the UNIX 'yo' editor to create and manipulate files.
- Discuss how UNIX handles system processes via time-sharing and how it allocates the system's resources among users and their applications.
- Make use of UNIX networking capabilities to obtain information about other systems on your network and also the Internet.
- Control the UNIX operating system and produce programs to automate these control tasks in the form of 'shell' scripts.

Content
- Understanding Flow Charting: Flow Charts.
- Shell Scripts: UNIX Shell Fundamentals. UNIX Shell Programming.
- UNIX Utilities/Administration: System Administration. X Window/GUI.

Textbooks

References

LAC300 IT Professional & Ethical Issues
12.5 Credit Points • 12 Weeks or equivalent • 2.5 Hours per Week • Lilydale • Prerequisites: Any three Stage 2/3 units from the Information Technology, Systems and Multimedia Discipline units. • Teaching methods: Lectures/ workshops/tutorials (2.5 hrs per week) • Assessment: eg. Debate 10% and Assignments 90%

A Stage 3 unit of study in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Lilydale.

Aims & Objectives
This unit aims to provide students with a set of methods and models that can be used to examine ethical issues as part of their professional endeavours. Topics include legal, social, ethical and private issues as well as the impact of automation on organisations. Students are encouraged to take a holistic view of ethical issues in information technology, and their impact on individuals, organisations and society in general. Students will also be encouraged to develop their verbal and written communication skills. Hands-on exercises and assignments are used to build upon the concepts introduced in the lecture material.

After completing this unit of study you should be able to:
- Understand the concepts surrounding the study of ethics; its history and relationship to philosophy.
- Review a set of 'tools' that can be used to examine ethical issues.
- Examine the steps or stages in identifying, examining and resolving ethical problems, and evaluate various models that may assist in the process.
- Examine in detail the personal, professional, corporate and communal factors
that influence the process of identifying, examining and resolving ethical issues.

Content
- Introduction to Ethics: Ethical Theory, Philosophical Inquiry.
- Steps in Examining Ethical Problems: Ethical Decision Making Models, Reviewing the Literature.
- Ethical Perspectives: Personal Perspectives, Professional Perspectives, Influential Factors.
- IT Specific Ethical Issues.
- Plagiarism & Referencing: Recognising Plagiarism, When to Referencing.

Textbooks

LAC230 Advanced Programming & Systems Project
25 Credit Points • 12 Weeks or equivalent • 5 Hours per Week • Lilydale
Prerequisite: LAC230 Systems Analysis and Design and LAC200 Programming Note: LAC200 is offered as either LAC200J Programming (Java) or LAC200V Programming (Visual Basic). • Teaching methods: Tutorials (5 hours per week).
A Stage 3 unit of study in the Information Technology, Systems and Multimedia discipline which may be taken in any other degree program at Lilydale.

Aims & Objectives
This unit of study has two components, one is a Programming Project component and the other is a Programming Language component. The Programming Project component, participants will have the opportunity to extend their existing knowledge of a programming language (either Java or Visual Basic) by participating as a member of a team of students carrying out a significant software development project. They will do this in parallel with an exploration of the ideas and processes of software engineering. In the Programming Language component, participants will have the opportunity to develop basic knowledge and understanding of the use of a second programming language (either Java or Visual Basic).

After successfully completing the Programming Project component of this unit you will have demonstrated that you can:
- Use various advanced features of a programming language to effectively meet the requirements of a software product.
- Use software analysis and design techniques to develop a design for a medium sized software project based on a given specification.
- Use the Unified Modeling Language (UML) to document an object-oriented software design.
- Use software engineering methods and techniques in the performance of software development projects.
- Discuss some of the major technical and management issues associated with the development of large-scale software systems.
- Discuss some of the important issues associated with the monitoring and management of software development projects.
- Participate as an effective member and leader of a work-group involved in a team-based software development project.

After successfully completing the Programming Language component of this unit you will have demonstrated that you can:
- Use the components and rules of the chosen programming language to implement a working version of a software product that meets typical quality standards.
- Carry out software maintenance tasks on existing software products or components developed in the chosen programming language.
- Design and carry out a software-testing program for a software product or component developed in the chosen programming language.

Content
- Software engineering products and processes
- Computer Aided Software Engineering (CASE).
- Managing software engineering projects
- Working in software development teams
- System Engineering
- Analysis
- Design
- Testing
- Implementation

Java Programming Language Component
- Introducing programming in Java
- Programming in Java
- Classes and objects
- Arrays
- Inheritance
- Exceptions
- Basic GUI and applets
- File handling
- Dynamic data structures
- More GUI and graphics
- Recursion

Visual Basic Programming Language Component
- Introducing Visual Basic
- VB controls
- Variables, constants & calculations
- Decisions and conditions
- Menus, sub-procedures & sub-functions
- Multiple forms
- Lists, loops & printing
- Arrays
- Classes and Objects
- Data files
- Graphics
- Managing database files

Textbooks

References

Recommended Reading

LAI100 Information Systems Fundamentals
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: NIL • Teaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: quizzes 40% and Examination 60%.

Aims & Objectives
Overall, LAI100 aims to instil an appreciation of how technology can be used to assist business, without the technology becoming an end in itself. In particular, it aims to generate an awareness of the importance of information to decision making, how to provide such information and ensure its usefulness to the decision makers.

After completing LAI100 Information Systems Fundamentals you should be able to:
- Recognise the role and use of technology in business systems and operations.
- Identify and describe organisational structure and business processes within these structures.

Swinburne University of Technology | Undergraduate Course Handbook 2008
• Apply knowledge in the development of a suitable electronic file storage system for a business.
• Demonstrate an understanding of the process in systems design and development.
• Identify the fundamental principles of eCommerce and its application in business.
• Describe several generic business and personal applications of data communications technology.

Content
• Information Systems Fundamentals
• Organising data & Information
• Data Management
• Data Flow Diagrams
• Database Concepts
• Systems architectures
• eCommerce fundamentals
• Informations & decision support systems
• Specialised systems
• Systems development
• Sociological issues

Textbooks

References

LAI210 Database Concepts and Modelling
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
• Prerequisite: LAI100 Information Systems Fundamentals or LAI5100 Software and Application Development Concepts
• Teaching methods: Virtual lectures (1 hr per week) and lab tutorials (2 hrs per week) • Assessment: Assignments (40%), Test (10%) and Examination (50%).

A Stage 2 unit of study in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Lilydale.

Aims & Objectives
This unit extends the basic information technology skills gained in Information Systems Fundamentals LAI100 OR Software & Application Development Concepts LAI5100 to the development of a simple automated personal database update and retrieval system to solve a problem.

After completing this unit of study you should be able to:
• Understand the basic goals & functions of databases, their applications and social impact.
• Describe and give examples of Relational Database Model concepts eg. Primary Key, relational database, referential integrity etc.
• Develop a working relational database with multiple tables using Microsoft Access 2012.
• Illustrate the database and its relationships with a relational schema.
• Understand the basics of query languages and how to manipulate and manage a database using SQL.
• Understand and develop Functional Dependency Diagrams.
• Understand and use Entity Relationship analysis to develop E-R diagrams.
• Describe the Design, Implementation and Maintenance issues associated with databases.
• Understand the concept of Normalisation and be able to normalise tables to 3rd Normal Form.

Content
• Understanding Database Principles: File Systems and Databases. The Relational Database Model.
• Database Modelling: Functional Dependency Diagrams. Entity Relationship Analysis.
• Designing Queries using SQL: Structured Query Language (SQL).
• Database Implementation Issues: Database Implementation and Maintenance.

Textbooks

References
Mannino, M (2004), Database design, application development & administration, McGraw Hill/Irwin, Boston.

LAI230 Management Support Systems
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
• Prerequisite: LAI100 Information Systems Fundamentals • Teaching methods: Lectures (1.0 hour per week) and face-to-face tutorials (2 hours per week) • Assessment: Assignments 30-50%, and examination 50-70%.

A Stage 2 unit of study in one of the Bachelor of Technology streams that may be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
After completing this unit of study you should be able to:
• Understand concepts surrounding organisational structure, management and decision-making processes.
• Comprehend the characteristics and components of information systems.
• Be aware of the characteristics of various types of computer-based systems.
• Have the ability to design, construct and implement management support systems.
• Understand the concepts of data warehousing and data modeling.
• Appreciate the concepts of knowledge-based organisations, the knowledge society, and the impact of management support systems.

Content
• Introduction to Management Support Systems
• Decision Support Systems: DSS Components. DS Methodology.
• Business Intelligence: Data Warehousing. Data Acquisition. Data Mining. Information Visualization.
• DSS Development: Traditional SDLC, Prototyping Development Methodology.
• Intelligent DSS: Artificial Intelligence. Knowledge Acquisition & Validation.

Textbooks
Turban, E, Aronson, J & Liang, T-P 2005, Decision support systems and intelligent systems, 7th edn, Prentice-Hall, New Jersey.

References

LAI240 Electronic Communications and Applications
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
• Prerequisite: LAC100 Computing Fundamentals • Teaching methods: Lectures (1 hr per week) and lab tutorials (2 hrs per week) • Assessment: Assignments 40%, Tests 10% and Examination 50%.

A Stage 2 unit of study in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Lilydale.

Aims & Objectives
The purpose of this unit is to provide participating students with an understanding of how data and information is communicated between computer-based entities, and an understanding of the issues involved in using and developing computerised-network applications. The participants will have an opportunity to develop some beginning-level skills in the analysis and design of simple data communications networks.

Please note that it is not the aim of this unit to provide detailed knowledge or skills relating to any specific network products such as those marketed by particular companies.

After you have successfully completed this unit you should be able to:
• Use an understanding of the fundamental concepts of electronic data communications when you are discussing existing and proposed business applications of electronic data communications.
• Demonstrate a sound understanding of the typical equipment and the technical standards relevant to data communications and computer networks.
• Describe the techniques used for inter-process communication in networked environments.
• Discuss a number of applications of data communications technologies such as Electronic Data Interchange (EDI), Electronic Fund Transfer (EFT), Multimedia content streaming, Client/Server applications, and Internet applications such as the World Wide Web and electronic mail. You should be able to focus your discussion of these applications on issues such as the advantages and disadvantages to users, and the technical challenges presented by such applications.
• Critically analyse a proposed LAN implementation based upon a set of user requirements.
• Identify and choose the basic hardware and software elements required to convert an office of stand-alone desktop computers into a Local Area Network (LAN).

Content
• Wide Area Networks (WANs): Introduction to WANs. WAN Architectures. WAN Services.
• Local Area Networks (LANs): Introduction to LANs. LAN Architectures. LAN Software. Internetworking Technologies.
• Data Communications and The Internet: Introduction to The Internet. Business and The Internet. Internet Addressing and Operation.

Textbooks
References

LAI260 Human-Computer Interaction
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per week • Lilydale • Prerequisite: LAI100 Information Systems Fundamentals plus any one Stage 1 or 2 Information Technology, Systems and Multimedia Discipline units • Teaching methods: Lectures (1.0 hour per week) and face-to-face tutorials (2 hours per week) • Assessment: Assignments 30-50% and examination/s 50-70%
A Stage 2 subject in one of the Bachelor of Technology streams that may be undertaken in any other degree program at Swinburne.

Aims & Objectives
It is difficult to identify any areas of business endeavour that have not been materially impacted by computer innovation. In past decades, when computers were "new," there seemed to be a prevailing attitude that business information systems were constructed to exploit the characteristics of computer innovation, and that users would adapt themselves to the technology. Therefore, most efforts to improve user acceptance and increase individual and organisational productivity focused on promoting computer literacy. But, the lack of success of many systems is now forcing developers to recognise that no matter how technically proficient a new computer-based system might be, it will not be effective if users will not use it, or use it to its fullest capacity.

Human-Computer Interaction (HCI) is an area of endeavour, developed in response to the need to promote user acceptance. HCI attempts to improve user acceptance by examining how people perform work tasks in real-life settings, their attitudes and perceptions, and by incorporating material aspects into system design, especially physical interface design (ergonomics) and software (graphical) user interface design. To borrow a thought from Elaine Weiss (1993), that while there is no dispute over the necessity to make users more computer literate, it is also highly desirable to make computers more people literate. Specifically, in this subject, our aim is to do just that - work to make computers more people literate!
This unit provides students with a series of lectures, tutorial exercises and assignments designed to provide them with opportunities to explore basic Human-Computer Interaction (HCI) concepts.

Objectives
• Examine the foundations of HCI; the human, the computer and the interaction between the two.
• Review the H-CI design process through an examination and application of models related to users, user tasks, information and systems.
• Investigate the tools and processes surrounding the development and implementation of H-CI focused systems, such as common computer platforms and management science tools, implementation and testing procedures and user documentation.

At the end of the unit, successful students should have acquired an understanding of the basic concepts and their application to system analysis and design. Students should also have gained an appreciation of H-CI from the user's perspective.

Content
• Introduction to H - CI: What is ID? Understanding Interaction.
• Design and Evaluation

Textbooks

References

LAI300 Professional Reading and Writing in Technology and Culture
12.5 Credit Points • 12 Weeks or equivalent • 2.5 Hours per Week • Lilydale • Prerequisite: Any three Stage 2/3 units from the Information Technology, Systems and Multimedia Discipline • Teaching methods: Lectures/seminars (2.5 hrs per week) • Assessment: Assignments 70-90% and tests 10-30%
A Stage 3 unit of study in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Lilydale.

Aims & Objectives
You are encouraged to research a significant IS and/or IT area in sufficient detail that the research project and/or report produced is of sufficient quality to be accepted for publication as a part of the Swinburne at Lilydale working paper series or conference. You will also learn the principles involved in literature analysis and research approaches, and proposal development.

After completing this unit of study you should be able to:
• Understand the different approaches/methods for research.
• Carry out a literature survey.
• Review Literature.
• Explore some of the latest Information Systems/Technology issues from a variety of practically-oriented perspectives.
• Communicate to others the true role of each of the trends covered in the modern business environment.
• Explain the concepts and practices typically used in the industry to influence and guide the actions of others.
• Relate the trend theories to practice, and discuss sensibly the implications of these issues in your day-to-day life

This understanding of current issues in information systems and information technology will also aid in the understanding of other disciplines studied in the Swinburne University, Lilydale degree programs, as well as providing a strong philosophical and academic foundation for later vocational study of information technology and systems engineering. You will also specialise on a topic of your choosing as a research and/or practical project.

Content
• Introduction to Research
• Plan of Investigation.
Aims & Objectives
Upon successful completion of this unit of study you should be able to:
• Define and discern the major characteristics of the business and organisational context within which eCommerce takes place and describe how eCommerce differs from eBusiness.
• Evaluate a range of business strategies or models for marketing, supply chain management, retailing, online services, auctions, portals and virtual communities.
• Have some familiarity with the technical or physical components of computer networks, and the major issues surrounding network and data security.
• Be aware of the legal, ethical, and regulatory frameworks that impact on the operation of eCommerce systems.

Content
• Networks and Infrastructure for eCommerce. The Internet. The infrastructure. The Internet and the World Wide Web. Electronic Payment Systems.
• Strategies for Web Auditions, Portals and Virtual Communities.
• eCommerce Future Developments

Textbooks

References

LAM270 Multimedia Tools and Concepts
12.5 Credit Points • 12 Weeks or equivalent • 3.5 Hours per Week • Lilydale • Prerequisite: LAM100 Software and Application Development Concepts and LSM100 Tests and Concepts • Teaching methods: Lecture (1.5 hr) with a weekly lab / tutorial (2 hr) • Assessment: eq. Assignments 50%, Examination 50% A Stage 2 unit of study in the Information Technology, Systems and Multimedia Discipline that may be undertaken in any other degree program at Lilydale.

Aims & Objectives
With the growing popularity of the internet and various computing and communications technologies, many opportunities have evolved for communicating information using multimedia. This subject allows students to gain an insight into the concepts and skills required to design, plan and produce multimedia applications.
It also aims to develop an in depth understanding of the broader considerations of multimedia development, including social awareness, copyright issues and product marketing.

This unit challenges you to discover answers to a range of questions, including:

- What is multimedia?
- How can I use multimedia to communicate information effectively?
- What do the concepts of interactivity, intuitiveness and seamlessness mean? Why are they important? When should they be used?
- Understanding the concepts of colour theory, typography, image balance and unity and how they can affect the design process?
- The importance of defining your audience, and how important it is to your final design?
- Understanding the types of multimedia tools available and choosing the right tool for the right application?
- What are the building blocks of developing games, and why it’s uniquely different to most other multimedia applications?
- Understanding the various multimedia production phases?
- Why is documentation and testing so important?
- How does copyright affect the production of multimedia applications?

**References**


Lindsay, J, Pejusa, P & Shuman, J 2003, Macromedia Flash MX: complete design professional, Thomson Course Technology, Massachusetts.


**LAM290 Multimedia and Web Design**

12.5 Credit Points • 12 Weeks or equivalent • 3.5 Hours per week • Lilydale • Prerequisite: LASM100 Software and Application Development Concepts and LASM100 Texts and Contexts • Teaching methods: A weekly virtual lecture (1.5 hrs) with a weekly lab/tutorial (2.0 hrs) • Assessment: eg. Assignments 50%, Examination 50%.

A Stage 2 unit of study in the Information Technology, Systems and Multimedia Discipline that may be undertaken in any other degree program at Lilydale.

**Aims & Objectives**

This unit expands on the basic information and technology skills gained within the two pre-requisite units (Software and Application Development Concepts - LASM 100 and Texts and Contexts - LASM 100). By using a project-based format and starting with a basic understanding of HTML, this unit then introduces the functionality of web page programming to achieve greater interactivity and functionality. Several different technologies and techniques for web page programming will be explored, and associated issues examined.

This unit challenges you to discover answers to a range of questions, including:

- What is the role of a website?
- How can I use a website to communicate effectively?
- How do I define the website’s audience?
- How does culture affect the usability of a website?
- What are the qualities that define an effective website?
- What is the process for designing, developing and delivering a website?
- How can I use industry standard development tools to build a website?
- How can I use a variety of media, including audio, animation, and video in my websites?
- How can we ensure a website is functional?
- Why is planning and testing so important?
- What is the difference between client-side design and server-side design?
- What additional features can advance internet programming languages offer to a website?

**Content**

- Spinning A Web: Types of Websites, Audience Awareness, Internet Trends.
- Web Site Administration: Web Maintenance and Mastery. Advance web languages.

**Textbooks**


**References**

Campbell, M 2005, Web design garage, Pearson Education.


Duckett, J 2004, Beginning web programming with HTML, XHTML, and CSS, John Wiley and Sons, Indianapolis.

Knuckles, CD & Yuan, D 2005, Web applications: concepts and real world design, John Wiley and Sons.

**LAM300 IMM Production and Project (A & B)**

25 Credit Points • 2 Semesters • 3 Hours per week • Lilydale • Prerequisite: Any three of: LAM290 Multimedia Tools and Concepts, LAM290 Multimedia and Web Design, LAM290 Web as a Medium of Communication. Teaching methods: Lectures (1 hr per week) and tutorials (2 hrs per week) • Assessment: eg. Assignments 70%, Presentation 10% and Tests 20%.

A Stage 3 unit of study in the Information Technology, Systems and Multimedia Discipline that may be undertaken in any other degree program at Lilydale.

**Aims & Objectives**

This unit challenges you to undertake a significant multimedia project and to discover the realities of the multimedia production process. During the unit you will be faced with a number of challenges and difficulties as well as surprising successes and failures that will be an important part of your learning. As you progress through the development process and this unit, you will find the answers to a range of questions, including:

- What is the role of the project manager in a multimedia production project?
- Why should the scope, cost and time frame for the project be defined?
- How do communication theory and the concepts of human computer interaction affect the multimedia production process?
- How and why should the purpose of a multimedia application be defined?
- What factors affect the purpose of a multimedia application?
- What factors are there in the design aspect of multimedia production?
- What role does testing play in multimedia development?
- Why are file and asset management skills important?
- What do the terms functionality and usability mean? How can they be employed?

This unit is a challenging, diverse and interesting subject that will require your ongoing commitment in time and energy. You will be expected to approach the unit with a mature, disciplined attitude and to ensure that you are an effectively functioning part of your team. A good outcome in this unit is directly dependent on your willingness to develop and apply skills in multimedia and other fields.

**Content**

- Definition is the Key: Theories of Design/The Refreshes. Communication. Project Development.
- Creation of your monster: Developing the skin. Design options.
- Adding shine.
Aims & Objectives

The aim of this unit is to enable students to understand the nature and principles of systems analysis and design. You will learn the main methods of system development, project management, software engineering, and project management concepts from a variety of practically-oriented perspectives.

Content

• Understanding Systems Development: System Thinking. Systems Engineering.
• Software Re-use and Re-engineering: Component Based Development. Business Process Re-engineering. Software Re-engineering.

Teachings and Learning Methods

• Teaching methods: Weekly Workshop (1.5 hrs per week) and tutorials (1.5 hrs per week).
• Assessment: Assignments 55-75% and examination(s) 25-45%

Teachings and Learning Materials

1. Textbooks

   Textbooks
   Madsen, R & Wingfield, B 2004, Team building: an exercise in leadership. 4th edn, Crisp Learning, California.

   References
   Tannenbaum, R 1995, Theoretical foundations of multimedia, WH Freeman and Company, USA.

   LAS100 Software and Application Development Concepts

   12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale

   Prerequisite: Nil • Teaching methods: Weekly Workshop (1.5 hrs) with a weekly lab/tutorial (1.5 hrs) • Assessment: Assignments 55-75% and examination(s) 25-45%

   A Stage 1 unit of study in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Lilydale.

   Aims & Objectives

   This unit surveys the different types of systems, the importance of information collection and analysis, the software engineering lifecycle, analysis and design concepts, interface design and testing strategies, and re-engineering as well as concentrating on programming, implementations and maintenance activities. Software engineering is also discusses in some detail regarding the management of the development process.

   This unit provides students with a series of workshops, exercises and assignments designed to give opportunities to explore basic software engineering concepts from a variety of practically-oriented perspectives.

   Particular emphasis is given to:

   • Systems development principles and life cycles.
   • Theoretical foundations for software engineering.
   • Development software systems.
   • Software quality.
   • Principles of programming (using HTML as the primary language).

   At the end of the unit, the successful students will have acquired an understanding of key software and application development concepts and their application to modern computing, and a range of business applications.

   Textbooks


   References

   Bell, D 2000, Software engineering a programming approach, 3rd edn, Addison-Wesley, New York.

   LAS200 Systems Analysis and Design

   12.5 Credit Points • 12 Weeks or equivalent • 4 Hours per Week • Lilydale

   Prerequisite: LAS100 Software and Application Development Concepts and preferably LAI210 Database Concepts and Modelling • Teaching methods: Lectures (1.5 hrs per week) and tutorials (2.5 hrs per week) • Assessment: Assignments 35-55%, team leader roles 5-25% and examination(s) 40-60%

   A Stage 2 unit of study in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Lilydale.

   Aims & Objectives

   The aim of this unit is to enable students to understand the nature and principles of systems analysis and design. You will learn the main methods of Soft Systems Methodology and Object-Oriented (UML) system development and how to apply these methods to the construction of business systems.

   Content


   Textbooks


   References

   Hughes M 2000, Mastering systems analysis and design, MacMillian, Basingstoke.


   LAS310 IT Strategies and Project Management

   12.5 Credit Points • 12 Weeks or equivalent • 2.5 Hours per week • Lilydale

   Prerequisite: Any three Stage 1 units from the Information Technology, Systems and Multimedia Discipline units • Teaching methods: Lectures (1 hr per week) tutorial (1.5 hrs per week) • Assessment: eg. Assignments 25%, Tests 25% and Examination 50%

   A Stage 3 unit of study in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Lilydale.

   Aims & Objectives

   This unit provides students with a series of workshops, exercises and assignments designed to give opportunities to explore Information Technology Strategies and Project Management concepts from a variety of practically-oriented perspectives.

   Particular emphasis is given to:

   • Systems development principles and life cycles.

   • Develop an understanding of competitive IT advantage.

   • Analytical methods to help identify areas in need of strategic planning.

   • Developing strategies using a number of frameworks.

   • Project management risk and quality management.

   • Project scope, scheduling and budget.

   • Project evaluation and closure.

   At the end of the unit, the successful student will have acquired an understanding of key Information Systems/Technology development and management issues and their application to modern computing and business.
Content
- Business Models and Information Technology (IT).
- Managing IT for Competitive Advantage.
- Assessment/Strategy.
- The Nature of IT Projects.
- Project Management Scope and Project Estimation.
- Managing Project Risk.
- IT Project Quality Management.
- The Project Charter and Baseline Project Plan.
- The Human Side of Project Management.
- The Project Schedule and Budget.
- Project Communication, from Tracking to Evaluation.

Reading Materials

References

LBC100 Accounting 1
12.5 Credit Points • 12 Weeks • 3.5 Hours per Week • Llydale • Prerequisite: Nil • Teaching methods: Lectures (2 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Tests (50-40%), Assignments (15-25%), Examinations (50-70%)

A Stage 1 unit of study in Bachelor of Business (Accounting) which may also be taken in any other degree program at Llydale.

Aims & Objectives
LBC100 has two broad aims. The first is to provide a framework for students to learn basic accounting concepts and show how these concepts can be applied to financial statements that provide useful information for business evaluation and decision making. The second aim is to help students develop generic skills used in business, as well as in the accounting profession, thereby providing preparation for lifelong learning.

On completion of the course students should be able to:
- Describe the purpose and relevance of the main areas of accounting namely financial accounting, management accounting and management accounting.
- Apply relevant accounting concepts to simple business scenarios.
- Describe the effect of business transactions on the key elements and components of the three main accounting reports.
- Analyse and interpret the information contained in Income Statements, Balance Sheets and Cash Flow Statements, having particular regard to business profitability, working capital management and financing.
- Understand simple cost concepts and their relevance to small business management.
- Apply basic accounting, accounting techniques in order to provide solutions to simple business decisions.
- Begin developing an awareness of, and commitment to, the ethical behaviour expected of professional accountants.
- Apply generic skills relevant to business and the accounting profession so as to make a contribution to lifelong learning (see detailed objectives in the later section Teaching/Learning Method).

Content
Accounting theory and practice are examined in an historical cost accounting system. The unit includes the following topics:
- As an introduction to accounting and financial statements.
- Revenue and expenses.
- Assets and liabilities.
- Cost classification.
- Cash flow statements.
- Internal performance evaluation.
- Working capital management.
- Capital structure and leverage.
- Cost flow, profit analysis.
- Planning and evaluating merchandising activities.

Module 1 - Financial Accounting Information:
- Topic 1.0 Overview of accounting information
- Topic 1.1 Operating results and business financial position
- Topic 1.2 Financial effect and implications of business transactions
- Topic 1.3 Cash Flow Statements and cash analysis

Module 2 - Financial Management Information:
- Topic 2.1 Profitability
- Topic 2.2 Working Capital Management
- Topic 2.3 Risk and External evaluation

Module 3 - Management Accounting Information:
- Topic 3.1 Cost volume profit analysis
- Topic 3.2 Cost accounting and reporting systems
- Topic 3.3 Cost analysis for planning and control

Textbooks
LBC100 Learning Guide, Swinburne, this is updated each year.

Recommended Reading

LBC101 Accounting Fundamentals
12.5 Credit Points • 12 Weeks or equivalent • 3.5 Hours per Week • Llydale • Prerequisite: Nil • Teaching methods: Lectures (2 hrs per week), Tutorials (1.5 hrs per week) • Assessment: Unit One test (15%), Unit Two test (15%), Team assessment (20%), Final examination, (50%)

A Stage 1 unit of study in the Bachelor of Business (Tourism and Management).

Aims & Objectives
This unit provides non-accounting majors with a basic introduction to the fundamentals and techniques of accounting, with particular emphasis on using financial information for business decision-making.

LBC101 has two broad aims. The first is to provide a framework for students to learn basic accounting concepts and show how these concepts can be applied to financial statements that provide useful information for business evaluation and decision making. The second aim is to help students develop generic skills used in business, thereby providing preparation for lifelong learning.

- Describe the purpose and relevance of the main areas of accounting namely financial accounting, management accounting and management financial (sometimes known as business finance).
- Apply relevant accounting concepts to simple business scenarios.
- Describe the effect of business transactions on the key elements and components of the two main accounting reports.
- Prepare simple Income Statements and Balance Sheets from summarised information.
- Understand simple cost concepts and their relevance to small business management.
- Apply two basic management accounting techniques (the cost-volume profit model and margins analysis) in order to provide solutions to simple business decisions.
- Understand the essential principles of cash budgeting and prepare a simple cash budget.
- Analyse and interpret the information contained in Income Statements and Balance Sheets, having particular regard to business profitability, liquidity and
financial risk.
- Begin developing an awareness of, and commitment to, the ethical behaviour expected of professional accountants.
- Apply generic skills relevant to business so as to make a contribution to lifelong learning.

Content
- Budgeting: Introduction to cash budgeting.

Reading Materials
LBC101 Learning Guide, Swinburne, this is updated each year

Recommended Reading
LBC200 Computer Accounting Systems
12.5 Credit Points • 12 Weeks or equivalent • 3.5 Hours per Week • Lifydale • Prerequisite: LBC100 Accounting 1 • Teaching methods: Lectures (2 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Computer based assessments 15%, Computer based practice sets 0%, Output from VAULT tasks 10%, Pine furniture practice set assignment 16%, Formal examination 60%
A Stage 2 unit of study in the Bachelor of Business (Accounting), which may also be undertaken in any other degree program at Lilydale.

Aims & Objectives
The broad objective of this unit is to familiarise you with the accounting process as a flow of information to provide the basis from which management control and decision making stems. Specific objectives of LBC200 Computer Accounting Systems are to:
- Challenge students to develop a rigorous technical foundation for further studies in accounting.
- Provide students with a framework for exploring computer based accounting systems from a user and a design perspective, as a preparation for a career in business.
- Extend students' generic skills and enhance the quality of their use of these skills in the context of business, including moving towards a personal commitment to lifelong education.

On completion of your study of Computer Accounting Systems you will be able to:
- Think of accounting as an operating system that transforms raw data (input) from economic transactions into reports (outputs) that meet the needs of clients.
- Design key features of accounting systems and monitor the working of systems.
- Use VAULT computer accounting system with competence and reflect on its characteristics and how it embodies the accrual accounting model.
- Understand the purpose and describe the structure of computer accounting system modules for the management of cash, sales, customers and suppliers.
- Set up and use VAULT computer accounting system for specialised accounting functions carried out in system modules.
- Describe the reasons for cash control techniques and prepare bank reconciliations.
- Read and analyse computer accounting system output.
- Review and extend your knowledge of accrual accounting, in particular balance day adjustments and end of period procedures.
- Extend the concept of owner's equity and liabilities to the context of companies.
- Understand a range of valuation methods for inventory and fixed assets and describe the importance of sound asset management.
- Develop generic skills relevant to the accounting profession and lifelong learning.

Content
The componentised processing of information is examined and an accounting package for microcomputers is used to facilitate same. The accounting equation is re-examined in order to prepare the balance sheet and profit and loss statement. The control of cash, debitors, stock and fixed assets are included, as are balance day adjustments and bank reconciliation statements. The internal control implications of aspects of accounting systems are also assessed.

Module 1: Accounting as an Information System
- Take a New View: Accounting as a computer information system, systemic thinking three perspectives on your role as an accounting professional.
- Understand the Key Drivers: The accounting equation, double entry, and chart of accounts.

Module 2 Computer Accounting Systems Modular Structure:
- Preparation for recording transactions: Goods and Services Tax, impact on accounting records.
- Monitor the livelihood of business: Cash, cash control, bank reconciliation.
- Handle Masses of Detail: Specialised modules in the computer accounting systems.
- Valuation of stock and safeguarding of fixed assets: Analysing reports and exciting user needs.
- Is that figure really profit?: Recognition and matching adjustments on balance day.

Module 3 Designing and Re-engineering of System Modules:
- Together system elements form the Accounting System: Master files, maintenance files and data entry.
- Re-engineer for relevance, timelines and understandability.
- Fine Tuning for Accuracy and Company Structure.
- Composition of fund sources for companies: Shares and debt instruments, appropriation of profit.

Reading Materials
LBC200 Learning Guide, Swinburne, this is updated each year
This unit of study seeks to introduce students to the practice of corporate accounting. By examining a broad-based understanding of financial statements, students will become familiar with the practical implementation and application of accounting rules in a corporate environment. On successful completion of this subject, students should be able to understand, describe and account for a range of topics covered in the Bachelor of Business (Accounting) which may also be undertaken in any other degree program at Swinburne University of Technology.

Aims & Objectives
This unit seeks to introduce students to the fundamental principles and practice of corporate accounting. By examining a broad-based selection of topics that broadly correspond with the life-cycle stages of a company’s existence, students will become familiar with the practical implementation and application of accounting rules in a corporate environment. On successful completion of this subject, students should be able to understand, describe and account for a range of financial events likely to be encountered in a corporate setting.

Content
The unit covers the following general topic areas:
- Corporate entities.
- Accounting for shares and debentures.
- Accounting for dividends and reserves.
- Acquisition of assets.
- Accounting for corporate investments: joint arrangements, consolidation accounting.
- Liquidation and winding-up.

Textbooks

References

LBC202 Management Accounting I
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBC100 Accounting 1, LBC200 Computer Accounting Systems • Teaching methods: Lecture, Tutorial, Exercises, Assignments • Assessment: Test on Modules 1: 30%; Test on Module 2: 30%; Test on Modules 3 & 4: 40%

A Stage 2 unit of study in the Bachelor of Business (Accounting) which may also be undertaken in any other degree program at Swinburne University of Technology.

Aims & Objectives
To introduce students to the role of accounting in the planning and decision-making functions of the management process.

Content
Topics covered include:
- Basic cost concepts, cost-volume-profit analysis, cost allocation issues, budgeting, profitability analysis, and the analysis of costs for decision-making.
- Throughout the subject students will be encouraged to:
  - Utilise microcomputer-based techniques for solving problems.
  - Focus on the relevance of accounting information to management information needs.
- To critically evaluate traditional management accounting theory and practice against the contemporary literature on activity-based costing and the new technologies.

References
Journals and Reports: Business Review Weekly
Financial Review Daily Newspaper
Harvard Business Review
Journal of Accounting, Organisations and Society
Journal of Cost Management
On-line Resources:
www.imanet.org Institute of Management Accountants (United States of America)
www.icpaust.com.au Australian Society of CPAs
www.icaa.org Institute of Chartered Accountants in Australia
http://AAA-edu.org American Accounting Association
www.icaew.co.uk UK Professional Accounting body

Recommended Reading

LBC203 Computer Cost Accounting Systems
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBC100 Accounting 1, LBC200 Computer Accounting Systems, LBC202 Management Accounting I • Teaching methods: Lecture, Tutorial, Exercises, Assignments • Assessment: Major assignment 35%, Final exam 65%. Hurdle requirements: a score of at least 40% on the final exam.

A Stage 2 unit of study in the Bachelor of Business (Accounting) which may also be undertaken in any other degree program at Swinburne University of Technology.

Aims & Objectives
To understand the characteristics and purposes of the main types of cost systems and how they provide information for costing products and services, for measuring the performance of managers and business segments and for making strategic decisions.

Content
Topics covered include job order costing, overhead and activity-based costing, process costing, costing in the service industries, standard costing, product costing and performance measurement in Just-in-Time systems, performance evaluation of business units, transfer pricing and cost of quality programs. A management information perspective will be taken and students will be encouraged to use computer-based tools for problem-solving.

Recommended Reading
Hensee, DR & Mowen, NM, Cost management: accounting and control, latest edn, South-Westem, Ohio.

LBC204 Financial Management 1
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBC100 Accounting 1 • Teaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Mid Semester Test 20%, Assignment 20%, Final Examination 60%

A Stage 2 unit of study in the Bachelor of Business (Accounting) which may also be undertaken in any other degree program at Swinburne University of Technology.

Aims & Objectives
This unit focuses on the goals and functions of corporate financial management. It is designed to enable you to acquire:
An understanding of the scope and nature of the finance function and its role within corporate management;

An understanding of the theory of finance and how it underpins the evaluation of investment, financing and dividend policies;

Practical skills in the identification and analysis of financial problems;

A basic understanding of the major sources of corporate finance

After completing LBC204 Financial Management you should be able to:

Discuss corporate goals and explain how conflicting agendas may hinder their achievement;

Review and evaluate independent and mutually exclusive investment projects;

Calculate and evaluate the value of shares and debentures and determine an organisation’s cost of capital;

Discuss sources of business finance and the respective advantages and disadvantages of each;

Review and evaluate the use of lease finance in investment projects;

Discuss the issues surrounding the determination of a firm’s capital structure.

Content


• Module 2 Cost of Capital: Risk and Return. Cost of Capital.


Recommended Reading


LBC300 Accounting Theory

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale

Prerequisites: LBC100 Accounting 1, LBC200 Computer Accounting Systems, LBC201 Corporate Accountancy, LBC202 Management Accounting 1, LBC203 Computer Cost Accounting Systems, LBC204 Financial Management 1 • Reaching methods: Lectures and Tutorials • Assessment: Team assignment 25%, Individual assignment 15%, Final examination 60%

A Stage 3 unit of study in the Bachelor of Business (Accounting) which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives

LBC300 is a 'capstone' accounting unit that draws upon knowledge gained from earlier accounting units. In particular, students are required to apply and demonstrate insights derived from the areas of corporate accounting, management accounting and financial management. The unit seeks to instill in students a critical appreciation of both theory in accounting and contemporary accounting practice. It does this by locating the discipline of accounting into a wider context than that normally associated (or possible) with earlier accounting units. The unit will provide you with an understanding of various theoretical perspectives and the application of Accounting Standards and other pronouncements to some important financial accounting problems. On successful completion of this unit, students should be able to understand, discuss and critically analyse a range of issues pertaining to financial accounting theory and regulation.

Content

Although individual topic areas can vary, the unit syllabus typically embodies the following general pattern of topic coverage:

• External reporting environment

• Theory in accounting: general introduction

• Theory in accounting: some specific theories

• Theory in accounting: the Conceptual Framework

• Accounting for income tax (Part A)

• Accounting for income tax (Part B)

• Non-current assets: overview and depreciation

• Non-current assets: revaluation and impairment testing

• Accounting for intangible assets

• Accounting for leases

• Segment reporting

• Earnings per share

References


Woodward-Know, R 1996, Writing in commerce, University of Newcastle, Sydney.

Recommended Reading


LBC300 Learning Guides, 2007, Swinburne University of Technology, Lilydale.

LBC301 Taxation

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale

Prerequisites: LBC100 Accounting 1, LBC200 Computer Accounting Systems, LBC201 Corporate Accountancy, LBC202 Management Accounting 1, LBC203 Computer Cost Accounting Systems, LBC204 Financial Management 1 • Reaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Mid-semester test 15%, Assignment 25%, Final exam 60% A Stage 3 unit of study in the Bachelor of Business (Accounting) which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives

The overall unit objective is to develop in students an understanding and awareness of the income Tax Assessment Act and its complexities, together with those acts which are complementary to the Assessment Act such as related legislation and relevant case law. Specifically, the course will:

• Familiarise students with recent court and Administrative Appeals Tribunal decisions in the areas of income taxation.

• Develop analytical and problem solving skills in developing arguments for the solution of practical problems and case studies.

• Develop research skills in students in relation to current and landmark taxation cases.

• Develop in students the ability to demonstrate and apply an understanding of the practical and theoretical issues of income, capital and deductions for various taxable entities.

Content

Topics covered include the nature of assessable income, specific income types, source, residency and derivation, eligible termination payments, capital gains tax, allowable deductions and the provisions relating to companies, partnerships, individuals and an introduction to fringe Benefits Tax.


• Capital Gains Tax.


• Module 3 Taxable Entities: Taxation of Individuals and Partnerships. Taxation of Companies and Shareholders.

• Module 4 Other Taxes: Introduction to fringe Benefits Tax

References

Australian Tax Cases. CCH Australia Ltd, electronic edition - Available through Swinburne library databases. (Link will be made available on the blackboard web page or can be accessed by way of the A.T.O. website).

Baroczy, S. Australian Tax Casbook, CCH Australia Ltd, latest edn.


Recommended Reading

LBC201 Taxation Learning Guide. This is made available progressively during the semester online through the LBC301 blackboard web page.

LBC302 Auditing
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBC100 Accounting 1, LBC200 Computer Accounting Systems, LBC201 Corporate Accounting • Teaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Mid Semester Test 15%, Assignment 25%, Final Examination 60%
A Stage 3 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The broad aim of this unit is to familiarise you with the underlying concepts and objectives of auditing and the subsequent reporting function of the auditor. The unit covers both theoretical and practical aspects of auditing and in particular aims to integrate the concepts of auditing with practical approaches taken by the auditor to ensure you gain a complete picture of the audit process.

After completing LBC 302 Auditing you should be able to:
• Explain the role and responsibilities of the auditor.
• Discuss the importance of an effective system of internal control within the audit process.
• Demonstrate an understanding of the audit process and the need for financial report audits.
• Explain the reporting requirements of a financial report audit.
• Explain the ethical issues that accountants and auditors face.
• Discuss the other functions that auditors may provide to an organisation.

Content
• Module 3 - Completion of the Audit: Audit Reports.
• Module 4 - Audit Considerations: Electronic Commerce and Auditing.

Recommended Reading

LBC304 Personal Investment Issues
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBC100 Accounting 1, LBC204 Financial Management 1 • Teaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: eg. Individual Assignment 20%, Partnered Assignment 10%, Group Assignment 20%, Final Examination 50%
A Stage 3 unit of study in the Bachelor of Business (Accounting) which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The purpose of this subject is to help participants learn how to manage their money and develop the skills to be better able to advise others in managing their investments. To achieve this purpose it is important to learn about investment alternatives available today and more importantly, to develop a way of thinking about investments that will remain in the years ahead when new investment opportunities arise as a result of the inevitable changes to our financial system. More specifically, the unit aims are:
• To acquaint participants with the various avenues for the investment of funds, and the respective advantages and disadvantages of each.
• To review the process of portfolio selection and ongoing investment strategies.
• To review the characteristics of financial futures and options and how they may be used to modify the risk-return profile of investment portfolios.

After completing LBC304 Personal Investment Issues you should be able to:
• Describe the various personal investment alternatives currently available in the Australian market.
• Explain each of the personal investment alternatives and discuss the respective advantages and disadvantages of each.
• Discuss how an investor may alter their risk profile with the use of different investment alternatives.
• Discuss the impact on personal investment strategies of issues such as taxation, economic conditions and information resources currently available.
• Explain the issues that need to be considered with regard to retirement and estate planning.

Content

Recommended Reading

LBC306 Strategic Financial Management
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBC100 Accounting 1, LBC204 Financial Management 1 • Teaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: eg. Individual Assignment 20%, Group Assignment 30%, Final Examination 50%
A Stage 3 unit of study in the Bachelor of Business, which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This unit aims to develop student understanding of financial and cost management issues currently being faced by organisations and to consider potential solutions to the problems they face. In general terms the aim of the subject is to encourage student questioning of current financial management practices being undertaken by Australian organisations.

After completing LBC 306 Strategic Financial Management you should be able to:
• Discuss the historical goals and foundations of financial management and their validity in the current business environment.
• Discuss and explain the need for sound corporate governance and develop approaches to meet this need.
• Examine financial management processes and practices and evaluate their effectiveness and use.
• Discuss the role of financial management in a global corporation.
• Review and explain the current issues facing businesses in their aim of achieving sound financial management including executive compensation, merger and acquisition, and the role of financial management in avoiding business failure.

Content

Recommended Reading

**LBE100 Microeconomics**
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: Lectures (2 hrs per week) and tutorials (1 hr per week) • Assessment: Assignment (10%), two Short Tests (2 x 10%), essay test (10%), workshop problems (10%), Examination 50%
A Stage 1 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**
LBE100 Microeconomics has two broad aims.
- To help students understand some of the basic tools and concepts of microeconomics and to apply those tools and concepts to a variety of economic issues faced by individuals, business, non-profit organisations and government.
- To help students develop expertise in using an analytical approach to problem-solving which will benefit them in their personal and professional lives.

Microeconomics students should be able to:
- Appreciate the nature and significance of the key economic concept of opportunity cost and its relevance in a variety of contexts.
- Understand a range of economic concepts and their relevance to your personal and professional decision-making.
- Understand and use graphical representations and economic models.
- Evaluate newspaper articles dealing with micro-economic issues.
- Apply economic concepts and reasoning to real-world issues facing government, business and consumers.
- Contribute to the ongoing debate about economic issues of interest to you.

**Content**
- Price and Output Determination in Alternative Market Structures: Monopoly, Monopolistic Competition, Oligopoly.

**Reading Materials**

**LBE200 Macroeconomics**
12.5 Credit Points • 12 Weeks • 3 Hours per Week • Lilydale • Prerequisite: LBE100 Microeconomics • Teaching methods: Lectures (2 hrs per week) and tutorials (1 hr per week) • Assessment: Four Short Tests 10%, Examination 60%
A Stage 2 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**
LBE200 Macroeconomics has two broad aims. The first is to help students to develop a basic understanding of the main concepts of macroeconomics and to apply those concepts to a variety of economic issues of concern to economies such as Australia. The second is to help students to develop expertise in using an analytical approach to issues and to problems that will assist them to evaluate alternative theories and policy recommendations in a variety of contexts.
After completing LBE 200 Macroeconomics you should be able to:
- Identify the main macroeconomic issues of concern in the Australian economy;
- Appreciate the significance of those issues for government, business and individuals;
- Understand the key forces influencing the level and variability of economic activity;
- Understand the main policies available to the authorities in attempting to influence macroeconomic activity;
- Interpret, analyse and evaluate news items relating to macroeconomic issues and policies.

**Content**
- Module 3 Money Matters, Monetary Policy and External Issues: Money, Interest Rates and Monetary Policy. The Balance of Payments, the Exchange Rate and Foreign Debt.

**References**
The edition dates of these references will be updated to the current edition when they become available.

**LBE201 Managerial Economics and Strategy**
12.5 Credit Points • 13 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBE100 Microeconomics and LCR100 Statistics and Research Methods • Teaching methods: Lectures (1.5 hours per week) and tutorials (1.5 hours per week) • Assessment: Assignment 10%, tutorial tests 30%, tutorial presentation 10%, examination 50%
A Stage 2 unit in the Bachelor of Business which may also be undertaken in any other degree program at Faculty of Higher Education Lilydale.

**Aims & Objectives**
The course in Managerial Economics and Strategy should enable one to show the relevance of microeconomic concepts to business decision making through being able to:
- Apply a decision making framework to a wide range of economic problems.
- Use the concepts of elasticity and marginal revenue to establish optimal prices for goods and services.
- Analyse the determinants of demand and their relative significance using direct and statistical methods.
- Identify the costs that are relevant to decision making and distinguish between cost reductions due to scale, scope and learning effects.
- Understand the nature of asymmetric information and its implications for economic transactions.
- Understand how firms can best organise themselves to deal with the constraints posed by asymmetric information.
- Apply the basic concepts of game theory to oligopolistic decision making.
• Apply the principles of cost-benefit analysis to a variety of public projects.

Content
This unit emphasises the practical application of economic concepts to the decision-making processes of business and government, using case studies and problems as illustrations. Topics include demand analysis and forecasting, optimal pricing, the role of costs in managerial decision-making, asymmetric information, organisational design, competitive strategies, game theory and an introduction to the principles of cost-benefit analysis.

Reading Materials
Truett, L & Truett, D, 2004, Managerial Economics, 8th edn, John Wiley and Sons, Inc.
Hinckley, M & Pappal, J, 1996, Managerial Economics, 8th edn, Dryden, Fort Worth.

LBE203 Environmental Economics
12.5 Credit Points • 12 Weeks • 3 Hours per Week • Lilydale • Prerequisite: LBE100 Microeconomics • Teaching methods: Lectures (2 hrs per week) and tutorials (1 hr per week) • Assessment: Two Short Tests (15-25%), Tutorial Participation and Business Report (20-30%), Examination (40-60%).
A Stage 2 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
LBE203 Environmental Economics has three broad aims, they are:
• To demonstrate the important contribution economic principles can make in relation to managing the environment.
• To raise your consciousness of environmental issues.
• To understand the main causes and effects of modern environmental problems.
After completing LBE203 Environmental Economics you should be able to:
• Appreciate and understand the application of economic tools to the management of the environment.
• Appreciate and understand the nature of current environmental issues.
• Appreciate and understand how environmental issues can impact on individuals, companies, governments and the planet.

Content
• Economics and the Environment: introduction to Environmental Economics.

Recommended Reading
Kahn, JR 2005, The economic approach to environmental and natural resources, 3rd edn, Thomson South-Western, Ohio.
Chambers, N, Simmons, C & Wackernagel, M 2000, Sharing nature's interest ecological footprints as an indicator of sustainability, Earthscan Publications, London.
Tucker, MA & Tonkin, TH 2004, A presentation style guide for business students, August, Centre for eBusiness and Communication, Lilydale.

LBE204 Financial Markets and Institutions
12.5 Credit Points • 12 Weeks • 3 Hours per Week • Lilydale • Prerequisite: LBE200 Microeconomics • Teaching methods: Lectures (1.5 hours per week) and tutorials (1.5 hours per week) • Assessment: Short Test 25 - 35%, Business Report 20 - 30%, Examination 45 - 55%

A Stage 2 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
To provide students with:
• A basic understanding of the Australian financial system,
• A working knowledge of selected Australian financial markets and instruments, and
• An appreciation of issues relating to financial management.
After completing LBE204 Financial Markets and Institutions you should be able to:
• Have an overview of the Australian financial system and markets,
• Examine the role of individual financial intermediaries and regulators in the Australian financial system,
• Apply basic financial maths to real life situations, for example, compound interest and annuities,
• Understand the structure and operation of various Australian debt markets - equity, corporate, international and government, and
• Understand the importance of financial market management.

Content

Recommended Reading
Hunt, B, Hutchesson, T & Terry, C 2000, introduction to the financial system, Nelson Thompson, South Melbourne.

LBE300 Economic Policy in Society
12.5 Credit Points • 12 Weeks • 3 Hours per Week • Lilydale • Prerequisite: LBE100 Microeconomics, LBE200 Microeconomics • Teaching methods: Lectures, tutorials prescribed readings and discussion (including online) • Assessment: Class participation & 'in the News' (10-15%), Think Journal (10-20%), class topic presentation (10-15%), research essay (20-30%) and final examination (36-50%).
A Stage 3 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
To provide students with an understanding and appreciation of the interrelationships between economics, policy and society by being able to:
• Analyse policy issues, using economic principles and reasoning.
• Appreciate the relationship between policy goals.
• Identify potential gainers and losers from proposed policy changes.
• Evaluate policy options relating to particular issues.
• Engage confidently and competently in debate about economic policy in society.

Content
This unit considers the ways in which economic analysis can contribute to the solution of policy issues which concern society, and the interaction between economic and non-economic aspects of such issues. Topics selected for particular attention include the nature and goals of policy; unemployment; income distribution; infrastructure, technology and growth; and taxation policy. Students may also choose to develop further topics in which they have a particular interest. Examples include health, education and privatisation.
Reading Materials

The edition dates of these references will be updated to the current edition when they become available.


**LTE301 International Trade and Finance**

12.5 Credit Points • 12 Weeks • 3 Hours per Week • Lilydale • Prerequisite: LTE100 Microeconomics, LTE200 Macroeconomics • Teaching methods: Lectures (1.5 hours per week) and tutorials (1.5 hours per week) • Assessment: Two Short Tests 15-30%, Business Report 15-25%, Examination 40-60%

A Stage 3 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**

LTE301 International Trade and Finance has two broad aims. The first is to provide students with the conceptual foundations of the functions of the international trading and financial system. The second is to impart an understanding and appreciation of the current issues reflected in the international arena of trade and finance.

After completing LTE301 International Trade and Finance you should be able to:

- Appreciate the theoretical and analytical concepts necessary for the understanding and evaluation of international trade issues;
- Understand the key forces that influence the development and operation of the international financial system; and
- Appreciate current international trade and finance issues and their importance to business and government.

**Content**


**Recommended Reading**


Ellis, DW, Stonehill, AI & Moffatt MH 2004, International business finance, 10th edn, Pearson Education Inc, USA.


**LTE302 Economic Development**

12.5 Credit Points • 12 Weeks • 3 Hours per Week • Lilydale • Prerequisite: LTE100 Microeconomics, LTE200 Macroeconomics • Teaching methods: Lectures (2 hrs per week) and tutorials (1 hr per week) • Assessment: Two Short Tests 15%, Research Essay 20-25%, Examination 45-55%

A Stage 3 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**

LTE302 Economic Development has two broad aims. The first is to increase students' awareness and understanding of conceptual and contemporary 'third world' economic issues and problems. The second is to foster students' ability to reach independent and informed assessments of development issues and their possible solutions.

After completing LTE302 Economic Development you should be able to:

- Appreciate the theoretical and analytical concepts necessary for the understanding and evaluation of economic development;
- Understand the complex mix of forces that can both foster and hinder economic development;
- Understand the main policy solutions put forward by governments and various international agencies and their limitations;
- Interpret, analyse and evaluate news items relating to development issues and policies; and
- Undertake quality research into a specific aspect of economic development.

**Content**

- Module 3 Development Problems and Policies - International: Trade, Payments, Debt and Stabilisation, Foreign Investment and Aid, Development Prospects.

**Recommended Reading**


Arditi, HW 1993, 50 Years of development studies, The National Centre for Development Studies, ANU, Canberra.


**LBE100 Introduction to Commercial Law**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: Lectures (2 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Multiple Choice Test (20%), Seen Test Question (20%) and Examination (60%)

A Stage 1 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**

The general aims of this unit are to:

- Introduce students to the framework of the Australian legal system and to develop an understanding of basic legal concepts;
- Develop an understanding of the background, context and effect of the law and in particular a recognition of the impact of legal obligations on the way in which business operates;
- Enable students to recognise legal issues in the conduct of business decision making and in particular to gain an understanding of the law applicable to agreements and their negotiation;
- Develop an understanding of the legal repercussions of concluding an agreement (including the impact of statute) and breaching obligations undertaken;
- Develop critical thinking and analytical skills.

After completing LBE100 Introduction to Commercial Law, students should be able to:

- Describe the general nature and purpose of the court hierarchy;
- Explain the link between this hierarchy and the doctrine of precedent;
- Apply legal principles to determine contractual disputes.

The learning objectives may also include links to the general subject aims like being able to:

- Appreciate how the courts are involved in the evolution of the common law in response to societal changes and how the legislative powers of government override common law principles;
- Recognise the basis for criticisms of the law-making role of the courts;
- Engage in debate about the advantages and disadvantages of law-making by the courts.
Content

- Formation of Contracts: Offers, Acceptance, consideration and Intention.
- The Content of Contracts: Terms. Specific Terms Excluding Liability.

References

The edition dates of these references will be updated to the current edition when they become available.

Khoury, D & Yamouni, Y 2003, Understanding contract law, Lexisnexis Butterworths, Sydney.

Aims & Objectives

The aim of LBL200 Company Law is to introduce students to the different forms of business structures available and the legal regulation of each. This subject aims to provide students with an understanding of the basic issues and current regulations as well as providing a knowledge of how to find out the legislative provisions later in a student’s working life.

After completing LBL200 Company Law students should be able to:

- Discuss the reasons behind different types of business organisations.
- Explain the respective advantages and disadvantages of different types of business organisations.
- Demonstrate an understanding of the current status of company law in Australia.
- Demonstrate an understanding of current legislative regulation of companies in Australia.
- Demonstrate knowledge of the issues in practical situations.

Reading Materials

Hannah, P. et al. (2005), Commercial applications of company law, 6th edn, CCH, Sydney.
Lipton, P & Herzberg, A (2003), Understanding company law, 11th edn, Lawbook Co, Pyrmont.

Aims & Objectives

This unit intends to impart knowledge and appreciation of the legal controls and regulations affecting the manufacturing, labeling, packaging, distribution and promotion of goods and, where applicable, services in the Australian marketplace. It is particularly relevant and suitable for students undertaking a major or minor in Marketing, but would provide invaluable knowledge to all business students.

Whilst the unit deals with laws that impose controls over the activities of marketers, it also emphasises how the law can positively benefit and protect the marketer, and be utilised to obtain a competitive advantage in the marketplace. After completing LBL201 Marketing Law, students should be able to:

- Understand the external variables which impacts upon the marketing of goods and services.
- Appreciate that the law is primarily concerned with regulating many aspects of the marketplace, requiring, for example, that advertising, packaging and labelling be undertaken truthfully and honestly: that goods and services provided be safe and of reasonable quality; and so on.
- Recognise that apart from regulating, the law can positively assist those involved in marketing. It does this by protecting valuable assets such as inventions, designs and trade marks (brand names); and by giving protection and rights to those harmed by the actions of others operating in the marketplace who engage in anti-competitive conduct such as boycotts, misuse of market power and price fixing.

This unit aims to provide a comprehensive coverage of the laws that impact upon the marketing process, so that students may develop the essential knowledge needed to ensure compliance with the law. At the same time the unit aims to develop in students:

- Increased analytical skills.
- An ability to apply legal principles, whether derived from case law or statute, and
- An enhanced problem solving ability.

References

The edition dates of these references will be updated to the current edition when they become available.

Healey, D & Terry, A 1991, Misleading or deceptive conduct, CCH Australia Ltd, North Ryde.

Aims & Objectives

The general aims of this unit of study are:

- To examine whether, and to what extent, computer and data communications technologies are giving rise to a distinctive new field of law;
- To identify the subject matter, legal concepts and analytical techniques that have arisen (or changed) because of these new technologies;
- To facilitate an understanding of the interaction between the overall legal and
social
• contexts of cyberspace, as it gains increasing economic, cultural and social importance.
After completing LBL300, students should be able to:
• Identify areas of law affecting electronic commerce;
• Analyse the principal areas of national and global regulation and governance of electronic commerce;
• Demonstrate an understanding of the legal issues for parties to electronic transactions;
• Recognize major law reform issues in facilitating e-commerce and regulating the technological infrastructure of e-commerce in Australia and overseas;
• Demonstrate an ability to identify some legal problems that may arise in business (e.g. digital signatures, privacy requirements, contractual relations) and some ability to predict how a legal problem might be solved.

Content
• Module 1 - Legal Framework and Background: The Internet and the Legal System, National and international legal framework (jurisdictional issues).
• Module 2 - Business and Commercial Issues: Online contracts.
• Module 4 - Regulatory and Policy Issues: Marketing on the Internet. Privacy Issues (including Cookies, Profiling and recent enacted Anti-Spam legislation).
• Module 5 - Cyber crime. New ways to break old laws. New crimes unique to e-Commerce and the Internet.

Textbooks

Recommended Reading
Akindemowo, O 1999, Information technology law in Australia, LBC Information Services, Sydney.

LBL301 Law of Employment
12.5 Credit Points • 1 Semester • 3 hours per week • Lilydale • Prerequisite: LBL100 Introduction to Commercial Law, LBL200 Company Law recommended • Teaching methods: Lectures (2 hours per week) and tutorials (1 hour per week). Students may choose to view online lectures • Assessment: Closed Book Test 30% and Open Book exam 70%

A Unit 3 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The general aims of this unit are:
• to consider the legal regulation of the relationship of employers and employees in Australia in a national and international context;
• to identify the formation, content and termination of employment contracts and how terms conditions of employment are regulated by the courts, by award and by other collective and individual workplace agreements;
• to facilitate an understanding of the protections offered by equal opportunity, occupational health and safety and privacy laws;
• to examine the effects of the "Work-Choices" legislation and what those changes mean for Australian workers.

On completion of this unit, students should be able to:
• understand the individual components of the employment relationship and the distinction between employees and independent contractors;
• explain the elements of a valid contract of employment and be able to identify and analyse the rights and obligations of both parties under the contract;
• apply the legal principles to circumstances which give rise to termination and breach of contract and to identify, apply and critically analyse the appropriate remedies;
• recognise discrimination in employment and demonstrate an understanding of occupational health and safety law as it applies to employers and employees;
• understand the federal nature of employment and the basic features of the "Work-Choices" legislation and its impact on employment in Australia;
• demonstrate an understanding of workplace agreements (Certified Agreements and Australian Workplace Agreements);
• explain the legal regulation of industrial conflict.

Content
Module 1 - Principles of Law of Work:
• Introducing Employment Law.
• Global influences impacting on workplace relations in Australia

Module 2 - Employment Issues:
• Employees v independent contractors
• Work relations and the limits of contracts
• Rights and responsibilities under Contract
• Work standards and awards
• Equality and diversity at work
• Security at work including protection from unfair dismissal and privacy
• Freedom of Association at work

Module 3 - Workplace agreements and dispute resolution:
• Enterprise bargaining, collective bargaining and individual enterprise bargaining
• Industrial conflict management, industrial action and dispute resolution

Textbooks

Recommended Reading

LBL100 Marketing Concepts
12.5 Credit Points • 1 Semester • 3 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: An integrated series of lectures and tutorials, along with weekly exercises and assignments • Assessment: Weekly exercises 10%; Tutorial presentation 15%; Major assignment 25%; Final exam 50%.

A Stage 1 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
At the end of the unit, the successful student will have achieved an understanding of key concepts used in business-customer exchanges, along with an understanding of the role of the marketing function within any organisation.

Particular emphasis is given to the role that Marketing plays in any organisation's core processes of:
• Creating and adapting to changes in its external and internal environments,
• Understanding the ever-changing dynamics of client-organisation relationships, and
• Fulfilling the needs and wants of stakeholders in a way that also satisfies the organization's goals (both financial and social).

This understanding of marketing theory and practice, and what marketing people do, will assist the understanding of other disciplines in the Bachelor of Business degree, as well as providing a strong philosophical foundation for the further vocational study of marketing.

Content
The unit provides students with a series of lectures, tutorial exercises and assignments designed to give them an opportunity to explore basic business and marketing concepts from a variety of perspectives. Related issues of concern to non-profit organisations are also explored.

Particular emphasis is given to the role marketing plays in the organisation's process of adaptation to its environment, relationships between organisations and their clients, and in the formulation of management policies that impact on other functions such as accounting, operations, and research.
Textbooks
To be advised.

Recommended Reading
Medrum, M & McDonald, M 1995, Key marketing concepts, McMillan Press, Basingstoke.
Other supporting material will be prescribed, as appropriate, in lectures. It is expected that extensive use will be made of the large collection of relevant material in the Swinburne library, including books, databases, videos, and current journals.

LBM200 Marketing Behaviour

12.5 Credit Points • 1 Semester • 3 Hours per Week • Lilydale • Prerequisite: LBM100 Marketing Concepts • Teaching methods: An integrated series of lectures and tutorials, along with weekly exercises and assignments • Assessment: Tutorial attendance and participation 5%; Minor and major assignments 45%; Examination 50%

A Stage 2 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale. This unit is a mandatory requirement for a major sequence in marketing and is normally studied in Semester 2 of year one.

Aims & Objectives
This unit aims to impart a broad understanding of the factors determining buyer behaviour in both consumer and business-to-business marketing. The foundation stone of marketing behaviour knowledge (about interaction between sellers and buyers of all kinds) that is laid in this subject will be used constantly in later higher-level marketing units.

This unit provides students with a series of lectures and tutorials designed to give them opportunities to explore basic buyer behaviour concepts from a variety of perspectives, and put those concepts to use in practically-oriented exercises and assignments. The primary objective of this subject is to study the process of Consumer and Industrial (or Business-to-Business, or Organizational) choice, along with the determinants of choice and the implications for marketing strategy of such 'choice' decisions. Given that it is a subject taught mainly to Bachelor of Business (BBus) students specializing in Marketing, both strategic and tactical Marketing orientations permeate all facets of the unit.

Particular emphasis is given to the role that buyer behaviour plays in:
- The exchange process (the very cornerstone of marketing),
- Fostering better relationships between organizations and their clients, and
- The formulation of realistic, practical marketing policies based on behavioural knowledge.

They should be able to:
- Relate the marketing behaviour concepts and theories to practice,
- Effectively communicate buyer behaviour theory and practice to others,
- Explain how the concepts and practices are typically used by marketers to influence the actions of buyers, and
- Discuss the implications of their newly-gained behavioural knowledge in better understanding their day-to-day lives.

Content
At the completion of the unit students should have acquired an understanding of:
- The process of human decision-making,
- The three main influences on consumer choice,
- The individual consumer environmental influence,
- Marketing strategy with respect to buyer behaviour,
- The main influences impacting on business-to-business purchasing decisions: The DMU (Decision Making Unit) or buying centre. Organisational factors and constraints.

This unit allows second-stage students to explore basic human behaviour concepts and theories, as they relate to purchasing decisions in both consumer and business-to-business marketing areas. It emphasizes the practical marketing implications of those behavioural concepts, through the study of:
- Consumers as individuals and in groups,
- Decision-making processes (consumer and organisational),
- Communication across groups,
- Communication and promotion forms.

It provides base behavioural knowledge, which allow further development of marketing knowledge in later stage units of study.

Textbooks
To be advised.

Recommended Reading

LBM201 Marketing Planning

12.5 Credit Points • 1 Semester • 3 Hours per Week • Lilydale • Prerequisite: LBM100 Marketing Concepts • Teaching methods: An integrated series of lectures and tutorials, with assignments and a final examination • Assessment: Tutorial presentation and report 15%; Assignment and oral presentation 30%; Project briefings 10%; Examination 50%

A Stage 2 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale. The process of human decision-making.

Aims & Objectives
In the highly competitive and turbulent business world, it is particularly important for Australian companies to carefully analyse their strategic planning, sharpen their business analysis skills and see beyond the geographical or product-based boundaries of the markets in which they currently compete. Acquiring and maintaining competitive advantage by having a consistently superior business/ marketing planning system will be one of the most vital strengths of successful businesses of the future. This unit gives students the opportunity to acquire a working understanding of various methods of marketing planning and the ability to apply them appropriately in developing and implementing marketing strategies that respond to the challenges of the environment.

The objective of this unit is to examine the concepts of planning and strategy in marketing, the role and methods of strategic analysis, and issues related to strategy formulation, implementation and control. It focuses on the marketing planning process as a key tool in an organisation's interaction with its environment.

Specific aims:
- To allow students to consolidate and develop upon the concepts developed in LBM100 and LBM200,
- To enhance students' capacity to critically analyse business situations from a marketing viewpoint,
- To give students a working understanding of the methods and concepts of strategy analysis and how these can be applied in practice,
- To expose students to a systematic approach to the development of marketing strategy and the program decisions needed to implement the overall marketing strategy (by developing a Marketing Plan),
- To further build students' analytical and communication skills.

Content
Discussion of prescribed articles forms a major part of the course. The emphasis on business report writing is continued, with more complex and specialised reports being required. The major assignment requires formulation of a realistic marketing plan for an organisation/enterprise.

Framework:
- The structure and process of marketing planning,
- Sources of information to assist marketing planning,
- The external environment analysis - the customer base and the industry,
- The corporate or internal capability appraisal,
- A knowledge of analytical tools to appraise the market and firm,
- Developing marketing objectives,
- Developing detailed Marketing programs, including the use of the the Marketing Mix factors (Product, Promotion, distribution (or Place) and Price in
such planning.

Textbooks
Reed, PW 2003, Strategic marketing planning, Thomson, Melbourne.

Recommended Reading
Shimp, TA 2003, Advertising, promotion and supplemental aspects of integrated marketing communications, 6th edn, Thomson SouthWestern, Ohio.

Students are expected to avail themselves of the many resources of the Library and the Internet in addition to those of the reading materials specified above.

Aims & Objectives
The marketing communications industry is a major sector of Marketing. This unit explores the various promotional strategies utilised by marketers. It provides insights into how to adapt advertising, media, event management, public relations, sales promotion, and direct marketing policy and techniques to achieve campaign objectives and facilitate their effective implementation.

Content
Topics include:

- Knowledge of the integrated marketing communication (IMC) process.
- Planning of the communications budget.
- Functions of an advertising agency.
- Knowledge of Media types and capabilities.
- Knowledge of the Public relations and publicity (PR) function.
- Knowledge of Sales promotion objectives and practices.
- Knowledge of Direct marketing objectives and practices.
- Knowledge of International advertising needs and limitations.
- Evaluating the effectiveness of the overall communication strategy.
- Development of an integrated marketing communications plan.

Textbooks

Recommended Reading
Shimp, TA 2003, Advertising, promotion and supplemental aspects of integrated marketing communications, 6th edn, Thomson SouthWestern, Ohio.

Students are expected to avail themselves of the many resources of the Library and the Internet in addition to those of the reading materials specified above.

Aims & Objectives
The services business is the fastest growing sector, nationally as well as globally. This unit explores the major differences between the marketing of services as distinct from tangible product marketing, and aims at providing students with special skills required to develop and implement marketing strategies in service businesses.

Content
Topics include:

- Distinctive aspects of service marketing.
- Market research in the services environment.
- Communications in the services environment.
- Demand management.
- Service quality.

A Stage 3 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne, Lilydale. Note: This unit is a mandatory requirement for a major sequence in marketing.

Aims & Objectives
Students enrolling in this unit are prepared with an understanding of basic marketing concepts and behaviour from first year studies which, for the major, have been enriched at second year level with the subjects Survey Research Methods, Market Behaviour, Marketing Planning and Marketing Communications. The objective of this unit is to enable students to apply their learned marketing knowledge to the specific areas of both Product Development and Product Management.

Specific objectives address innovation, product development and product management issues from a marketing management approach (that is to say, with a lesser emphasis on other approaches such as economic, technical or purely creative - these areas are not ignored but are treated as contributory disciplines).

Content
Topics include:

- The meaning, importance and function of the product management role in business today.
- The impact of product management practices on the development of goods and services based products.
- The range of concept-generating techniques used for new product development.
- The means of evaluating new product ideas.
- Preparation of a product, a product launch plan and its importance as a marketing control tool for new products, product maintenance and product ‘re-launched’.
- The importance of product positioning within the target marketing process, branding, packaging and the importance of successful working relationships with advertising, marketing, research, promotion agencies, etc. in the product management process.
- International aspects of product management.
- The importance of successful working relations within the organisation, particularly with sales, production, supply and research and development, in the product development process.

Textbooks

Recommended Reading
Rizkobas, R 2003, Brand management - a theoretical and practical approach, Prontice Hall, Gosport.
The unit aims to introduce students to the techniques for successfully gaining desired employment and the skills necessary for effective career planning and career management.

Content
Topics include:
- Identification of skills and values.
- Writing a winning resume.
- Writing cover letters.
- Networking, graduate attributes, employer expectations.
- Interview theory.
- Interview practice.
- Topic selected in consultation with Faculty, guest speakers.
- Further selection processes.
- Career Action Plan.

Recommended Reading
Baron, S & Harris, S 2003, Services marketing: texts and cases, 2nd edn, Palgrave, New York.

LXB300 Global Business Practice and Culture
12.5 Credit Points • 12 Weeks • 3 Hours per Week • Lilydale • Prerequisite: successful completion of second year • Teaching methods: A series of seminars preceding an overseas study tour • Assessment: Short Test 20-30%, Individual Business Diary 20-30%, Syndicate Report 20-40%, Individual Student Involvement 10-30%

A Stage 3 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The unit aims to expose students to the culture and business practices in the two cities visited. Students will travel abroad and visit various companies/organisations to experience first hand a host country's business practices and, observe and evaluate how they have achieved or are pursuing their objectives in a competitive marketplace.

After completing this unit/Study Tour you will be able to:
- Appreciate the need for a global perspective in business and on economic issues.
- Develop awareness of the economic, political, cultural and social differences between countries.
- Experience best practice in international business.
- Understand how the various departments/components of a business (finance, marketing, human resources and so on) need to work together to achieve strategic objectives, and
- Demonstrate increased self-confidence, improved communication skills and the ability to work responsibly in a team environment.

Content

Reading Materials

LCE091 Careers in the Curriculum
0 Credit Points • 1 Semester • 10 Hours per Semester or Intensive Mode over 2 Days • Lilydale • Prerequisite: Nil • Assessment: Assignment (job application and introduction letter)

A compulsory unit of study in all undergraduate degrees at Swinburne Lilydale.

Aims & Objectives
Careers in the Curriculum is open to all second and third year Higher Education students. It has been specially tailored to provide background information, documentation and skills needed for application and graduate employment in the Business, IT and Social Science industries. The content will include information on a wide range of topics, practical hands-on tasks, as well as presentations by employers.

The unit aims to introduce students to the techniques for successfully gaining desired employment and the skills necessary for effective career planning and career management.

Content
Topics include:
- Introduction to Information Methods: Information Technology Literacy. Information Literacy.
- Information Communication: Collecting and Structuring Data, DBMS, Creating Information from Data.
- Information Quality/Timeliness: Assessing Information.
- Global and Cultural Implications: Disneyfication, McDonaldisation. Group
Textbooks

References
Germov, J & Williams, L 1999, Get great information fast, Allen & Unwin, St Leonards.

This book is available on counter reserve in the Library at Lilydale campus. You are encouraged to make use of introductory texts on Microsoft Office 2002 office suite (MS Word, MS Excel, MS PowerPoint, and MS Access) as required.

LCL100 Learning and Communication Behaviour
12.5 Credit Points • 12 Weeks or equivalent • 2 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: Lectures (1 hr per week) and tutorials (1 hr per week) • Assessment: Workbooklet Hurdle Tasks 12%; Individual Written Assignments 18%; Group Written Report Presentation 20%; Final exam 50%

A Stage 1 unit of study in all degree programs at Swinburne Lilydale.

Aims & Objectives
On completion of this unit, students will have increased competence in a range of skills such as concept mapping, time management, creative problem-solving, team work, written and oral communication; presentation strategies, reading and notation techniques, critical thinking and analysis of arguments. They will use these skills to augment their studies in all disciplines, and be able to apply them to the workplace.

The unit provides students with opportunity for interdisciplinary study, drawing on themes from psychology, sociology, philosophy, education and business. It is presented from a Liberal Arts perspective on education and learning, in keeping with the Vision Statement for the Lilydale campus of Swinburne University.

By developing awareness of the nature of knowledge, and ways in which it is generated; the subject also aims to foster development of active and independent learning styles, as well as a positive orientation to life-long learning. Students should gain an appreciation of the relevance of both their skills, and the substantive themes generated; the subject also aims to foster development of active and independent learning styles, as well as a positive orientation to life-long learning. Students should gain an appreciation of the relevance of both their skills, and the substantive themes generated; the subject also aims to foster development of active and independent learning styles, as well as a positive orientation to life-long learning. Students should gain an appreciation of the relevance of both their skills, and the substantive themes generated; the subject also aims to foster development of active and independent learning styles, as well as a positive orientation to life-long learning. Students should gain an appreciation of the relevance of both their skills, and the substantive themes generated; the subject also aims to foster development of active and independent learning styles, as well as a positive orientation to life-long learning. Students should gain an appreciation of the relevance of both their skills, and the substantive themes generated; the subject also aims to foster development of active and independent learning styles, as well as a positive orientation to life-long learning.

Content
• Liberal Education and Learning Communities.
• Learning as an Individual and in a Group.
• The Structure of Knowledge.
• The Social Construction of Knowledge.
• Values and Ethical Frameworks.

Reading Materials
Learning Guide for LCL 100, with recommended readings included. A unit outline is provided, with information on additional relevant texts.

A book of collected readings is available for purchase for the Bookshop. This book is also available from the Library.

Buzan, T 1990, Use both sides of your brain, Plume, New York.
Brew, C 1995, Are we on the same team here? essential communication skills to make groups work, Allen & Unwin, St Leonards.

LCR100 Statistics and Research Methods
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Online workbook tasks 20%, Class Test 20%, Examination 60%

A Stage 1 unit of study in all degree programs at Swinburne Lilydale.

Aims & Objectives
The aim of Statistics & Research Methods is to develop the capacity to carry out independent statistical investigations, together with an awareness of the assumptions and limitations involved with the generalisation of the results of such investigations. Students are expected to summarise data, identify research questions, determine and identify appropriate research designs, analyse the data and interpret the results in a report writing format.

Content
Module 1: Making Sense of Data:
• Displaying and summarising categorical data.
• Picturing metric data: Histograms and stemplots.
• Summarising metric data: The median, IQR & boxplots.
• Summarising data: The mean & standard deviation.
• Describing metric distributions and summary of module 1.

Module 2: Exploring relationships:
• Describing the relationship between a categorical and a metric variable.
• Describing and displaying relationships between two metric variables.
• Introduction to regression.
• Describing the relationship between two categorical variables.
• Correlation and causality.
• Summary of module 2.

Module 3: Gathering data:
• Producing data.
• Experiments.
• Populations and samples

Module 4: The normal distribution:
• Modelling the population distribution.
• Calculating normal percentages.

Module 5: Sampling distributions:
• Sampling distribution of the mean.
• Sampling distribution of the proportion.
• Samples to populations

Module 6: Inference using a single variable:
• Interval estimation.
• Hypothesis testing.
• Making decisions about the mean: the t test
• Making decisions about the mean: the z test

Module 7: Inference using two variables:
• Testing relationships: The related groups t - test.
• Testing relationships: The independent groups t - test.
• Testing relationships: Pearson’s r.
• Testing relationships: The chi squared test

Recommended Reading

LEB105 eCommerce Fundamentals
12.5 Credit Points • 12 Weeks or equivalent • 36 Hours or equivalent • Lilydale • Prerequisite: Nil • Teaching methods: Lecture (1.5 hrs) and Tutorial (1.5 hrs) in face-to-face mode. This unit is also available online. • Assessment: Individual Learning Activities (individual) 20%, Worked Case Study Presentation(in groups) 10%, Worked Case Study Report (in groups) 20% and Final Exam 50%

A unit of study in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The aim of LEB105 eCommerce Fundamentals is to prepare students for understanding and designing effective Internet e-commerce models built on a strong foundation of business concepts and wisdom, together with a knowledge of the eCommerce environment and the influence of the Internet on business stakeholders; customers, suppliers, manufacturers, service makers, regulators, managers and employees.

On completion of this unit students will:
• Have received a thorough grounding in electronic commerce on the Internet.
• Understand the rapid changes taking place in electronic commerce.
• Be aware of the new technologies of importance to electronic commerce.
• Be aware of important research and development trends in the area.

Content
• Understand eCommerce key terms.
• Develop awareness of Information and Communication Technologies (ICT) and eCommerce relationship.
• Recognise positive and negative issues related to Global Economy.
• Understand the fundamentals of systems thinking and apply selection of tools in the context of eCommerce.
• Develop awareness of risks, security, legal and ethical issues in the context of eCommerce.
• Ability to represent systems using rich pictures.
• Develop fundamental knowledge of technology basics.
• Recognise importance of customer focus in eCommerce.

Textbooks

References

LEB210 Business Models of eCommerce
12.5 Credit Points • 12 Weeks or equivalent • 36 Hours • Lilydale • Prerequisite: LEB105 eCommerce Fundamentals • Teaching methods: 1.5 hour lecture (face-to-face or virtual via website), 1.5 hour tutorial (face-to-face). • Assessment: Assignments 40-60% and an examination 40-60%.
A unit of study in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The aim of this unit of study is to investigate the way in which business enterprise organises itself to respond to the challenges of the modern competitive environment. It will examine the way in which traditional business models have had to adapt to take advantage of eCommerce opportunities, as well as emerging models that uniquely exploit those opportunities. It will look at the changing role of intermediaries and the growth of strategic partnerships and alliances. Beyond eCommerce models the models of eFinance and eGovernment should be explored.

On completion of the unit students will be able to:
• Explain the concept of a business model and describe the many forms utilised in the context of eCommerce.
• Understand how each of the commonly used models enables the enterprise to generate profitable outcomes using internet commerce.
• Outline the challenges of the modern competitive environment and the many ways business enterprise can take advantage of the eCommerce opportunities.
• Demonstrate your ability to analyse each of the models at a variety of levels, gradually increasing the depth of your understanding.
• Describe the changing role of intermediaries and the nature and importance of the growth of strategic partnership and alliance.
• Extend your knowledge into the models of eFinance and eGovernment, in order to generalise and contextualise your learning.

Content
• Electronic markets and competitive advantage.
• The concept of a business model.
• Business models for eCommerce.
• Analysis of business models.
• Intermediaries changing role.
• Alliances and partnerships.
• Business models for eFinance and eGovernment.

Textbooks

References

LEB211 Deriving Business Value
12.5 Credit Points • 12 Weeks or equivalent • 36 Hours or equivalent • Lilydale • Prerequisite: LEB105 eCommerce Fundamentals • Teaching methods: Face-to-face or virtual lecture via website (1.5 hours) and face-to-face tutorial (1.5 hours). The unit is also available for online study. • Assessment: Value Proposition Analysis (20%), Design for Value Creation (30%) and Final Examination (50%).
A unit of study in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This unit of study is focused on the digitisation of the value chain and value networks. It aligns the strategies, models and infrastructure of eCommerce. It will look at implementation in a broad sense and consider interrelated strategies focused on customer relationships, resource planning, order management, supply chains and the evaluation of investments needed to bring them to reality. This will include the application of technology to Enterprise Resource Planning systems, Supply chain, eProcurement, Selling chain and Customer Relationship Management, as well as Collaborative and Knowledge Management Approaches.

On completion of this unit you will be able to:
• Explain how organisations have adapted to operate in the digital economy.
• Describe the nature and purpose of a range of business systems.
• Understand the relationships between strategy, models and infrastructure.
• Outline the process of deriving business value in relation to a range of the business systems.
• Take a management view of information technology in relation to value chain and value networks.

Content
• Value propositions and value configurations.
• The co-operative, collaborative enterprise.
• The electronic market place.
• Value from ERP, supply chain and procurement.
• Value from selling chain and customer relationship management.
• Collaborative and knowledge management approaches.
• Value from business structure and governance.

Textbooks

References

LEB212 The Networked Economy
12.5 Credit Points • 12 Weeks • 36 Hours • Lilydale • Prerequisite: LEB105 eCommerce Fundamentals • Teaching methods: Virtual lecture via website (1.5 hrs) and face-to-face tutorial (1.5 hrs) weekly in semester. The unit is also available for online study. • Assessment: Assignments 50-70% and an examination 30-50%.
A unit of study in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This unit is focused on the social infrastructure of business and considers the competitive landscape of eCommerce in a world created through electronic connections. It will investigate the issues of connectivity using digital technologies that extinguish barriers of time and distance, a world of 24 hour by 7 day trading. The nature of the new competitive environment and digital marketing strategy will be explored. The context of banking and finance will be utilised. The social change associated with the networked economy will be discussed at a local, national, regional and global level.

On completion of this unit you will be able to:
• Distinguish between the networked economy and a national economy.
• Explain the concept of social infrastructure and its relevance to business.
• Describe the competitive landscape of eCommerce in the networked economy.
The challenge for the modern manager is the networked economy. This unit aims to investigate the importance of work-teams for business success in the networked economy.

Aims & Objectives
The challenge for the modern manager is the networked economy. This unit aims to investigate the importance of work-teams for business success in the networked economy.

Content
- The role of the manager in the networked economy.
- The importance of work-teams for business success in the networked economy.
- The nature and significance of ethics in relation to the manager’s role.
- Electronic communication practices and develop a range of practical skills that will be useful for yourself in the role of manager.
- Distinguish between self management and managing others.
- Ask questions seeking to understand what people know and do not know, to obtain feedback and direction/ise thinking.
- Demonstrate your ability to prepare a business report suitable for a specific purpose.
- Make effective business presentations for a specific business audience and purpose, including motivation and persuasion.

Textbooks

References

ELB214 eEnterprise Strategy and Project Management
12.5 Credit Points • 12 Weeks or equivalent • 36 Hours or equivalent • Lilydale
Prerequisite: LEB105 eCommerce Fundamentals • Teaching methods: 1.5 hour Lecture (face-to-face or virtual lecture via website) and 1.5 hour Tutorial (face-to-face) per week. The unit of study is also available for online study. • Assessment: e.g. Strategic Planning Exercise (group) (25%), Project Plan Presentation (group) (15%), Project Management Issues Report (individual) (30%) and Examination (40%).
A unit of study in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This unit aims to develop knowledge and skills in strategy formulation and planning. It will include understanding the context in terms of opportunities and threats, undertaking focused business research on the competitive environment, generating strategic options and related decision making, strategic planning including the business proposal and plan. A range of different strategic planning tools will be applied. Throughout this unit aims to develop your systems thinking skills and application of the related tools, together with practical project management skill development.

On completion of this unit you will be able to:
- Distinguish between strategic planning and budgeting.
- Apply systems thinking in the context of web enterprise and strategy formulation.
- Develop project management plans in the context of web enterprise.
- Use project management software for simple and more complex web enterprise projects.

Content
- Strategic planning approaches for web enterprise.
- Strategic planning tools and double loop learning.
- Multiple views and thinking styles for strategy formulation.
- Project management.

Reading Materials
- Philips, J 2002, IT project management: on track from start to finish, McGraw-Hill/Osborne, California.
- Sherwood, D 2002, Seeing the forest for the trees: a manager’s guide to applying systems thinking, Nicholas Brealey, London.
holistic enterprise enunciation and development strategy. A particular emphasis will be upon the eFS (electronic financial services) development strategies given the vast array of opportunities in the Banking and Finance sector.

Content
- Enterprise Design Conceptual Framework (EDCF)
- Natural Design
- Systems Design
- Blueprint of a New Business/Organisation/Enterprise
- Establishing Connections
- Envisaging Change
- Prototyping as a Test of Design Viability
- Communicating the Enterprise Design

Reading Materials


LEB311 Developing eCommerce and eFS Systems
12.5 Credit Points • 12 Weeks or equivalent • 36 Hours or equivalent • Lilydale • Prerequisite: LEB105, LEB210 Business Models of eCommerce, LEB211 Deriving Business Value, LEB310 Designing eCommerce and eFS Systems • Teaching methods: Lecture (1.5 hrs) and Tutorial (1.5 hrs) in face-to-face mode.

The unit is also available for online study. • Assessment: Infrastructure Element Insight Paper (individual report) (35%), eBusiness Infrastructure Design (group report) (35%) and Final Test/Examination (30%).

A unit of study in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
On completion of this unit you will be able to:
- Take a holistic view of eBusiness or eFS infrastructure and understand its relationship to the business model.
- Explain how the inter-related frameworks of resource planning, supply chain, procurement, CRM, finance etc. are integrated to support an enterprise.
- Develop high-level models of ICT architecture components.
- Explain how ICT investment creates value for the enterprise and how it can be measured.
- Understand key issues for management of ICT in the modern enterprise.
- Discuss the issues involved in modifying existing IT infrastructure as opposed to replacing it.

Content
- Thinking an eEnterprise.
- Creating Value with Technology.
- Development Processes.
- eEnterprise and EFS Architectures.
- eEnterprise and EFS Functional Applications.
- eEnterprise and EFS Technologies.
- Reusable Application Models and Reusable Assets.
- Managing ICT in the eEnterprise.
- Delivering eEnterprise Infrastructure.
- Integrating Enterprise, Technology and Society.

Textbooks

References


LEB312 Business Transformation
12.5 Credit Points • 12 Weeks or equivalent • 36 Hours or equivalent • Lilydale • Prerequisite: LEB105 • Teaching methods: Lecture (1.5 hrs) and Tutorial (1.5 hrs) in face-to-face mode. The unit is also available for online study. • Assessment: e.g. Industry Transformation Change Agencies work assignment (20%), Industry Transformation Analysis assignment (30%), Final Test/Examination (50%).

A unit of study in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This unit of study explores the nature and process of strategic transformation of business and industry in an environment of change. It begins by focusing on the need for businesses to develop a business operating framework that allows them to adapt and transform themselves in response to major environmental changes. Particular attention is paid to how businesses are being transformed as a result of the impact of digital technologies on consumer power and behaviour. These kinds of changes have led to transformational changes at the functional level of business which have in turn resulted in the transformation of industries such as music, photography, newspaper, travel and financial services. These industry level changes pose challenges for enterprises within those and other industries. The subject will investigate the issues of governance, regulation, implementation and change together with their human aspects.

On completion of this unit you will be able to:
- Explain the nature and process of strategic transformation.
- Understand the need for enterprise transformation at the business unit level and the industry level, and cite cases illustrating these phenomena.
- Discuss how innovation, process redesign and a commitment to continuous improvement can assist business transformation.
- Outline some examples of how specific industries have been reconfigured, drawing attention to the challenges and opportunities that have emerged.
- Analyse some relevant issues of governance, regulation, implementation and change management.

Content
- Industry reconfiguration as a transformational consequence of the application of digital technologies.
- Business transformation.
- Managing change.
- Future change.

Reading Materials


LEB313 eEnterprise Performance Measurement
12.5 Credit Points • 12 Weeks or equivalent • 36 Hours or equivalent • Lilydale • Prerequisite: LEB105 • Teaching methods: Lecture (1.5 hrs) and Tutorial (1.5 hrs) in face-to-face mode. The unit is also available for online study. • Assessment: eg Research Assignment (25%), Performance Measure Design (group) (25%), Performance Measure presentation (group) (10%) and Examination (40%).

A unit of study in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This unit takes a performance measurement approach to resource management for the creation of customer and shareholder value. Electronic enterprise is the focal context used, but the concepts and tools are equally applicable to business, not-for-profit and government enterprise. Performance measurement is explored initially using the balanced scorecard and the triple bottom line. In balanced scorecard vision and strategy are central and determine the goals, measures and targets used in the
multiple aspects of web enterprise; financial, customer/supplier, internal systems, and learning and innovation. In the financial aspect both cost and income streams will be examined taking a resource management approach. Activity based costing is examined in relation to products, services and customers. Contemporary developments and concepts are included.

On completion of this unit you will be able to:
- Explain the underlying concepts involved in performance measurement.
- Apply an outcome driven approach to Enterprise performance measurement.
- Understand and apply balanced scorecard for performance measurement.
- Prepare a performance reporting plan using an electronic spreadsheet.
- Explain the concept and importance of sustainability for enterprise performance.
- Apply the triple bottom line as a web enterprise performance measurement tool.
- Understand the principles and application of activity based costing information for use in profitability related decisions for products, services and customer groups.

Content
- Performance measurement - inputs, costs, revenue, profit, outputs, outcomes, social benefits.
- Cost structure, analysis and management - products, services, customer groups.
- Price, volume and market relationships and performance.
- Balanced scorecard for performance measurement.
- Sustainability as a business imperative - economic, social and environmental.
- Triple bottom line performance measurement for web enterprise.

Reading Materials

LIN100 Aboriginal Australia: Victorian people, places and experiences
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: Lectures/Guest Speakers, Discussion, Field Trips, Workshops and Tutorials (run in 2-Week Blocks). • Assessment: Fortnightly Journal 30%, Critical discussion/debate 20%, Research Essay 40%, Tutorial Attendance/Participation 10%. A Stage 1 unit of study which may be undertaken as an elective in any degree program at Swinburne Lilydale.

Aims & Objectives
Indigenous issues in Australia continue to be at the centre of public discussions concerning our national identity, history, and political, legal, health and education systems. This unit of study seeks to initiate the education of students in Indigenous issues so that they may contribute to these discussions from a position that is better informed.

The unit of study aims to provide students with an understanding of Australia’s Indigenous peoples and the issues that define their experiences as Australian citizens. Further, it also seeks to encourage students to examine their role as Australian citizens in our contemporary multicultural and multinational society, and to actively encourage students to develop and practice broader thinking in issues of inter-cultural relationships.

Content
The unit of study will examine six main topic areas, looking at both historical and contemporary issues:
- New Arrivals: issues surrounding invasion/settlement.
- Race and Identity: identifying race differences in society.
- Government Policy.
- Spirituality: arts, crafts and traditions; relationships with the land; importance of land, and protocols related to it.
- Education: its importance to Indigenous Australia.
- Future developments: examining contemporary political developments and their relevance to our country’s future.

Recommended Reading
Barwick, D 1998, Rebellion at Coranderrk, Aboriginal History Inc., Canberra.
Reynolds, H 1998, This whispering in our hearts, Allen & Unwin, St. Leonards.
Wiencke, SW 1984, When the waffles blossom again, Impact Press, Brunswick.

LJX200 International Study Experience
12.5 Credit Points • Equivalent to 35 Hours • Lilydale • Prerequisite: Acceptance into the Exchange Program or the Study Abroad Program • Teaching methods: Individual reading and reflection supplemented by seminar discussions, discussion threads, use of the Internet and other resources • Assessment: Pre-departure preparation (20%), On exchange Journal development (30%) and Post exchange report and presentation (50%). A Stage 2 unit of study which may be undertaken as an elective in any degree program at Swinburne Lilydale.

Aims & Objectives
The main objective of this unit is to maximise the benefits to each participating student and to the Division from the exchange experience. More specifically, the objectives are to:
- Assist students to prepare for their exchange.
- Encourage students to reflect on the ways in which their exchange experience enhances their personal and professional growth.
- Increase cultural and inter-cultural awareness and understanding.
- Create an awareness of the issues/problems that students are likely to encounter and equip them with techniques to handle them.
- Generate enthusiasm about international opportunities.
- Develop a greater awareness of the meaning of citizenship at the local, national and international level.
- Expand the student’s citizenship horizons.

Content
- Pre-departure preparation for the exchange experience.
- During Exchange - students’ record of and ongoing reflection on their experience.
- On Return - comparison of expectations and reality and self-evaluation of the experience.

Reading Materials
Learning Guide
Recommended Reading
Dowell, M & Mistry, KP 2003, Study abroad: how to get the most out of your experience, Pearson Education, New Jersey.
No single text book, but a range of references including Books / Journals / Internet resources / Videos

LPR100 Professional Communication Practice
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: Lectures, Tutorials, Experiential Learning Exercises, Independent Learning Tasks and Peer Mentoring • Assessment: Assignment 20-30%, tutorial contribution and test 20-30%; a report 25-35% and a presentation 15-25%. A Stage 1 unit of study in the Bachelor of Social Science or the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
Professional Communication Practice is designed to equip students with the oral and written communication skills they require to compete in the contemporary marketplace. This is achieved through an exploration of both the theoretical and practical dimensions of modern communications, with an emphasis on developing the skills needed to deal with a wide variety of different communications environments. The content is designed to cater to students from all disciplines and provide them with techniques they can employ throughout their educational and professional careers. The unit is structured around three key areas: Researching, Writing and Presenting, with each designed to
The following topics are covered in this unit:
- Basic Research Techniques.
- Information Acquisition and Organisation.
- Resource Evaluation.
- Academic Writing Skills.
- Theories of communication.
- Writing for a Corporate Audience.
- Writing for the Digital Age.
- Intercultural Communications.
- Effective Presentation Techniques.

Reading Materials
McQuail, D (2005), McQuail's Mass Communication Theory, 5th edn, London: Sage

LPR200 Public Relations Theory and Practice
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LPR100 Professional Communication Practice • Teaching methods: Lectures, Tutorials, Experiential Learning Exercises, Independent Learning Tasks and Peer Mentoring • Assessment: PR plan 35-45%; class contribution 25-35%; and an essay worth 25-35%
A Stage 2 unit of study in the Bachelor of Social Science and Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This unit provides an introduction to Public Relations principles and practices including an overview of the background to and contemporary place of the Public Relations industry and the role and responsibilities of the Public Relations specialist.

Content
- The historical development of public relations.
- The nature of contemporary public relations activity.
- Application of theories of communication to PR practice.
- The fields of practice of PR, including business, government and NGO’s.
- Roles and responsibilities of the PR practitioner, including social, organisational, administrative, cultural, ethical and legal responsibilities.
- Examination of PR practice through case studies.

Reading Materials

LPR201 Public Relations Writing
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LPR100 Professional Communication Practice • Teaching methods: Lectures, Tutorials, Experiential Learning Exercises, Independent Learning Tasks and Peer Mentoring • Assessment: Two assignments 45-55%; tutorial exercises 15-25%; and an examination 25-35%
A Stage 2 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This unit develops writing skills specific to the PR industry, introduces to students the various writing styles used in PR, and discusses how to communicate your message using the appropriate style.

Content
- Ethical and legal responsibilities of the PR writer.
- Writing persuasively.
- Researching for PR writing.
- Style and structure of PR writing.
- Writing for a range of audiences.
- Writing for the mass media.
- Campaign writing and media kits.
- Crisis communication.

Reading Materials
Foster, J (2005) Effective writing skills for public relations, 3rd edn, Kogan Page, Sterling, VA.

LPR300 Strategic Public Relations Planning
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LPR200 Public Relations Theory and Practice, LPR201 Public Relations Writing • Teaching methods: Lectures, Tutorials, Experiential Learning Exercises, Independent Learning Tasks and Peer Mentoring • Assessment: Two assignments 35-45%, tutorial exercises 15-25%; and strategic plan 35-45%
A Stage 3 unit of study in the Bachelor of Social Science and Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This unit introduces students to the application and benefits of a strategic approach to public relations, and how PR activities can add strategic value to an organisation.

Content
This unit involves understanding the elements of a P.R. strategic plan. This includes:
- How P.R. fits into the strategic planning process of organisations of varying sizes (local community organisations to multinational corporations).
- Frameworks and concepts for strategic planning.
- Visions and Mission statements.
- Strategic PR planning.
- Relationship between Marketing and Public Relations strategic plans.
- Setting objectives and measuring performance.
- Models and measures of research and evaluation.

Reading Materials

LSM101 Cultural Perspectives on Science and Technology
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: Nil • Teaching methods: Lectures (1.5 hours per week) and tutorials (1.5 hours per week) • Assessment: Class Participation (10%), Tutorial Tasks (20%), Assignments (30%), Final Assignment (40%)
A Stage 1 unit of study in all degree programs at Swinburne Lilydale.

Aims & Objectives
To introduce students to the concepts of science and scientific methodology and examine how they have shaped the nature of Western thought. The relationship between science and technology and business is explored to determine the extent to which we live in an age of technological determinism or whether science and technology respond to the needs of society. Students will also discuss the ethics of scientific research and the application of technological developments.

Content
- What is science and scientific methodology?
- What is technology and what is its relationship to science?
- The business of scientific research and technological development;
- Ethics of scientific research and development of technologies
- The science of genetic engineering;
- Social implications of genetic engineering;
- The invention of printing press and is impact on Western thought;
- Media representation of scientific research;
- The Information Superhighway;
- Convergence of computers and telecommunications;
- The growing gap between ‘information rich’ and ‘information poor’;
- Western science and Aboriginal values.
Reading Materials


LSM102 Introduction to Media

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: Lectures (1.5 hrs per week and tutorials 1.5 hrs per week) • Assessment: Class participation 10%, Presentations 10-30%, Formal Examination 30-50%, Assignments 40-50%

A Stage 1 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne, Lilydale.

Aims & Objectives
This unit introduces students to textual analysis and cultural and social theories that include semiotics, language, narrative, discourse and ideology by considering the way information is represented in the mass media. This enables students to acquire an understanding of the media’s significance in forming and shaping social and cultural attitudes.

Content
- How Cultural Theories relate to practice
- Texts and Contexts: Critical Practice
- Representation: How we represent ideas in our culture
- Representing refugees
- Ideology: Reporting War, Terrorism and Dissent
- Cash for Comment/The Politics of Talkback Radio and the Tabloid
- Textual Analysis
- Advertising: Mythic Meaning
- Realism: Reality Television
- Seeing it Up - Media Spectacle
- Stargazing: Spinning Celebrity
- Alternative Media and the ABC

Textbooks

References

LSM200 eCulture

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSM100 Texts and Contexts • Teaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Assessment will be a combination of Weblog entries (20-40%), essays (30-40%) and an exam held during the formal examination period (30-40%)

A Stage 2 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne, Lilydale.

Aims & Objectives
This unit builds upon the research skills and theoretical concepts introduced by LSM100 Texts and Contexts to enable critical readings of electronic culture. The unit draws together theory and practice to consider the following topics and issues:
- Understanding and application of critical and cultural theories.
- Insights into the role of electronic culture as the new popular culture.
- Insights into the relationship between the virtual and the real.
- Understanding the cultural implications of video and computer gaming, blogging and eCulture jamming.

Content
- Life in the Wires
- Relating Cultural Theory to Cultural Practice
- Blogging
- eCulture Jamming
- eActivism
- Alternative eCulture
- eAdoptions
- Sex in Cyberspace
- Australian eCulture
- Digital Art in a Wired World
- Colonising Cyberspace

Textbooks

References


Johnson, S 2005, Everything is good for you: how popular culture is making us smarter, Allen Lane, London.


LSM204 Cinema Studies

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSM100 Texts and Contexts • Teaching methods: Lectures (1.5 hours per week) and tutorials (1.5 hours per week) • Assessment: Assessment will be a combination of film reviews (30%), discussion threads (20%) and a formal exam held during the formal examination period (40%)

A Stage 2 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne, Lilydale.

Aims & Objectives
This unit of study brings together a dominant feature of popular culture with critical and cultural insights provided by film theory. It enables students to read against the given text (film) and to understand the impact of genre upon the production of cultural beliefs and practices.

Content
- This unit of study draws together theory and practice to consider the following topics and issues:
  - The cultural, financial and Industrial basis of film industry.
  - Applying critical and cultural frameworks to film.
  - Skills in applied textual analysis.
  - Understanding and applying critical and cultural theories to mainstream film, particularly the Hollywood Dream Factory.

References


LSM205 Journalism

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Class participation 10%, creative writing task 30-50% and feature writing task 30-50%

A Stage 2 unit of study in the Bachelor of Social Science which may also be
undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This unit brings together the theory and practice of creating content for media publications including newspapers, radio, television and the internet. It also examines the ethical framework governing journalistic practice, how they define news and how their work is influenced by the organisational context within which they work. Students will pay particular attention to how different mediums create different forms of discourse.

Content
- Journalism: Theory & Practice
- News Values
- Writing the news
- Writing your life (guest lecture)
- Research Skills
- Doing the Interview
- Feature Writing
- Writing the Feature
- Online writing
- The future of journalism

Reading Materials
Rickelton, M 2004, Writing feature stories: how to research and write newspaper and magazine articles, Allen & Unwin, Crows Nest.

LSM304 Cyberscreen Studies
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSM100 Texts and Contexts • Corequisite: LSM200 is highly recommended • Teaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Tutorial work (10-30%), class presentation (20-40%), assignments (30-70%)
A Stage 3 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This unit of study aims to examine and understand the growing dominance of the 'screen' as part of our everyday life. It does so by looking at the relationship between film, television and computer screens, as well as video games and mobile phones. It investigates the ways in which visual choreography and acuity that we have developed through art, photography, cinema and television has a place when we think about working on the very smallest screen. Now we have a screen which can provide us with visuals that are not merely add-ons to print in the rather inert way of photographs and diagrams, but that are a moveable and interactive part of the text in a way that is totally new. This subject presents students with an opportunity to develop new ways of thinking about textuality taking into account the modes of criticism that have been developed through the contributory elements of multimedia.

Content
This unit of study draws together theory and practice to consider the following topics and issues:
- The different ways we relate to the variety of screens with which we interact.
- The socio-cultural aspects of screen proliferation.
- A better understanding of the role theory plays in shaping our understanding of cyberscreen studies.
- Investigated the structure of electronic games as part of cyberscreen studies.
- The ways in which language has been altered by video and computer gaming and texting.
- Recognised the impact of interactivity.
- The issues concerning representation of gender and ethnicity on the screen.

Textbooks
Kraker, A. & Kraker, M (2004), Life in the wires: the CTheory reader, New World Perspectives/CTheory, Victoria.

References


LSM305 Australian Media Policy
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per week • Lilydale, Prahran • Prerequisite: LSM102 Introduction to Media • Teaching methods: Lectures (1.5 hours per week) and tutorials (1.5 hours per week) • Assessment: Assessment will be a combination of essays (20%-30%), discussion threads (20%-30%) and a formal exam held during the formal examination period (40%)
A Stage 3 unit of study in the Bachelor of Communications and Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne, Lilydale.

Aims & Objectives
New technologies, media ownership laws and convergence have created new challenges for legislators. Upon completion of this unit it is expected that students will have a greater understanding of the complex legislation, laws and regulations governing media practice.

Content
- This unit of study draws together theory and practice to consider the following topics and issues:
- Policy promises, regulation nightmares;
- Australian intellectual property law;
- Cyberspace law and policy;
- Electronic media law and regulation;
- The media and national security;
- Freedom of speech;
- Privacy, security and surveillance post 9/11;
- Convergence, content, computers and the law;
- Pornography online: debates/issuues/policy

Reading Materials
Rodrick, S & Butler, D, 2007 Australian Media Law, 3rs edn, Lawbook Co, Australia.

LSM306 Media Project
12.5 Credit Points • 12 Weeks • 3 Hours per week • Lilydale • Prerequisite: LSM100 Texts and Contexts or LSM102 Introduction to Media AND LSM201 Writing for the Media • Teaching methods: Seminars, lectures, consultations and workshops • Assessment: Reflective journal (10%-20%), Mid-semester report (20%-30%), Oral presentation (20%-30%), Final report (30%-40%)

Aims & Objectives
The aim of this unit is to bring together the theory and practice of creating content for media publications, and to provide students with experience of planning and implementing a media project from concept to publication. Students (individually or in groups) are expected to undertake a media project chosen from a selection of available projects or negotiated with academic staff (eg. student newspaper - both hardcopy and online, working with community groups to produce weblogs and community forums, developing content for local radio).

At the completion of this unit, students should be able to:
- Negotiate and scope a media project;
- Plan, develop and report on project progress;
- Use reflective journaling as a professional development tool;
- Work within a group to establish clear roles, responsibilities and effective working practices;
- Communicate professionally with external stakeholders to establish expectations and outcomes;
- Produce media content appropriate to the context and project deliverables;
- Clearly and concisely articulate the project process, critical issues and outcomes to a mixed audience.

Content
Topics will be included from the following:
- Planning a media project, including traditional print media, online media, video.
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- Managing a media project;
- Content strategy concerns;
- Understanding narrative structures;
- Writing for Blogs (Vlogs), web features, audio and print;
- Graphical content inclusion.

**Reading Materials**

**LSQ200 Design and Measurement 2**
12.5 Credit Points • 12 Weeks or equivalent • 3.5 Hours per Week • Lilydale • Prerequisite: LCR100 Statistics and Research Methods • Teaching methods: Lectures (2 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Assignments (20%), Test (30%) and Examination (50%)

A Stage 2 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**
- To introduce you to the statistical package SPSS for Windows (SPSS stands for Statistical Package for the Social Sciences).
- To develop your capacity to carry out independent statistical investigations, together with an awareness of the assumptions and limitations involved with the generalisation of results of such investigations.

On completion of the unit students will be able to:
- Make a clear statement of the objectives of a study.
- Prepare the data for analysis by SPSS for Windows.
- Analyse the data using SPSS for Windows.
- Interpret the results and write a concise report.

**Content**
Module 1: Using SPSS for Windows for Basic Data Analysis:
- Review of basic statistics: providing a framework for the unit.
- Introduction to SPSS for Windows: exploring existing data sets, summarising the distribution of a categorical variable.
- Describing the distribution of a metric variable.
- Describing the relationship between two metric variables.
- Testing significance using Pearson's r.
- Comparing the relationship between two metric variables for two or more sub-groups.
- Describing the relationship between two categorical variables.
- Testing significance using the chi-square statistic.
- Comparing the relationship between two categorical variables for two or more sub-groups.
- Describing the relationship between a categorical variable and a metric variable.
- Testing significance using t-tests.
- Comparing the relationship between a categorical variable and a metric variable for two or more sub-groups.
- Entering your own data into SPSS.

Module 2: Analysis of Variance:
- Review of variance and t-tests.
- Introduction to the analysis of variance: the single factor, independent groups design.
- Using SPSS to produce an analysis of variance.
- Effect size and power analysis for ANOVA.
- Reporting an analysis of variance. Analytical comparisons in the single factor independent groups design.
- Analysis of variance for the single factor within subjects design.
- Analysis of variance for the completely randomised factorial design.
- Analysis of variance for the two factor mixed design.

**Reading Materials**
Francis, G (2005), Analysis of variance, SUT, Melbourne.
Coakes, S (2005), Analysis without anguish, John Wiley & Sons, Queensland.

**LSQ201 Survey Research Methods**
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LCR100 Statistics and Research Methods (plus LBM100 Marketing Concepts and LBM200 Marketing Behaviour recommended for Marketing major) • Teaching methods: Lectures (1 hr per week), tutorials (1 hr per week) and computer laboratories (1 hr per week) • Assessment: Workbooks (40%), Practical test 10%, Survey development and report 50%

A Stage 2 unit of study in the Bachelor of Business and the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**
Survey Research Methods aims to identify and understand the methodologies used in survey research. The course also aims to apply the knowledge and theories learned from LCR100 Statistics and Research Methods to the process of survey research.

Students should be able to:
- Define the research problem, making a clear statement about the objectives of the study;
- Understand the link between the research problem and the research design;
- Conduct secondary research using various sources;
- Critically analyse research designs and choose an appropriate design for the project;
- Design and test a quantitative data collection instrument;
- Undertake fieldwork, including interviewing; critically analyse non-sampling errors;
- Develop analysis skills using a statistical software package (SPSS for Windows);
- Develop professional business report writing skills;
- Improve oral and visual presentation techniques.

**Content**
- Introduction to survey research; survey versus census.
- Sampling techniques.
- Collecting and entering data.
- Data analysis.
- Presentation of findings: report writing and oral presentation.

**Textbooks**

**Recommended Reading**
Patten, ML 1998, Questionnaire research, Pyrczak Publishing, California.

**LSQ202 Qualitative Research**
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LCR100 Statistics and Research Methods • Teaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Class presentations 10-20%, written assignments 30-50% and class test 40-50%

A Stage 2 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**
The unit aims to develop understanding of fundamental differences between qualitative and quantitative research methodologies including principles associated with inductive and deductive research designs. Students will be able to identify when it is appropriate to use a qualitative approach, or a combination of qualitative and quantitative approaches in a particular research situation. Students will be able to collect and interpreting data as well as developing awareness of the limitations of the research process. Through lectures, and a range of learning resources; and by means of practical exercises students will gain an appreciation of both the methodology and methods of qualitative research. Planning a research project and completion of a research exercise will provide
experience in selecting and evaluating appropriate approaches to qualitative inquiry.

Content
- Introduction to qualitative research - rationale, historical background.
- Approaches - Interpretivism, Social Anthropology, Content analysis, Action Research, Feminist research, Grounded theory, Evaluation.
- Research Design and process - formulating research questions, data collection and conceptualizing outcomes.
- Theoretical Sensitivity.
- Data Management - thematic analysis and coding.
- Methodological and Ethical Issues.
- Presenting results.

Reading Materials
Berg, B 2004, Qualitative research methods, 5th edn, Pearson Education, Massachusetts.
Liamputtong P & Ezzy D 1999, Qualitative research methods, Oxford University Press, Melbourne.

LSQ300 Design and Measurement 3
12.5 Credit Points • 12 Weeks or equivalent • 3.5 Hours per Week • Ulydale
Prerequisite: LSQ200 Design and Measurement 2 • Teaching methods: Lectures (2 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Test (15%), Assignments (20%) and Examination (65%)
A Stage 3 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The aims are to provide you with the skills necessary to:
- Critically assess statistics presented in journal articles.
- Choose and conduct appropriate statistical analyses on your own data.
- Write informative reports on statistical analyses.
- On completion of the unit students will be able to:
  - Make a clear statement of the objectives of a study.
  - Prepare data for analysis using appropriate data screening techniques.
  - Analyse the data using appropriate multivariate statistical techniques.
  - Interpret the results and write a concise, informative report.

Content
- Review of Bivariate Regression, Data Screening and Data Transformation:
  - Theory behind simple linear regression.
  - Cautionary tales in bivariate regression.
  - Data sorting and data selection in SPSS.
  - Data transformation.
  - Data screening.
- Multiple Regression:
  - Multiple regression using SPSS for windows.
  - Understanding partial and part correlation coefficients.
  - Selecting and using different regression strategies.
  - Presentation of results.
  - Testing the assumptions in multiple regression.
  - Testing for interactions in multiple regression.
- Multivariate Analysis of Variance:
  - Review of Analysis of Variance.
  - Single factor, independent groups design MANOVA.
  - Testing assumptions and other practical issues.
  - Single factor within subjects design MANOVA.
- Factor Analysis:
  - The steps involved in factor analysis.
  - Performing a factor analysis using SPSS for Windows.
  - Constructing Scales.
  - Refining Your Factor Analysis.

LSQ301 Research Project
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Ulydale
Prerequisite: LSQ200, LSQ300 Design and Measurement 3 and either LSQ201 Survey Research Methods, or LSQ202 Qualitative Research • Teaching methods: Lectures (1 hr per week) and tutorials/seminars/computer laboratories (2 hrs per week) • Assessment: Journal 10%, Research proposal 10%, Presentation 20%, Attendance and participation 10%, Final Research Report 50%.
A Stage 3 unit of study in Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
To provide students with the opportunity to strengthen their social statistics and research methods knowledge and skills by applying them in a real-world context.
- Formulate and refine a theoretically sound research question.
- Locate and obtain the data necessary to address this question.
- Prepare the data for analysis.
- Choose appropriate analyses to perform on these data.
- Understand the assumptions and limitations involved in the analyses.
- Write an informative report on the research topic.
- Make a formal presentation of your conclusions.

The following set of objectives details our intended outcomes for students of this unit.
We expect that students will be able to: pose the question; locate and obtain the data for the project; analyse the data using SPSS for Windows; and interpret the results, write a research report and make a formal presentation of the research outcomes.

Reading Materials
Patten, ML 1998, Questionnaire research, Pyrczak Publishing, California.

LSIS100 Introduction to Sociology
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Ulydale
Prerequisite: Nil • Teaching methods: Lectures (1.5 hrs per week) and participation in tutorials (1.5 hrs per week) • Assessment: eg. Two Essays 30%, Tutorial contribution / debate / paper 20% and Examination 50%.
A Stage 1 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The unit aims to increase student awareness of how sociologists use theories and research methodologies both to test and generate scientific knowledge; and to understand dynamics of social interaction and structure of the social world. Students are introduced to three fundamental domains of social inequality; class, gender and ethnicity, and the interface between these, through examining a number of key social institutions such as family, education, work and religion. Through active participation in tutorial discussions and engaging in reasoned debate, students can improve discursive, analytical and evaluative competencies. The subject will enhance oral presentation skills, report writing ability, critical thinking and capacity to engage in library-based research.
Content
- Theories and Practice: Sociological Perspectives and Research Methods.
- Culture and Identity.
- Difference, Deviance and Social Control.
- Dimensions of Inequality: Class, Gender and Ethnicity/Race.

Reading Materials
Matson, R 2005, In the spirit of sociology, Pearson Education, USA.

LSS200 Difference, Deviance and Conformity
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per week • Lilydale • Prerequisite: LSS100 Introduction to Sociology or equivalent • Teaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Critique of Sociological Study (30%), Tutorial Presentation/Debate (20%), Long Essay (40%), Tutorial attendance and participation (10%).
A Stage 2 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The unit examines a variety of sociological perspectives on "deviant" behaviour and the social responses it evokes. It introduces students to the sociological concepts of "deviance" and "difference", and explores some key perspectives on crime, social problems, and social control. These major forms of social control - the legal system, the medical system and the welfare system - and the cultural transmission of conformity are considered. Students are encouraged to apply sociological theories to the analysis of substantive issues such as de-institutionalization and eating disorders, youth homelessness and white-collar crime, and to examine their social policy implications. The unit will improve students skills in oral and written expression and enhance their ability to engage in critical analysis.

Content
Perspectives and Problems:
- Structural Functionalism Perspective / Deviance
- Conflict Perspectives / Corporate Crime
- Feminist Perspectives / Prostitution/Rape/Domestic Violence
- Interactionist Perspectives/ Mental Illness
- Foucaultian Perspectives/ Surveillance
Mechanisms of Social Control:
- The Legal System / Decriminalization
- The Welfare System / De-Institutionalisation
- The Medical System / Disabilities
- The Cultural System 1/ Religious fundamentalism
- The Cultural System 2/ Disciplining the Body
- Difference/Sexuality

Reading Materials
Pontell, HN (2005), Social deviance/readings in theory and research 5th edn, Pearson, New Jersey.

LSS201 Sociological Perspectives
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per week • Lilydale • Prerequisite: LSS100 Introduction to Sociology or equivalent • Teaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: a typical example would be: Essay 20%, Comparative Analysis 25%, Tutorial contribution and paper 20%, Examination 35%
A Stage 2 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
Sociological techniques cannot be applied productively without an understanding of the theoretical issues informing sociological explanation. By encouraging students to identify links between theoretical debates and current social issues, this unit will assist students consolidate and extend their knowledge of sociological theory.
In addition, students will explore ways in which a variety of sociological perspectives may be applied to address practical issues for example formulating social policy and conducting sociological research, thereby improving understanding of the relationship between theory and empirical evidence. It will enable students to recognise how values and ethics are implicated in social research through demonstrating how these may impact on choice of research problem, research outcomes, as well as on subsequent formulation of social policy.
Students will plan and produce effective written essays and verbal presentations, using support of visual aids. By using collaborative methods to aid in selection, organisation and presentation of information; as well as by problem solving students will gain experience in team participation.
The skills, understandings and techniques introduced in this unit are highly transferable to other fields of university studies, thus enriching student engagement at university, in responsible citizenship, as workplace members; and as life long and flexible learners.

Content
- The contribution of the Enlightenment and Counter-Enlightenment to the development of nineteenth century sociological thought.
- Changes in Worldviews from the Middle Ages to Modernism.
- Classical sociological theorists, E.g. Comte, Marx, Durkheim and Weber.
- Introduction to a range of sociological paradigms (E.g. Structural Functionism, Interpretivism, Critical Theory, Feminism and Post-modernism).
- Contemporay sociological perspectives including Symbolic Interactionism, Structuration, Feminism and Postmodernism.
- Analysis of core assumptions, ideological foundations, and approaches to knowledge and explanation of various perspectives.
- The challenge of post modernism to sociological paradigms of inquiry.

Textbooks

Recommended Reading
Ashley, D & Orenstein, D 2001, Sociological theory: classical statements, Allyn and Bacon, Massachusetts.

LSS202 Ethnicity, Culture and Diversity Management: Australia in the Global Context
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per week • Lilydale • Prerequisite: LSS100 Introduction to Sociology or equivalent • Teaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: eg Short Essay 30%, Tutorial Presentation/Debate 20%, Long Essay 40% and Tutorial attendance and participation 10%.
A Stage 2 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The unit explores how ethnic, racial, social and cultural factors have shaped the social, economic, and political development of Australian society since 1788. It investigates the impact of national and international factors on migration, settler practices and ethnic relations in Australia and another industrialized country. Students are introduced to sociological analyses of issues associated
with migration, ethnic identity, racism, multiculturalism, citizenship, globalisation, national identity, nationalism and human rights. The implications of these analyses for policy formulation is examined. Students' understanding of how migration shapes international relations, societies and nation states is developed.

Content
- Invasion or Settlement?
- Creating Australian Society
- Indigenous Australians - Issues and Debates
- Conceptual and Theoretical frameworks:
  - Migration, Emigration and Immigration -Theories and Practices
  - Ethnicity and Ethnic Identity -Theoretical Understandings
  - Ethnocentrism and Racism - Explanations and Reactions
- Immigration and Settlement:
  - Germany-foreigners, Immigrants, Asylum Seekers
- Australia - Immigration: Past and Present
- Managing Diversity in Australia - From Assimilation to Multiculturalism
- Current Debates and Future Trends:
  - Citizenship, Human Rights and Migration
- Gendered Migration and Gendered Citizenship - Women and Migration
- Migration in the 21st Century - Australia in the Global Context

Textbooks

Recommended Reading


LSS300 Organisations and Society
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSS100 Introduction to Sociology equivalent, and two second year units • Teaching methods: Lectures (1.5 hrs per week), and participation in tutorial discussions, debates and team work (1.5 hrs per week) • Assessment: Assignments 15%-35%, tutorial participation 15%-20%, Essays 40%-50% and a class test 30%

A Stage 3 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The unit introduces students to sociological and managerial approaches within organisations and provides knowledge regarding the importance and influence of organisations in the life of individuals, nations and in the global arena. In addition, the subject analyses the emergence, growth and persistence of vast and extensive, multi-dimensional, corporately owned and bureaucratically managed global enterprises. It draws on a range of sociological, management and economic theoretical frameworks to assess various aspects of organisations, such as structural arrangements, organisational culture, formal and informal power structures, gender/race/ethnicities, managerialism, ideologies, and the impact of international migration. This critical analysis will be applied to public and private sector organisations as well as to not-for-profit enterprises, that is, Third Sector organisations. Forms of organisational restructuring, the emergence of small businesses, and changes in Australian organisational approaches and patterns are considered within the context of globalisation.

To achieve these aims the unit will:
- Expose students to major sociological and management perspectives employed in the analysis and evaluation of organisations.
- Analyse how governments and other agencies determine legal, economic and/or social and economic policy responses to social/business issues.
- Enhance students knowledge and understanding of how gender and race/ethnicity impact on the structure and processes of organisations as well as on managerial and leadership positions.
- Critically explore how organisations influence and frequently determine individual life choices and impact on the national well-being.
- Extend students understanding of globalisation in the post-modern world.

Content
- Historical Development of Large-Scale Organisations.
- Bureaucracy, Rationalism and Democracy.
- Comparison of Public, Private and Third-Sector Organisations.
- Dimensions of Globalisation.
- Sociological Perspectives and Theories of Managerialism.
- Modern and Postmodern Organisations.
- Gender, Race/Ethnicity and Organisational Power.
- Values, Ethics and Organisations.

Recommended Reading


LSS302 Research Approaches
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSS100 Introduction to Sociology equivalent and two second year units • Teaching methods: Lectures (1.5 hrs per week), tutorial discussions, debates and team work (1.5 hrs per week) • Assessment: Assignments, tutorial contribution 15%-30%, observation exercise and report 20%-30%, research proposal and research report; and a class test worth 30%-40%.

A Stage 3 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The unit provides an understanding of underlying ideological assumptions and the relationship between sociological theories and a range of social research practices and techniques. It offers practical experience and skill acquisition in social research through use of different research methods and designs. The unit familiarises students with principles and processes of designing and conducting a sociological research project as well as writing a research report. In addition, students will acquire knowledge and understanding of the complexity of ethical issues in all phases of a research project such as the relationship between the researcher and the researched. That is, of the implications of research on people, for people, and with people. Students will also acquire knowledge about issues of confidentiality and use and potential misuse of data. The unit demonstrates the applicability and usefulness of sociological research techniques and approaches to a range of other disciplines and professional fields.

To achieve these aims the unit will:
- Analyse major debates in and about sociological research.
- Familiarise students with a number of social science research techniques.
- Increase students understanding of practical implications of adopting a particular research process.
- Develop students competency in designing and conducting a research project.
- Enhance student knowledge about the influence of social, economic and political environments and how ideological persuasions delimit both choice of research topics and methods.
- Increase students ability to utilize social science research approaches/techniques in a variety of fields, such as marketing, management, community development etc.
- Advance students ability to develop, write and present a research proposal and a research report.
Content
- Theoretical Assumptions of Quantitative and Qualitative Research Methodologies
- Research Design
- Measurement
- Different Research Approaches
- Principles of Sampling
- Data Gathering Methods
- Data Analysis, Interpretation and Presentation
- Research Ethics
- Report Writing

Reading Materials
Berg, B 2004, Qualitative research methods for the social sciences, 5th edn, Pearson, Boston.
Neuman, WIL 2008, Social research methods, 6th edn, Pearson/Alyn & Bacon, Boston.
Betts, K; Farganeran, K; Seitz, A 2005, Writing essays and research reports in the social sciences, Thompson, Melbourne.

SSS303 Sociology and Social Policy
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LSS100 Introduction to Sociology and two second year sociology units • Teaching methods: Lectures (1.5 hrs per week) and tutorials (1.5 hrs per week) • Assessment: Tutorial participation 20%; Group Presentation 35%; Major Essay (3000 words) 45%
A Stage 3 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The unit reviews major theoretical and ideological approaches to social policy and introduces major policy issues, such as problem identification, policy formulation and implementation, evaluation and monitoring. Particular attention is given to the analysis of changes in approaches to welfare in light of shifts in capitalism to more aggressive forms of accumulation and the consequent expectations that this creates for welfare recipients. Other substantive fields of interest are health policy, indigenous health, mental illness and ageing, environmental sustainability; population issues; and ethics.

Content
- Social Theory and Social Policy: Sociology and Social Policy, Functionalist, Pluralism, the Corporatist Critique and Social Policy, Conflict Theories and Social Policy. Feminism, Environmentalism and Social Policy.

Recommended Reading
Hanick, L 1999, Health policy in the market state, Allen and Unwin, St Leonards.

LSY100 Psychology 100
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Nil • Corequisite: LCR100 Statistics and Research Methods • Teaching methods: Lectures, Tutorials, Drop-ins, Online Materials • Assessment: Examinations, Research Reports and Critical evaluation
A Stage 1 unit of study in the Bachelor of Social Science which may also be taken in any other degree at Swinburne Lilydale.

Aims & Objectives
LSY100 and LSY101 are designed to introduce students to the content and method of psychology

Content
Topics include: psychology as a science, ethics in research, biological foundations of behaviour, sensation, perception, consciousness, learning, memory and language.

Recommended Reading
Students wishing to familiarise themselves with concepts in psychology could read any recent introductory text available from most regional libraries.
Findlay, B 2006, How to write psychology research reports and essays, 4th edn, Prentice Hall, Sydney.

LSY101 Psychology 101
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSY100 Psychology 100 and LCR100 Statistics and Research Methods • Teaching methods: Lectures, Tutorials, Drop-ins, Online Materials • Assessment: Examinations, Research Reports and Essay
A Stage 1 unit of study in the Bachelor of Social Science which may also be taken in any other degree at Swinburne, Lilydale.

Aims & Objectives
LSY100 and LSY101 are designed to introduce students to the content and method of psychology

Content
This unit concentrates on aspects of psychology not covered in LSY100. These include motivation, emotion, personality, relationships, stress and coping, psychopathology and treatments. Students are also introduced to social and developmental psychology. The design and analysis of experimental studies form a major part of the teaching program.

Recommended Reading
Students wishing to familiarise themselves with concepts in psychology could read any recent introductory text available from most regional libraries.
Findlay, B 2006, How to write psychology research reports and essays, 4th edn, Prentice Hall, Sydney.

LSY200 Cognition and Human Performance
12.5 Credit Points • 12 Weeks or equivalent • 3.5 Hours per Week • Lilydale • Prerequisite: LSY100 Psychology 100, LCR100 Statistics and Research Methods, LSY101 Psychology 101, LSY200 Design and Measurement 2 • Teaching methods: Lectures, Tutorial/Practical Sessions and Project Work • Assessment: Practical report, Examination
A Stage 2 unit of study in the Bachelor of Social Science which may also be taken in any other degree at Higher Education Lilydale.

Aims & Objectives
The aim is to provide up-to-date coverage of recent theoretical and methodological advancements in cognitive psychology.

Content
This unit of study examines theories of cognitive functioning and processes, including perception, attention, memory, problem-solving, decision-making, language, and aspects of learning. Some contemporary issues and theoretical applications will also be considered.

Recommended Materials
LSY201 Developmental Psychology
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSY100, LSY101, LCR100, LGQ200, LGQ300, and LSY200 or LSY2011 • Teaching methods: Lectures (2 hrs per week) and tutorials (1 hr per week) • Assessment: Critical Review 10%; Research Report 40%; Examination 50%

A Stage 2 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree at Swinburne Lilydale.

Aims & Objectives
Developmental Psychology aims to understand the processes involved in psychological growth and change with age. The focus is on social, emotional, cognitive and language development during the early periods of life from infancy and childhood through to adolescence.

Content
Topics include:

• Biological foundations of the person.
• Pre-natal influences on development.
• The birth process.
• Children's earliest behaviour.
• Examination of interactions between children and their caregivers and the development of their perceptual, social and emotional abilities.
• Development of cognitive and language skills, and their powerful influence on all aspects of children's behaviour, development of personality and gender identity.
• The role played by the family, school, the media and peers in the socialisation of children.

Throughout the course, the focus is on theoretical approaches to child development, with a thematic approach as opposed to a chronological approach.

Recommended Reading
Berk, LE (2003), Child development, 6th edn, Allyn and Bacon, Boston.

LSY300 The Psychology of Personality
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSY100, LSY101, LCR100, LGQ200, LGQ300, and LSY200 or LSY2012 • Teaching methods: Lectures (2 hrs per week) and tutorials (1 hr per week) • Assessment: Critical Review 10%; Research Report 40%; Examination 50%

A Stage 3 unit of study in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
Having completed this unit, students should be able to do the following:

• Explain the main features of some of the major approaches to the psychology of personality (psychodynamic - i.e. psychoanalytic/neoanalytic; the trait approach, the social - learning and social - cognitive approaches, and the motivational and narrative approaches).
• Be able to describe basic elements of historically important theories within each perspective.
• Be able to discuss some major elements of contemporary theories within each perspective.
• Be able to critically evaluate how various approaches to personality explain specific issues such as the unconscious, the self, personality change, the effect of early childhood experiences, the effect of motivation on personality.

Content
LSY300 starts by taking a brief overview of the evolutionary perspective on personality, then moves to exploring the psychoanalytic perspective of Freud in particular, with reference to his contemporaries and to the neo-Freudians (including Jung and Adler). This perspective is followed by an investigation of the trait (dispositional) perspective of Cattell, Eysenck, Costa, McCrae (a.k.a. the 'Big Five') and others. The social-learning and social-cognitive adaptation perspectives follow. Here, theorists such as Bandura, Skinner, Lazarus and others are studied. One or two major representative theories in each of the perspectives will be examined in terms of assumptions, personality concepts, personality assessment, research, and applications. Contemporary issues in personality theory such as personality and emotion, the narrative self, the cognitive self, and personality assessment, will also be examined in some detail.

Textbooks

Recommended Reading
Carver, CS & Scheier, M 2000, Perspectives on personality, 4th edn, Allen & Bacon, Boston.

LSY301 Psychological Measurement
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSY100, LSY101, LCR100, LGQ200, LGQ300, LSY200, LSY201 • Teaching methods: Lectures (1 hr per week) and laboratory sessions (2 hrs per week) • Assessment: Research Project 50%; Examination 50%

A Stage 3 unit of study in the Bachelor of Social Science and the Bachelor of Applied Science which may also be taken in any other course at Lilydale.

Aims & Objectives
The aim of this unit is to provide students with an understanding of the theories and methods of psychological testing.

Content
Theories and methods of assessing psychometric properties of psychological tests: test construction, administration and scoring of tests; evaluating the reliability and validity of tests; how to interpret test results according to norms and standard scores.

Textbooks

Recommended Reading

LSY304 Abnormal Psychology
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSY100, LSY101, LCR100, LGQ200, LGQ300, LSY200 or LSY201 • Teaching methods: Lectures (2 hrs per week) and tutorials (1 hr per week) • Assessment: Class presentation 10%; Essay 40%; Examination 50%

A Stage 3 unit of study in the Bachelor of Social Science which also may be taken in the Bachelor of Business.

Aims & Objectives
The unit is designed to introduce students to the ways in which human behaviour patterns have been conceptualised as 'abnormal' or dysfunctional. In examining such abnormal behaviours, students are introduced to major systems of classifying mental disorders, in particular the multiaxial system adopted in DSM-IV. The course then focuses on major examples of psychological disorders in terms of their phenomenology and nosology, as well as theories about aetiology.

Content
The general approach taken to understanding disorders is multidimensional, seeking to integrate information from biological, sociocultural and psychological research. Specific disorders examined may include: schizophrenia, affective disorders, anxiety disorders, eating disorders, substance-related disorders, disorders first diagnosed in childhood and adolescence, dissociative disorders, intellectual disability or personality disorders. Additional topics covered may include suicide and violent behaviours, mental disorders and the law.

Textbooks

Recommended Reading
LSY307 Social Psychology
12.5 Credit Points • 12 Weeks • 3 Hours per Week • Lilydale • Prerequisite: LSY100, LSY101, LCR100, LSQ200, LSC300 and one of LSY200 or LSY201 • Teaching methods: Lectures and Tutorial/Practical Sessions • Assessment: Practical reports and an Examination
A Stage 3 unit of study in the Bachelor of Social Science which may also be taken in any other degree at Swinburne Lilydale.

Aims & Objectives
This unit involves the scientific study of behaviour in a social context. The aim is to introduce students to the key theories and research methods used by social psychologists to explain and predict people’s thoughts, feelings and actions in social situations.

Content
The unit covers the history, methods and ethics of social psychology, the areas of social cognition, attributions, attitudes, prejudice and stereotypes, social influence, attraction, relationships and group processes. Some areas to which social psychological knowledge is often applied, such as culture, health and law, are also covered.

Textbooks

LTE100 Introduction to Management
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: Lectures and Tutorial • Assessment: Experiential class activities (15%), case study (15%), report on Internationalisation of an Australian Company (30%) and examination (40%).
A Stage 1 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
To provide a broad understanding of management and its importance in enabling organisations to be effective within a globalised diverse environment.

After completing this unit students should be able to:
- Describe the four basic management functions of planning, organising, leading and controlling across an organisation.
- Understand the application of some basic management principles in an increasingly global business environment.
- Understand the importance of behaving in a professional and ethical manner.
- Prepare academic reports and essays including case studies using the appropriate format.
- Have an appreciation of the importance of management to an organisation.

Content
Topics covered include the introduction to:
- The challenge of management, including the diversity of skills required.
- The historical theories and views on management.
- The nature of the external and internal environment including culture.
- Social responsibility and ethics in management.
- Planning and creative decision-making, including developing strategies.
- Organising, leading and managing individuals and groups, including motivation.
- Communication, including professional report writing.
- Operational management, including managing information systems.
- Managing through change and conflict.
- Managing across international and regional boundaries.

Reading Materials

LTE200 Organisations and Management
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LTE100 Introduction to Management • Teaching methods: Lectures and Self Directed Learning • Assessment: Individual Examination 40%, Group Work 40%, Individual Work 20%
A Stage 2 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
To provide an understanding of the issues facing managers in contemporary Australian organisations and the context in which they operate and make decisions through self directed learning approach.

After completing this subject students should be able to:
- Apply the management concepts of Planning, Organising, Leading and Controlling.
- Behave in an ethical manner throughout the semester and produce work of a high standard.
- Develop a creative idea for a new venture and rise to the challenge of working ‘outside the square’.
- Produce a Business Plan to achieve a successful venture.
- Submit a professional report that reflects the work they have undertaken over the semester.
- Self-direct their own learning managing yourself and others in an organisational setting.
- Manage relationships with peers, consultants, and senior management.
- Operate effectively in large and small semi-autonomous work teams; and
- Appreciate the value of both independent and team study and build on fundamental academic and research skills such as using the library and other information sources; analysing and synthesising information; written and verbal communication skills including report and essay writing.

Content
- Organisational strategy and structure.
- Organisational environments and culture.
- Leadership, power and authority.
- Interpersonal communication and group dynamics.
- Managing change.
- Social responsibility and ethics.

Reading Materials
Davidson, P & Griffin, RW 2003, Management, John Wiley & Sons, Milton.

LTE201 Human Resource Management
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LTE100 Introduction to Management • Teaching methods: Virtual Lectures and Tutorials • Assessment: Individual Examination 40%; Group Work 30%; Individual Work 30%
A Stage 2 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
To provide a broad understanding of Human Resources Management function and its strategic importance in developing human resources as a competitive advantage for contemporary organisations.

After completing the subject students should be able to:
- Have an appreciation of the importance of the HR Manager in being involved with the development of the HR and related strategies within an organization;
- Understand the nature and importance of HR as an organizational asset;
- Have a knowledge of the theories, techniques and approaches to managing people-related problems and issues;
- Develop and deliver need based training programs that add value to the organization; and
- Be able to make ‘connections’ between other management functions and the requirements of HRM practices in contemporary organizations.
Content

- Determining, Attracting And Selecting Human Resources.
- Developing And Rewarding Human Resources & Career Planning.

Textbooks

- Recommended Reading


LTE202 Organisational Behaviour

12.5 Credit Points • 12 Weeks or equivalent • 2 Hours per Week • Lilydale • Prerequisite: LTE100 Introduction to Management • Teaching methods: Virtual Lectures and tutorials • Assessment: End-of-Module Reports (60%), Individual Formal Examination (40%)

A Stage 2 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives

- To provide students with a sound knowledge and personal understanding of the impact of human behaviour on work in groups and organisations.
- To understand the application of organisational behaviour theoretical concepts and apply them to the management of human resources.
- To explain the determinants of individual behaviour, group dynamics and organisational processes, and their impact on organisational effectiveness.
- To understand the significance of key organisational processes as they apply to current trends in the management of human resources.

Content

There is an increasing emphasis in organisations on creating self-managing work teams, and students will be asked to systematically develop competencies in working in group situations. Student experiences both in and out of the class will be used as a starting point for this development. By reflecting on their experience and applying their personal learning, students will gain insight into the behaviour of people as individuals and group members within organisational settings. They will be challenged to learn about their own behaviour and their impact on others.

Textbooks

- Recommended Reading


LTE300 Organisational Change and Development

12.5 Credit Points • 12 Weeks or equivalent • 2 Hours per Week • Lilydale • Prerequisite: Any two of LTE200 Organisations and Management, LTE201 Human Resource Management, LTE202 Organisational Behaviour • Teaching methods: Virtual lectures and tutorials • Assessment: Group verbal presentation 10%, individual written reports 30%, examination 40%, fortnightly discussion questions 20%

A Stage 3 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives

- To develop students' understanding of the theories and processes used to bring about large-scale organisational change.
- To provide students with a structure to enable the exploration of some of the interventions used by Change Agents at the individual, group and organisational process level.

Objectives:

- To appreciate the professional and ethical attitudes required by the contemporary change agent.
- To have an understanding of the challenges facing local and global organisations in the contemporary business environment.
- To analyse available information incorporating the cultural, social and economic environments so as to develop a correct diagnosis of problem areas within an organisation.
- To work both independently and collaboratively to analyse an organisational situation from the perspective of different stakeholders.
- To draw on the literature to develop a number of effective interventions, and analyse the risks, success and/or failures associated with the proposed changes in the areas of human processing, restructuring, human resource management, technology and strategy.
- To evaluate and monitor change implementation strategies.
- To follow through the change process in order to understand the key steps involved in the management of change within an organisation.
- To present an oral presentation and written report on a change model that reflects the above objectives.

Content

- Corporate and societal culture.
- Globalisation: its impact, cause and effect.
- The economics of organisational change.
- The meaning and nature of work.
- Rightsizing and its effect on internal environment.
- Health and wellbeing of employees.
- Development and implementation of interventions.
- Managing diversity: recruitment, selection, training and promotion (national and international).
- Organisational development.

Textbooks

- Recommended Reading


LTE301 Strategic Planning and Project Management

12.5 Credit Points • 12 Weeks or equivalent • 2 Hours per Week • Lilydale • Prerequisite: Any two of LTE200 Organisations and Management, LTE201 Human Resource Management, LTE202 Organisational Behaviour • Teaching methods: Virtual lectures and tutorials that include a self-managed simulated strategic business • Assessment: Examination 40%, Individual submissions 20%, group strategic plan and stakeholder's oral presentation and written report 40%

A Stage 3 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.
Aims & Objectives

To provide an understanding of the importance of strategic planning in an organisation, and the components that make up the planning and operational process. There is a particular emphasis on operating a profitable company to support its mission and operations, human resources management, and information systems with the strategic management process. A further aim is for students to heighten personal awareness of the importance of developing strategies for themselves and their career.

After completing the subject students should:

- Have a general perspective on the complexity of the role of the general manager/strategist in a variety of domestic and global situations.
- Be able to integrate the functional business disciplines (marketing, finance, operations) with the components that make up the planning and operational management structure.
- Be aware of the interdependence between the above business disciplines.
- Have increased skills for analysing and researching in a variety of decision-making settings.
- Be able to identify major issues in complex situations and how to prepare alternative solutions and make decisions.
- Have gained a good knowledge of the concepts used in strategic management - namely the formulation of strategy content, its implementation and control and the translation of these concepts into practice.
- Understand the ethical issues involved in strategic management, including the social responsibilities inherent in ethical behaviours which include an awareness of moral and legal problems that face strategic managers; and
- Have an appreciation for the cultural diversity of the workforce and the constituents of the environment in general.

Content

- Process of Strategic planning: formulation, implementation, evaluation and control, including its purpose and analyses of diverse environments.
- The role of management and human resources in the planning process including the integration of functional disciplines and information systems.
- Planning for innovation and development of alternative solutions and effective ethical decision making.
- Project management including differentiating strategic direction of single and corporate businesses.
- Project management software.

Textbooks


Recommended Reading

Hanson, D & Dowling, P Hill, MA, Ireland, RD & Hostikka, RE 2002, Strategic management: competitiveness and globalisation, Pacific Rim edn, Thomson Learning, Ohio.


LTE302 Leadership and Management

12.5 Credit Points • 12 Weeks or equivalent • 2 Hours per Week • Lilydale • Prerequisite: Any two of LTE200 Organisations and Management, LTE201 Human Resource Management, LTE202 Organisational Behaviour • Teaching methods: Virtual lectures and tutorials • Assessment: Individual report 45%, Tutorial Learning Group 15%, Formal examination 40%

A Stage 3 unit of study in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives

- To develop the professional expertise of leadership and management.
- To become aware of the role of leaders and managers in the broader context of the Pacific Rim.

The objectives of this unit are:

- To understand the concepts and importance of leadership and management in contemporary Australian organisations.
- To understand the difference and relatedness between leadership and management.
- To create opportunities for students to engage in individual and group tasks requiring leadership and management skills; managing relationships; and learning through observation and reflection.
- To develop a greater belief in the personal capacity to directly influence outcomes; and
- To further enhance knowledge and skills associated with organising and managing so as to increase expertise in the use of the library and information sources; analysis and synthesis; written and verbal communication skills that include report and essay writing skills and interviewing and questioning skills.

Content

This unit explores the conflicting needs of business organisations, to have managers for day-to-day operations, and leaders to create the vision and new approaches to forge a successful transfer into this millennium. Whether managers and leaders are mutually exclusive is critically debated. Lecture topics include:

- The nature and importance of leadership
- Traits, motives and characteristics of leaders
- Charismatic and transformational leadership
- Ethical leadership
- Knowledge management and the learning organisation
- Contingency and situational leadership
- Power and politics and influence tactics for leaders
- Coaching/mentoring skills
- Entrepreneurship creativity and leadership
- International and cultural diversity
- Development, succession and fellowship

Textbooks


LTT100 Introduction to Tourism

12.5 Credit Points • 12 Weeks • 3 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: Lectures, Tutorials, Experiential Learning Exercises, Group-based Work, Independent Learning Tasks and Peer Mentoring • Assessment: Assignment 30%; Group Work 10%; Tutorial attendance 10%; Examination 50%

A Stage 1 unit of study in the Bachelor of Business (Tourism and Management) which may also be undertaken in any other degree program at Lilydale.

Aims & Objectives

- To develop knowledge and understanding of the links between theory and practice in tourism.
- To provide an introduction to the historical, social and business factors which drive the tourism industry, internationally, nationally and locally.
- To equip students with an understanding of the structure of the tourism system and an ability to assess its effectiveness.

Content

- History of Tourism: pilgrimage to national pastime.
- The Psychology of Tourism: personal motivations and needs.
- The Sociology of Tourism: understanding tourists.
- Macroeconomics and Tourism: organisational, management and marketing factors in the industry.
- Case Studies: enterprises involved with tourism.
- Global trends and flows in tourism.

Reading Materials


Additional readings available by means of Swinburne library electronic counter reserve.
LTT201 Tourism Destination Management
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LTT100 Introduction to Tourism • Teaching methods: Tutorials, Experiential Learning Exercises, Group-based Work, Independent Learning Tasks and Peer Mentoring • Assessment: Assignments 40%, Tests 10%, Examination 50%.
A Stage 2 unit of study in Bachelor of Business (Tourism and Management) which may also be undertaken in any other degree program at Lilydale.

Aims & Objectives
• To identify the degree of interdependence in a region's tourism industry.
• To study the roles and functions of destination tourism organisations.
• To examine the contribution of technological advancement to tourism destination management.
• To develop strategies for the sustainability of a destination's tourism industry.

Content
• Tourist Destination Areas: the regionalisation process, growth and development.
• The Destination Environment: physical, sociocultural, economic.
• Sustainability and Management Processes.
• Tourism and the Community.

Textbooks

Recommended Reading

LTT202 Tourism Enterprise Development
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LTT100 Introduction to Tourism • Teaching methods: Lectures, Tutorials, Experiential Learning Exercises, Group-based Work, Independent Learning Tasks and Peer Mentoring • Assessment: Assignment 35%, Group Tasks 15%, Examination 50%.
A Stage 2 unit of study in Bachelor of Business (Tourism and Management) which may also be undertaken in any other degree program at Lilydale.

Aims & Objectives
• To locate individual enterprises in the tourism system.
• To explain the processes involved in feasibility studies and attraction development.
• To critically analyse the management and marketing of existing attractions.
• To develop the ability to implement effective management plans.
• To facilitate informed predictions about the future of the attractions sector.

Content
• The Attractions Sector: an overview.
• Attraction Project Development: preparing, designing, financing and managing.
• Managing Attractions: day-to-day operations and marketing.
• Managing for Sustainability: best practice, proactive planning.

Textbooks

Recommended Reading
French, CN, Craig-Smith, SJ & Collier, A 1995, Principles of tourism, Longman, South Melbourne (pp. 123-7, Chap. 8).

LTT203 Tourism Services
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBM100 Marketing Concepts, LBM200 Marketing Behaviour; LTT100 Introduction to Tourism • Teaching methods: Lectures, Tutorials, Experiential Learning Exercises, Group-based Work, Independent Learning Tasks and Peer Mentoring • Assessment: Assignments 35%, Mid-Semester test 15%, Examination 50%.
A Stage 2 unit of study in Bachelor of Business (Tourism and Management) which may also be undertaken in any other degree program at Lilydale.

Aims & Objectives
• To examine the nature of service products, especially in the tourism industry.
• To analyse the problems encountered and develop procedures for avoiding or solving these.
• To develop understanding of services provision and best-practice management in the hospitality sector.
• To encourage innovative approaches to the marketing of tourism services.

Content
• The nature of service products: intangibility, inseparability.
• The hospitality sector: the concept of quality, best-practice management.
• Marketing of services: planning and implementation.
• The organisation of conferences etc.
• Case studies.

Recommended Reading

LTT204 Regional Issues in Tourism
12.5 Credit Points • 12 Weeks • 3 Hours per Week • Lilydale • Prerequisite: LTT100 Introduction to Tourism • Teaching methods: Lectures, Tutorials, Experiential Learning Exercises; Independent Learning Tasks and Peer Mentoring • Assessment: Individual Assignment 30%, Country Quiz 10%, Discussion Paper 10%, Examination 50%.
A Stage 2 unit of study in Bachelor of Business (Tourism and Management) which may also be undertaken in any other degree program at Lilydale.

Aims & Objectives
Although tourism is clearly a global phenomenon, the issues facing tourism operators and developers are, more often than not, regional in nature. The formation of regional alliances, ranging from simple cooperation to highly formalised intra-regional communities such APEC - Asia Pacific Economic Cooperation past are now more commonplace, as regions seek to achieve trade and financial advantage by combining their resources.

Paradoxically, tourism, which by its very nature is driven by a sense of difference, is increasingly succumbing to the forces of globalisation which seek to impose a standardised vision of service without regard for diversity.
The unit seeks to highlight the particular issues facing what is arguably the world's most significant and rapidly growing region, the Pacific Rim, with particular emphasis on the challenges and future directions for tourism.

Content
• Development of the Pacific Basin and its Implications for Tourism.
• The Impact of Newly Industrialised Countries on Population Demographics and Demand for Tourism.
• The Democratisation of China and its Impact on Tourist Flows.
• The Changing Face of Demand for Tourism in the Asia-Pacific Region.
• Intra-regional Alliances in Asia-Pacific Tourism: Marketing and Ownership Examples.

Reading Materials
Weaver, DB 1998, Ecotourism in less developed countries, CAB International, Oxford.

LTT300 Tourism Channels and Travel Management
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBM100 Marketing Concepts, LBM200 Marketing Behaviour; LTT100 Introduction to Tourism • Teaching methods: Lectures, Tutorials, Experiential Learning Exercises, Group-based Work, Independent Learning Tasks and Peer Mentoring • Assessment: Assignments 35%, Mid-Semester test 15%, Examination 50%.
A Stage 2 unit of study in Bachelor of Business (Tourism and Management) which may also be undertaken in any other degree program at Lilydale.

Aims & Objectives
• To examine the nature of service products, especially in the tourism industry.
• To analyse the problems encountered and develop procedures for avoiding or solving these.
• To develop understanding of services provision and best-practice management in the hospitality sector.
• To encourage innovative approaches to the marketing of tourism services.

Content
• The nature of service products: intangibility, inseparability.
• The hospitality sector: the concept of quality, best-practice management.
• Marketing of services: planning and implementation.
• The organisation of conferences etc.
• Case studies.

Recommended Reading

Additional readings available from Swinburne Library Electronic Counter reserve.

Swinburne University of Technology | Undergraduate Course Handbook 2008
Tasks and Peer Mentoring: Assessment: Assignment 35%; Test 15%; Examination 50%. A Stage 3 unit of study in the Bachelor of Business (Tourism and Management) which may also be undertaken in any other degree program at Lilydale.

Aims & Objectives
- To build an appreciation of the spatial nature of tourism flows.
- To understand the role of intermediaries such as travel agents and tour operators in the distribution of tourism products.
- To introduce the components of the value chain involved in the organisation of travel.
- To develop skills, knowledge and attitudes required for successful tour operations.

Content
- The Travel Sector: from departure to homecoming.
- Tour Organisation: management and marketing, ‘responsible’ travel.
- Special Events: planning, promoting, running and evaluating.

Recommended Reading

LTT302 Planning and Management in Ecotourism
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LTT100 Introduction to Tourism • Teaching methods: Tutorials, Experiential Learning Exercises, Group-based Work, Independent Learning Tasks and Peer Mentoring • Assessment: Debate 15%, Concept Plan 30%, Individual Research Assignments 25%, Class Test 30%

A Stage 3 unit of study in the Bachelor of Business (Tourism and Management) which may also be undertaken in any other degree program at Lilydale.

Aims & Objectives
- To demonstrate the need for environmentally sensitive management of tourism resources.
- To encourage the development of attitudes, skills and knowledge required for sustainable tourism operations.
- To examine the regulatory and legal framework within which ecotourism operators must work.
- To consider the factors which will influence ecotourism operations in the future.

Content
- The concept of sustainability.
- Evolution of ecotourism: problems and solutions.
- Environmental impact identification and assessment, legal constraints.
- Planning and decision-making.
- Case studies.

Textbooks

Recommended Reading
Additional readings available by means of Swinburne library electronic counter reserve

LZ3301 Work Integrated Learning Project
12.5 Credit Points • Fifteen weeks (15) of one semester • LZ3301 is the equivalent to one unit of study for one semester and the equivalent of approximately 160 & 180 hours in total • Lilydale • Prerequisite: All Stage 2 units for a selected major/minor • Teaching methods: Skills workshops in the first five (5) weeks to equip students with the abilities to carry out a project. Students will undertake a real world project for the remainder of the semester • Assessment: Project Charter 20% - 30%, Progress Report 5% - 15%, Final Project Presentations 10% - 20%, Final Project Reports 40%-60%

A final year unit of study which can be undertaken by students from any Swinburne Lilydale course.

Aims & Objectives
- Be able to successfully undertake/manage a workplace based project
- Be able to describe the concepts underpinning the planning and implementation of a project based approach
- Be able to analyse the strategies used in undertaking a workplace based project, indicating what contributes to successful outcomes
- Be able to undertake effective oral presentations which report on their practical experience in project management
- Be able to articulate how they have benefited by undertaking this unit, in particular by communicating on the learning that has occurred

Content
The unit provides students with the opportunity to apply what has been learned in the first two years of study, to a project in a real world organisation. It aims to strengthen students understanding and practice of project management and to provide advanced knowledge and experience in the initiation, planning, control and delivery of successful project outcomes. This unit may also provide exposure to issues of negotiating with project stakeholders, managing risk and expectations and implementing technical change. Team dynamics and personal styles of participation and leadership, and research methodologies are also covered in this unit, as well as reporting and presentation skills.

LZZ306 Industry-Based Learning (6 month placement)
0 Credit Points • Usually 26 Weeks (including annual leave) • Lilydale • Prerequisite: Completion of Stage 2 studies with a credit average. Teaching methods: in essence, students will be required to self-manage all aspects of the unit, thereby being responsible for their own success. Assessment: A final year unit of study which may be undertaken by students from any Swinburne Lilydale degree.

Aims & Objectives
This unit uses a mix of methods directed to achieving the stated objectives, as determined by the nature of the placement.
- To provide students with the opportunity to apply theoretical knowledge and skills gained during their studies in a practical/workplace environment.
- To provide focus and direction to students in both their final year of studies and future career path.
- To provide students with the opportunity to enhance existing skills and knowledge and to further develop skills and knowledge in their major/minor areas of study.
- To provide an environment and experience in which students will enhance their personal and professional maturity.
- To provide students with insights into and an understanding of contemporary workplace culture, issues and directions including global and technological development.

Content
- Students will work in the industry placement to which they have been assigned.
- Students will work under supervision of their industry supervisor and with support from a university supervisor and other university staff as required.
- Students will complete the tasks required to receive accreditation for the unit.

Reading Materials
As appropriate to the discipline.

LZZ312 Industry-Based Learning (12 month placement)
0 Credit Points • Usually 52 Weeks (including annual leave) • Lilydale • Prerequisite: completion of Stage 2 studies with a credit average • Teaching methods: In essence, students will be required to self-manage all aspects of the unit and are thereby responsible for their own success. Assessment: Assignments (University) and Projects (Workplace Duties)

A final year unit of study which may be undertaken by students from any Swinburne Lilydale course.

Aims & Objectives
- To provide students with the opportunity to apply theoretical knowledge and skills gained during their studies in a practical/workplace environment.
- To provide focus and direction to students in both their final year of studies and future career path.
- To provide students with the opportunity to enhance existing skills and
knowledge and to further develop skills and knowledge in their major/minor areas of study.

- To provide an environment and experience in which students will enhance their personal and professional maturity.
- To provide students with insights into, and an understanding of, contemporary workplace culture, issues and directions including global and technological development.

Content

- Students will work in the industry placement to which they have been assigned. Students will work under supervision of their industry supervisor, with support from a university supervisor and other university staff as required.
- Students will complete the tasks required to receive accreditation for the unit.

Reading Materials

As appropriate to the discipline.

VFTV105AD Film and Television Guided Projects 1

0 Credit Points • 16 Weeks • 3 Hours per Week • Prerequisite: Nil • Corequisite: VFTV111AD Film and Television Technology Production 1, VFTV112AD Film and Television Language and Communication 1, VFTV113AD Film and Television Production 1 • Teaching methods: Classes will be conducted in a studio environment, on location, through seminars, student consultation/discussion, demonstrations and critiques • Assessment: Projects will be appraised progressively

A unit of study in the Associate Degree of Film and Television.

Aims & Objectives

- To assist students with research project work.
- To provide a supportive environment which will enable students to develop creative and independent thinking.
- To offer additional tuition for film and television subjects.
- To provide training in future employment skills related to film and television.

Content

Film and Television Guided Projects 1 provides students with a support structure for their studies in film and television while they are in the process of adapting to a new learning environment. The unit will help students to perform successfully in a competitive study environment and to gain the perspective necessary to manage a number of different study commitments at once. It will further provide skills in:

- Time management
- Finding, selecting, organising and referencing information
- Analysing information from competing explanations and sources
- Preparing oral and visual presentations
- Working in groups.

Reading Materials


VFTV106AD Film and Television Guided Projects 2

0 Credit Points • 16 Weeks • 3 Hours per Week • Prerequisite: Nil • Corequisite: VFTV121AD Film and Television Technology Production 2, VFTV122AD Film and Television Language and Communication 2, VFTV123AD Film and Television Technology Post Production 2 • Teaching methods: Classes will be conducted in a studio environment, on location, through seminars, student consultation/discussion, demonstrations and critiques • Assessment: Projects will be appraised progressively

A unit of study in the Associate Degree of Film and Television.

Aims & Objectives

- To assist students with research project work.
- To provide a supportive environment which will enable students to develop creative and independent thinking.
- To offer additional tuition for film and television subjects.
- To provide training in future employment skills related to film and television.

Reading Materials


VFTV111AD Film and Television Technology Production 1

12.5 Credit Points • 16 Weeks • 4 Hours per Week • Prerequisite: Nil • Corequisite: VFTV105AD Film and Television Guided Projects 1 • Teaching methods: Production studio, laboratory and seminar based tuition with continual practical experience through exercises and set tasks • Assessment: Portfolio 55%, presentation 15%, examination 30%

Aims & Objectives

- To ensure a thorough understanding of the fundamental principles, production techniques and practices of the film, television and digital imaging industries.
- To instil the importance of working within industry guidelines and practices.

Content

Film and Technology Production 1 will focus specifically on both traditional and digital film and video production outcomes. It will provide a theoretical guide to the principles of film and television practice and will address areas such as pre­visualisation and production pathways. It will provide students with a comprehensive and practical introduction to industry standard production equipment and delivery formats. It will also provide an opportunity for students to consolidate these principles and techniques in a practice-based production outcome.

- Introduction to Production Protocols.
- Introduction to Pre-Visualisation.
- Production principles and techniques including Lighting and Cinematography.
- Sound Recording and Production Pathways.
- Introduction to Production Equipment.
- Practical experience in both traditional and digital filmmaking techniques.

Reading Materials

Katz, SD, Shot by Shot, Studio City, California, 2001.

VFTV112AD Film and Television Language and Communication 1

12.5 Credit Points • 16 Weeks • 6 Hours per Week • Prerequisite: All Corequisite: VFTV105AD Film and Television Guided Projects 1 • Teaching methods: Seminar-based tuition with continual practical experience through exercises and set tasks • Assessment: Written assignments (script) 85%, presentation 15%

A unit of study in the Associate Degree of Film and Television.

Aims & Objectives

• To instil the practice of storytelling and ideas development as a fundamental component of the creative/filmmaking process.
• To instil the writing process as a fundamental and ongoing part of the students' creative practice.
• To explore the role of the writer and director within the filmmaking and digital imaging production process.
• To increase cinema appreciation, encourage dialogue and social interaction and generate an active film culture within the school.

Content

Film and Television Language and Communication 1 explores the process of communicating through the moving image and consists of three distinct elements. This unit investigates the scriptwriting process within the context of industry development and script formats. Students will address areas such as ideas development, narrative structure, characterisation and visual storytelling. Students are provided with a thorough understanding of the director's role within the production process and their relationship with key-creatives. Students are introduced to areas such as directing actors, acting techniques and directing a crew. This unit includes a compulsory weekly screening, which aims to increase the students' appreciation of cinema, to encourage dialogue and social interaction and to generate an active film culture within the school. This screening is intended to expose students to an eclectic range of context, genres, formats and styles.

Reading Materials

Brooks, P, "Introduction to Digital Video compression Practical experience in theoretical guide to the principles of film and television practice and will address traditional and digital film and video production outcomes.

VFTV113AD Film and Television Technology Post Production 1

12.5 Credit Points • 16 Weeks • 5 Hours per Week • Prerequisite: All Corequisite: VFTV105AD Film and Television Guided Projects 1 • Teaching methods: Production Laboratory and seminar based tuition with continual practical experience through exercises and set tasks • Assessment: Portfolio 55%, presentation 15%, examination 30%

A unit of study in the Associate Degree of Film and Television.

Aims & Objectives

• To ensure a thorough understanding of the fundamental principles, post production techniques and practices of the film, television and digital imaging industries.
• To instil the importance of working within post production industry guidelines and practice.

Content

Film and Television Technology Post Production 1 will focus specifically on both traditional and digital film and video production outcomes. It will provide a theoretical guide to the principles of film and television practice and will address areas such as Post Production Pathways, Video compression and Production Management. It will provide students with a comprehensive and practical introduction to industry standard computing systems, networks and software packages and delivery formats. It will also provide an opportunity for students to consolidate these principles and techniques in a practice-based post production outcome. Concepts in Visual Language and Realisation Production principles and techniques including Directing and Editing Introduction to Post Production Equipment Introduction to Digital Video compression Practical experience in both traditional and digital Post Production techniques.

Reading Materials

McIntosh, J, Toporek, C & Stone, C, Mac OSX in a Nutshell, O'Reilly, California, 2003.
VFTV121AD Film and Television Technology Production 2
12.5 Credit Points • 16 Weeks • 4 Hours per Week • Prerequisite: VFTV111AD Film and Television Technology Production 1 • Corequisite: VFTV106AD Film and Television Guided Projects 2 • Teaching methods: Seminar-based tuition with continual practical experience through exercises and set tasks. • Assessment: Portfolio 55%, presentation 15%, examination 30%
A unit of study in the Associate Degree of Film and Television.

Aims & Objectives
• To ensure a thorough understanding of the fundamental principles, production techniques and practices of the film, television and digital imaging industries.

• To consolidate the skills and techniques developed in Film and Television Technology Production 1.

Content
Film and Television Technology Production 2 focuses specifically on traditional documentary techniques. It provides a theoretical guide to the principles of documentary practice and covers areas such as production management, interview techniques, and research and pre-production for documentary production. This unit provides students with a comprehensive and practical introduction to industry standard production equipment and delivery formats. It also provides an opportunity for students to consolidate these principles and techniques in a practice-based production outcome.

• Introduction to the principles of documentary.

• Introduction to camera techniques for documentary production.

• Introduction to writing documentary.

• Introduction to directing documentary.

Reading Materials

VFTV122AD Film and Television Language and Communication 2
12.5 Credit Points • 16 Weeks • 6 Hours per Week • Prerequisite: VFTV112AD Film and Television Language and Communication 1 • Corequisite: VFTV106AD Film and Television Guided Projects 2 • Teaching methods: Seminar-based tuition with continual practical experience through exercises and set tasks • Assessment: Written assignments (scrpio) 85%, presentation 15% A unit of study in the Associate Degree of Film and Television.

Aims & Objectives
• To install the practice of storytelling and ideas development as a fundamental component of the creative/filmmaking process.

• To further explore the fundamentals of industry standard development processes and documentation for a range of genres and formats.

• To explore the role of the writer and director within the filmmaking and digital imaging production process.

• To increase cinema appreciation, encourage dialogue and social interaction and generate an active film culture within the school.

Content
Film and Television Language and Communication 2 consolidates the skills and techniques developed in Film and Television Language and Communication 1. This unit investigates the process of new project development, scripting for documentary, animation and interactive productions. It provides students with a deeper understanding of the director's role within the production process and students are introduced to areas such as directing for animation, documentary and interactive productions. This unit also includes compulsory weekly screening, which aims to increase the students' appreciation of cinema, to encourage dialogue and social interaction and to generate an active film culture within the school. This screening continues to expose students to an eclectic range of content, genres, formats and styles.

Reading Materials
Halpern, M, Writing the second act: building conflict and tension in your film script, Studio City, Focal, Oxford.

VFTV123AD Film and Television Technology Post Production 2
12.5 Credit Points • 16 Weeks • 5 Hours per Week • Prerequisite: VFTV112AD Film and Television Technology Post Production 1 • Corequisite: VFTV106AD Film and Television Guided Projects 2 • Assessment: Portfolio 55%, presentation 15%, examination 30%
A unit of study in the Associate Degree of Film and Television.

Aims & Objectives
• To ensure a thorough understanding of the fundamental principles, post production techniques and practices of the film, television and digital imaging industries.

• To consolidate the skills and techniques developed in Film and Television Technology Post Production 1.

Content
Film and Television Technology Post Production 2 focuses specifically on both traditional and digital animation techniques. It provides a theoretical guide to the principles of film, television and animation practice and covers areas such as production management, animation and motion graphic design. This subject provides students with a comprehensive and practical introduction to industry standard production equipment, computing systems, networks and software.
packages and delivery formats. It also provides an opportunity for students to consolidate these principles and techniques in a practice-based production outcome.

- Introduction to the principles of timing and movement in animation.
- Introduction to the principles of character animation including walk cycles, lip-syncing and characterisation.
- Introduction to life drawing for animation.
- Introduction to motion graphic design.
- Introduction to compositing.

Reading Materials


CourseFinder
For detailed course and subject information visit: www.swinburne.edu.au/coursefinder
or ring the Information Hotline 1300 368 777

FAQ
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