Course Information
For up-to-date course and subject information visit CourseFinder at:
www.swinburne.edu.au/coursefinder
Swinburne University of Technology

Croydon Campus
Norton Road, Croydon, Victoria 3136 Australia
Telephone: (03) 9214 8000
Facsimile: (03) 9725 8665

Hawthorn Campus
John Street, Hawthorn, Victoria 3122 Australia
Telephone: (03) 9214 8000
Facsimile: (03) 9819 6454

Healesville Campus
237 Maroondah Highway, Healesville, Victoria 3777 Australia
Telephone: (03) 9597 1800
Facsimile: (03) 9597 1899

Prahran Campus
High Street, Prahran, Victoria 3181 Australia
Telephone: (03) 9214 8000
Facsimile: (03) 9529 5294

Lilydale Campus
Melba Avenue, Lilydale, Victoria 3140 Australia
Telephone: (03) 9214 8000
Facsimile: (03) 9215 7070

Wantirna Campus
369 Stud Road, Wantirna, Victoria 3152 Australia
Telephone: (03) 9214 8000
Facsimile: (03) 9800 3369

Email: info@swin.edu.au
Website: www.swinburne.edu.au

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 subject details.

To locate a specific course, consult the main contents page, opposite, and identify the course title and page reference you require. All subject details for all courses are contained in the final chapter in alphanumeric order.

Course descriptions

Courses are listed in alphabetical order under the offering Division/School. Each course description outlines a course structure which includes a list of required subjects.

Subject details

All subjects may be found in the final chapter of the Handbook. All subjects 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: www.swinburne.edu.au/corporate/registrar/ppd/main.htm

CourseFinder

Swinburne’s CourseFinder is the source of this handbook’s course information, which was downloaded in September 2003. The database is updated regularly throughout the year. For the most up-to-date information, the database can be accessed from our website under ‘Courses’ or at: www.swinburne.edu.au/coursefinder

The Undergraduate Course Handbook is published each year. Students should carefully read all official correspondence, the student newspaper ‘The Swine’, 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 or 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 2003.

The Freedom of Information Act 1982 (“the Act”), which came into force on 5 July 1983, applies to Swinburne University of Technology. The purpose of the Act is to extend the right of access to information to persons requesting a document held by an agency. Applicants are required to lodge their request in writing to the Freedom of Information Officer. It is the policy of the University to conform with the spirit and intent of the Act with regard to disclosure.

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

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 Swin Burn, a small river that flows into the North Tyne, where he built a castle. He became known as William Swinburne 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 Mullets (Stars) are what are known heraldically as ‘differences’, which may often serve to indicate an association with another armigerous body or family. The four Mullets 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 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 1969, 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 orientated 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 operations are now conducted at six campuses: Croydon, Hawthorn, Healesville, Lilydale, Prahran and Warrnambool, reflecting the University’s commitment to provide expanded and more accessible educational opportunities to the residents of Melbourne’s eastern suburbs.

While focusing on its regional responsibilities, Swinburne is heavily involved in international initiatives and plays a significant part in the internationalisation of Australia’s tertiary education system. In 1998 Swinburne established the Laem Chabang School of Engineering in Thailand providing VET programs in electrical/electronic and mechanical engineering, information technology and English.
language studies. In 2000, Swinburne Sarawak Institute of Technology was established in Kuching, East Malaysia. It provides seamless multisectoral tertiary education in engineering (computer systems, electronics and mechatronics), and business. A new venture in Vietnam is under development.

Our Future
To be a pre-eminent entrepreneurial university from the Asia-Pacific, thriving on new ideas and knowledge and exploiting our intersectoral heritage to create value for our stakeholders.

Our Business
To pursue the generation, transfer and creative application of knowledge and skills, using our intersectoral operations and programs.
To provide innovative education, research and training for the benefit of:
- students
- strategic partners
- industry and business generally
- staff
- the diverse communities and societies in which we operate.

Our Strategic Themes

The Entrepreneurial University
Swinburne will be a renowned centre for entrepreneurship and innovation. Entrepreneurship and innovation will be a hallmark of everything that we do. We will prepare students to participate in the new economy and society of the twenty-first century and heighten their awareness of, and capacity to make the choice between, employment and self-employment.

The Research Intensive University
We will scale up the levels of research activity in all Schools and Institutes in the Higher Education Division so that the Division becomes truly research-intensive.

Internationalisation
Swinburne will become known as one of Australia’s most internationalised universities. All students will be able to gain exposure to international experience through the curriculum and through direct exposure to international environments. In a sense, every Swinburne student will be an international student. We will also further internationalise the student body.

Flexible Learning and Teaching
We will build optimal learning environments throughout the University. These learning environments will develop in all students their innate capacities for creativity and deep learning, and will be characterised above all by flexible learning and a more learner-centred approach.

The Intersectoral Advantage
We will capitalise on the advantages presented by operating at both the vocational education and training level and the higher education level in order to provide students, industry and business with manifold options.

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

Higher Education
The Higher Education Sector offers professional qualifications ranging from degrees of Bachelor to graduate qualifications (certificates, diplomas and degrees of Master and PhD).
The Higher Education Sector comprises two divisions: Higher Education (Hawthorn /Prahran) and Swinburne, Lilydale.
A total of 14,320 students were enrolled in the Higher Education Sector in the year 2002.

Technical and Further Education (TAFE)
The TAFE Sector offers courses at professional and para-professional level covering diploma, certificate, apprenticeship, VCE and access programs. A number of specialist courses are also provided for industry and the community.
The TAFE Sector comprises four Teaching Operations: School of Arts, Hospitality and Sciences; School of Business and eCommerce; School of Engineering; School of Social Sciences.
A total of 25,417 students were enrolled in TAFE courses in 2002.
Swinburne campus location map
Governance Structure

Council

Statutory Boards of the University
- Academic Board
  - Higher Degrees Committee
  - Academic Programs Quality Committee
  - Academic Policy & Planning Committee
- Divisional Advisory Boards:
  - Higher Education (Hawthorn/Prahran)
  - Lilydale
  - TAFE
- Board of TAFE Studies

Committees of Council
- Joint Planning and Resources (JPRC) Committee
- Finance Committee
- Staffing Committee
- Campus Planning & Building Committee
- Legislation Committee
- Executive Committee
- Search Committee
- Honorary Degrees & Professor Emeritus Committee
- Remuneration Committee
- Ethics Committees
- Audit Committee
Higher Education Division (Hawthorn/Prahran)

Deputy Vice-Chancellor (Higher Education)

Pro Vice-Chancellor (Academic) and Deputy Head

Higher Education Divisional Office

Australian Graduate School of Entrepreneurship (AGSE)
National Institute of Design
School of Biophysical Sciences & Electrical Engineering
School of Business
School of Engineering and Science
School of Information Technology
School of Mathematical Sciences
School of Social and Behavioural Sciences

Higher Education Divisional Office

Australian Centre for Emerging Technologies and Society (ACETS)

Centre for Astrophysics and Supercomputing
Centre for Ultrafast Laser Spectroscopy
Centre for Biomedical Instrumentation
Centre for Convergent Technologies (CCT)
Centre for Imaging and Applied Optics (CIAO)
Centre for Micro-Photonics (CMP)
Neuroscience Laboratory
Swinburne Sensory Neurosciences Laboratory

Centre for Business and Management Research (CBMR)
Centre for Applied and Bio-Colloid Sciences
Centre for Intelligent Agents and Multi-Agent Systems (CIAMAS)
Centre for Mathematical Modelling
Centre for Intelligent Systems and Complex Processes (CIAMAS)
Centre for Internet Computing and eCommerce (CICEC)
Centre for Molecular Simulation
Centre for Software Engineering
Swinburne Computer Human Interaction Laboratory (SCHIL)
Deputy Vice-Chancellor and Director (TAFE)

Executive Director, Educational Development

Executive Director, Strategic & Business Development

Director, TAFE School of Arts, Hospitality & Sciences
- Manager, Arts
- Manager, Hospitality and Tourism
- Manager, Horticulture and Environmental Sciences
- Manager, Industrial Sciences
- Centre for Sustainability
- Centre for Occupational Health and Safety

Director, TAFE School of Business & eCommerce
- Manager, Administration and Business Technology
- Manager, Financial Services
- Manager, Management
- Manager, Marketing and International Studies
- Manager, Business Enterprise Centre
- Centre for New Manufacturing

Director, TAFE School of Engineering
- Manager, Building and Transport
- Manager, Computing and Information Technology
- Manager, Electrical and Electronics
- Manager, Mechanical and Automotive
- ESTI - Emergency Services Training Initiative
- Centre for Health and Wellbeing

Director, TAFE School of Social Sciences
- Manager, Access
- Manager, Regional Learning Networks
- Manager, Innovation in Education

Manager, TAFE Marketing

Manager, Professional Development

Manager, Strategic Planning

Manager, Continuing Education

Manager, English Language Centre

Manager, International Projects

Manager, TAFE International Recruitment and Marketing

Manager, Industry Consulting Services

Manager, Business Development

Manager, Tertiary Press

Manager, Childcare Centre

Manager, Projects
Staff and Officers of the University

University Council

Chancellor
Dr D. Mitchell, BSc(Melb), PhD(Lond)

Appointed by the Governor-in-Council
K. Bowlen, BA(SIT)
K. Cato, ADIA, ASI, AIGA, ARMIT, AWADA, FAMI, FIQA
D. Eyton, BEd(Mon), MA(Melb)
H. Gray, BSc(Hons), LLB(Hons)(Melb)
R. Hodges, DipEng(Aero)(RMIT)
J.R. Wilson, BCom(Hons), MBA(Mon)

Appointed by the Minister for Tertiary Education and Training
K. Cheave, BEcon(LaT)

Appointed by the University Council
J. Austin, BA, DipEdSheff
T.W. Brown, FCA, ASCPA (Deputy Chancellor)
J. King, BA(Murd), FAICD
S. Lipski, AM, BA(Melb)
D. Watson, DipMS(Lon), FCSI, FAICD, FIA8F
K.N. Watson, AM, BA, DipEd, BEd(Melb)

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

Chair of the Academic Board
Prof H. Lueckenhausen, GradDip(Industrial Design)(RMIT), DipEd(Haw), MDisIA

Chair of the Board of Technical Studies
J. Bissland, BA(Hons)(Saskatchewan), MA( Ontario), GradDipChildDevelopment, GradDipEd(Melb), MEdStudies(Mon)

Elected by Higher Education Academic Staff
G.M. Leonard, BSc(Melb), MACS

Elected by TAFE Academic Staff
D. Street, BA(Hons)(Otago), DipEd(Christchurch)

Elected by General Staff
B. Camfield, BA(SIT), AssocDipLib(RMIT)

Elected by Higher Education Students
M. Kataniya

Elected by TAFE Students
S. Desmond

Council Secretariat

Secretary
Dr M. Tomlinson, BA(Hons)(Melb), MA(LaT), PhD(Cantab)

Executive Officer
A. Daun, BA(Hons)(Exon)

Chancellery

Chancellor
Dr D. Mitchell, BSc(Melb), PhD(Lond)

Vice-Chancellor and President
Prof I. Young, BE(Hons), MEngSc, PhD(JCU), FIEAust, FTSE

Deputy Vice-Chancellor (Higher Education)
Assoc Prof D. Murphy, BE(Mon), MSc(Lond), DPhil(Oxon), FIIEAust, CPEng

Deputy Vice-Chancellor (Lilydale)
Prof B. van Ernst, AM, BA, MEd, PhD(LaT), TPTC, MACE

Deputy Vice-Chancellor (TAFE)
A. Crozier, BSc(Hons)(Lond), PGCE(Camb)

Pro Vice-Chancellor Research
Prof K.C. Pratt, BE(Chem), PhD(Melb), FICE, FIEAust, FTS

Vice-President (Resources)
S. Murby, BSc(Hons)(LaT), GradDipEd(Haw), FRSA

Vice-President (Student Affairs)
S. Davies, BA(Hons)(Leic), DipMktg(CIM), AFAMI, CPFM

Director, Internal Audit
J. Van der Pal, DipAccy(FCT), BBus(SIT), MEdAdmin(UNE), AASA, CPA, RCA

Director, Swinburne Knowledge
Dr B. Whan, BE(Hons), PhD, AIMM, MIEAust

Director, Australian Foresight Institute (AFI)
Prof R. Slaughter, BA(Hons), PhD, FAWSF

Director, Foresight Planning and Review
M. Conway, BA(Griffith), GradDipTertEd, Medi(Hons)(UNE)

University Commercial and Intellectual Property Lawyer
T. Rowan, LLB(Hons), BA(Melb)

Executive Officer to the Vice-Chancellor
Dr M. Thorne, BA(Hons), LLB(Hons), PhD(Exon)

University Secretary
Dr M. Tomlinson, BA(Hons)(Melb), MA(LaT), PhD(Cantab)

Office of the Pro Vice-Chancellor Research and Industry Relationships

Pro Vice-Chancellor
Prof K.C. Pratt, BE(Chem), PhD(Melb), FICE, FIEAust, CPEng, FRACI, Cchem, FTSE

Graduate Research School

Director Research
S. Mosca, BA(Melb), GradDipBusSys(RMIT)

Director Graduate Studies
Dr D. Barron, BA(Exon), BE(Hons), PhD

Industry Relationships

Director
J. Kay, BA, DipEd(Melb), GradDipEd(Counselling)(RMIT)

Office of the Deputy Vice-Chancellor Learning and Teaching

Deputy Vice-Chancellor
Prof B. van Ernst, AM, BA, MEd, PhD(LaT), TPTC, MACE

Teaching and Learning Support

Director
G.D. Arger, TeachCert, BA(Hons)(NU), MEd(Hons)(UNE)

Deputy Director
P.N. Ling, BCom(Melb), DipEd(Melb), BEd(Melb), PhD(Melb)
Senior Educational Development Advisor
K.K. Wong, CertTertiaryTeaching(HKPU), AdDipEd(HK), Licentiate DipEd(Chartered College of Preceptors, UK), BEd(WACAE), MEd(HK), MA(Deakin), PhD(VUT)

Educational Development Advisors
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C. Vaillence, BBus(Ada)(RMIT)
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P.O. Xavier, MA(Eric), MEd(Adm), PhD(SUT)

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J. Gerstman, BA, BEd(Mon), Med(Melb)

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J. Gregory, BA(Melb), MSwilat
D. Mohan, BA(Hons)(USM), MBA(EAU)
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**Languages: Japanese**

**Lecturers**
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A. Killey
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I. Foley, BSc(Hons), PhD(Melb)
R. Jagielski, MSoc(Koorkov), PhD(StG)

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O.K. Burmeister, BAppSc(SIT), DipMin(StA), BTh(Hons)(StA)
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**Lecturers**
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M. Finn, BA(Hons), MPhil(Griffith), PhD(SIT)
F. Gleeson, BA(Melb), BEd(Melb), MA(LaT)
L. Gye, BA(SIT), DipEd(Melb), MA(RMIT)
E. Milne, BA(Hons)(SUT)
J. Schwartz, BSc, BEd(Mon), MEd(LaT)

**Psychology**

**Chair**
G.W. Bates, BCom, BA(Hons), MA(ClinPsych), PhD(Melb), MAFS

**Professor**
Prof S.M. Moore, BSc(Hons), DipEd, MEd(Melb), PhD(Florida State), MAFS

**Associate Professor**
Assoc Prof A.D. Knowles, BA(Hons)(Melb), MEd, PhD(Mon), MAFS

**Senior Lecturers**
R.H. Cook, BSc(Hons)(Melb), MEd(Mon), PhD(LaT), MAFS
E. Hardie, BA(Uni), PhD(Melb), MAFS

**Lecturers**
S. Buzwell, BA(Hons)(Melb), PhD(LaT)
N. Crafti, BSc(Hons)(LaT), DPsych(Counselling Psychology)(SUT), MAFS
C. Critchley, BA, GradDipAppPsych(SUT), PhD(Melb)
B.M. Findlay, BA, BSc(Hons), MSc, PhD(Melb), MAFS
R. Galligan, BSc(Hons)(WA), MA, PhD(Toronto)
G. Murray, BA(Hons), BSc, GradDipGenTher, MPsych, PhD(Melb), MAFS
C. Wood, BSc(Hons), Clinical PhD(LaT)

**Social and Policy Studies**

**Chair**
K.J. Rowley, BA(Hons)(Melb)

**Associate Professors**
Assoc Prof K. Betts, BA(Hons), PhD(Mon)
Assoc Prof M. Gilding, BA(Hons)(ANU), PhD(Mac)

**Reader**
A.E. Gare, BA(Hons)(WA), PhD(Murd)

**Senior Lecturers**
F.J. Healy, BA(Hons)(NUl), MA, MS, PhD(PennState)
P.J. Love, MA(LaT), PhD(ANU)

**Lecturers**
K. Farquharson, BA(Berk), MA, PhD(Deakin)
L. Turner, BA(Hons), PhD(Deakin)

**Australian Centre for Emerging Technologies and Society (ACETS)**

**Director**
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**Manager**
J. Wheeler, BA(Hons)(SUT)

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P. O’Connor, DipTchg (Prim), GradDip(LiteracyEd)(VicColl)

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School Administration Manager
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M. Pettsilino, BSciEd(Melb)
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Swinburne, Lilydale Division

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Divisional Manager
J.E. Austin, BA(SUT)

Director, Teaching and Learning Services
G. Arger, MEd (Hons)

Manager, Student Administration
G. Schnabl, BSc(Mon), DipEd(Mon)

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Deputy Head of Studies
B.R. Clarke, BEd(LLM(Mon), GradDipMkt(CIT), Barrister & Solicitor (Vic) Supreme Court

Associate Professor
H. Paterson, DipEd, BCom(Melb), MEC, PhD(LaT), CPA

Professors (Adjunct)

P. Ferguson, DipAppChem(RMIT), OAM
S. Halliday
J. Murphy, OAM
P. Petherbridge, BA(Syd), BDO(MCO), AFAIM

Principal Lecturers

J.J. Arnold, BA (Melb), DipEd (Melb), PhD(Deakin), MACE
B. Calway, GradDipMgtSys(SIT), MBus(T)(SIT), PHD(SUT), MACS
B.R. Clarke, BEd, LLM(Mon), GradDipMkt(CIT), Barrister & Solicitor (Vic) Supreme Court

Senior Lecturers

J. Brown-Parker, BA(PNG), MEd(Michigan State), PhD(Montana)
J. Bryant, BA(Hons)(LaT), DipEd(Melb), MA(Mon)
G. Francis, BSc(Hons)(Mon), PhD(Mon)
E. Ihsen, BSc(Hons)(Mon), PhD(Mon), MSRC3, MAAHDA
K. Lipson, BSc(Melb), DipEd(HIE), PhD(SUT)
J.B. Lourens, BBus(Account)(CIT), GradDipAcc&Mgt(CIT), DipEd(SCVH), MAAdmin(Mon), PhD (Mon), CPA
A. Nankervis, GradDipBus(Tourism Devel)(VUT), MBus(VUT)
V. Power, BA(SIT), GradDipAppPsych(SUT), MAPsych
A. Seltz, DipRetailBusAdmin(Munich), BA(Hons)(Mon)
R. Smith, BA(Hons), DipEd, DipComEd(UNE), GradDipIT(SIT), MCom(NSW), MEd(TESOL)(Mon), MACE
M. Spark, BCA(VUW), MBA(CanT), FAICD, AFAIM
K. Vigo, BA(Melb)

Lecturers

G. Chow, BSc(Mon), DipCompTech(CDI), MACS
M. Crameri, BCom(Hons)(Melb), FAIBF
C. Dibley, BEd(London), MBus(eBusiness and Communication)(SUT)
J. de Rooy, AssDegLaw(SCU), LLB(SCU), GradDipLegPrac(Bond), LLB
J. Dickson, BA(Hons)(SUT), DipEd, DipSchCouns(UQ)
C. Farrell, BScSc(Hons)(SUT)
N Fish, BScSc(Hons)(SUT)
J. Filzek, MBus(HRM), AFAHRI
D. Gardner, B.Bus(SIT), CPA
J. Grainger, BSc(Mon)
S. Kokonis, BSc(Mon), BA(Hons)(SUT)
C. Moore, BAppSci(IT)
C. Langridge, BBus(SUT), GradDipTax(RMIT), GradDipEd(Mon), MTax(RMIT), ASCPA(Taxation).
J. McCormack, DipP(CEC), BSocSci(Hons)(SIT)
C. McIntosh, BA(Hons)(SUT)
S. O’Sullivan, BA(LaT), DipEd, AssDip(AeroEng)(RMIT)
A. Peters, BBus(Hons)(SUT)
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S. Townsend, BAppSc(Lon), BA, GradDipAppPsych(Mon), GradDipBus(Deakin), MResPsych(Melb), MAPS, AIMM, AFAHRI
M. Tucker, BSc(Hons)(LaT), MComm(Melb)
N. Vargas, GradDipBus(eBusiness and Communication)(SUT)
I. Wallace, GradDipIS(SUT)

Discipline Leaders
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Economics
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Information Technology, Systems & Multimedia
B. Calway, GradDipMgtSyst(SIT), MBus(IT)(SIT), PhD(SUT), MACS
Management / Enterprise Management / Human Resource Management
V. Power, BA(SIT), GradDipAppPsych(SUT), MAPS
Marketing
M. Spark, BCA(VUW), MBA(CranIT), FACD, AFAIM
Media
K. Vigo, BA(Melb)
Psychology
E. Ihsen, BSocSci(Hons)(Mon), PhD(Mon), MScRCD, MAAHDA
Social Statistics
K. Lipson, BSc(Melb), DipEd(HIE), PhD(SUT)
Sociology
A. Seitz, DipRetailBusAdmin(Munich), BA(Hons)(Mon)
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Swinburne TAFE Division

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Executive Director, Strategic and Business Development
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Associate Director, Educational Development
C. Grayson, BSc(Hons), BAppSci(Hons), DipEd

TAFE School of Arts, Hospitality and Sciences
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W. Winford, DipArt&Design(RMIT), DipEd(HawInst), DipFrontlineManagement(SUT)
Manager, Horticulture and Environmental Sciences
F. Hellriegel, DipHort, GradDipEd, GradDipLeadership&Management
Manager, Hospitality and Tourism
S. Walsh, DipTeachTAFE(Melb/HawInst)
Manager, Industrial Sciences
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Manager, Centre for Sustainability
L. Condon
Manager, Centre for Occupational Health and Safety
M. Dawoud

TAFE School of Business and eCommerce
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Manager, Financial Services
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Manager, Management
G. Slattery, BComm, DipEd(Melb), DipFrontlineManagement(SUT), Workplace Assessor
Manager, Marketing and International Studies
D. Sullivan, BComm, GradDipEd, GradDipLegal Studies, MBA
Manager (Acting), Business Enterprise Centre
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R. Hodge

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Manager, Electrical and Electronics
M. Russell

Manager, Mechanical and Automotive
D. Noel, AssDipGenAdmin, DipTeachTech(UTS), Dip(FrontlineManagement)

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R. Stebbing

Manager, Centre for New Manufacturing
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TAFE School of Social Sciences

Director
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Grade 4 Music

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Manager, Community and Further Education
K. Bailey, BA, DipEdPsych, DipT, MEd(Management&Leadership),
Dip(FrontlineManagement), CertIV(WorkplaceTraining)

Manager, Health, Recreation and Human Services
M. Lettieri

Manager, Centre for Health and Wellbeing

tba
Research Institutes and Centres

In 1995, the University’s Board of Research and Graduate Studies adopted a three-tier structure for research development and support. Tier 1 comprised major research centres and institutes and Tier 2 comprised significant emerging research groups. Both Tier 1 and Tier 2 centres received central university infrastructure funding for their research.

During 1995/96 two major research centres were granted the status of Tier 1 institutes and the establishment of the first Tier 2 centres was approved. The Centres have continued to develop their research activities and in 1998 the Institute for Social Research (ISR) was created through the amalgamation of a Tier 1 (Centre for Urban and Social Research) and a Tier 2 (Asia-Australia Research Centre) centre.

Tier 1 and 2 Research Centres and Institutes

Brain Sciences Institute (T1)
Centre for Applied Colloid and BioColloid Science (T1)
Industrial Research Institute Swinburne (IRIS) (T1)
Institute for Social Research (T1)
Swinburne Computer Human Interaction Laboratory (SCHIL) (T2)

Brain Sciences Institute (BSI)
Director: Assoc Prof David Crewther
Telephone: +61 3 9214 5877
Email: crewther@bsi.swin.edu.au
Contact: Beata Erickson, Institute Administration Manager
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Email: berickson@bsi.swin.edu.au
Website: www.bsi.swin.edu.au/

Brain Sciences Institute (BSI) is a major research and postgraduate teaching facility, whose mission is to understand the neural basis of cognition and emotion in normal and disordered brain states. To undertake this work BSI has adopted the multidisciplinary research strategy that underlies Cognitive Neuroscience combining functional neuroimaging techniques such as high spatial resolution brain electrical activity recording and functional magnetic resonance imaging with the disciplines of neuropsychopharmacology, neuropsychology, neuropsychiatry, psychophysiology and neuroinformatics.

BSI draws on established work and develops new models of brain function, testing them by eliciting specific patterns of brain activity; applies its expertise and technology to clinical research projects; develops software and hardware which provides accurate data about brain activity; predicts and measures the effects of various drugs on the brain.

The BSI collaborates with a number of leading brain research laboratories and functional neuroimaging research centres in Australia, England, Japan and the United States.

Environment and Biotechnology Centre
Formerly the Centre for Applied Colloid and BioColloid Science.
Head: Assoc Prof Russell Crawford
Telephone: +61 3 9214 8573
Fax: +61 3 9819 0856
Email: rcrawford@swin.edu.au
Website: www.swinburne.edu.au/ebc

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 15 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 1986 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 focussed 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)
Director: Prof Tom Spurling
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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 bioengineering.

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 five cooperative research centres (CRCs), which combine a number of industry and university partners. These centres are:

- The CRC for Intelligent Manufacturing Systems and Technologies (IMS&T)
- The CRC for Cast Metals Manufacture (Castmm)
- The CRC for Microtechnology.
- The CRC for Welded Structures.
- The CRC for Wood Innovations

IRIS postgraduate education programs are provided, from Graduate Certificate through to Graduate Diploma and Master of Engineering levels in a number of different disciplines. 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: Assoc Prof David Hayward
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Website: www.isr.net

The ISR undertakes applied policy oriented research in the social sciences through designated programs and provides a platform for discussion and debate around contemporary social issues and policy. It also runs postgraduate courses in housing management and provides research consultancy services and professional development programs.

The ISR focuses on three interdisciplinary research programs:

- Cities and Housing
- Citizenship and Social Policy
- Media and Communications.

The Cities and Housing program focuses on the reshaping of cities and the nature of urban life. It explores the equity and quality of life implication of these changes, and what governments might do to address them. The program also examines the changing nature of housing systems, both nationally and internationally, with...
particular reference to the ability of housing markets and housing policy to produce affordable and appropriate housing.

The Citizenship and Social Policy program focuses on three broad themes: democracy, citizenship and human rights; the impact of economic rationalism and globalization; and defining and measuring progress and wellbeing (democratic policy and ethical dimensions). Within these themes, research is being undertaken on the development of national progress indicators; local community indicators and their extension into the local government sector; constitutional reform; and national, state and local values as they affect community planning and wellbeing priorities.

The Media and Communications program has two broadly interrelated themes. The first is to analyse the growth and convergence of media, information technology and telecommunications, collectively referred to as communications. The second theme examines the ways in which communications, and the cultures they produce, have modified our perception of space, place and identity, and society.

The ISR also has within its structure the Asia-Pacific Centre for Philanthropy and Social Investment, whose establishment in 2001 reflected the growing interest worldwide and in Australia in these fields. The Centre provides professional education and research in grantmaking and philanthropy at postgraduate level, and also consultancy services. It is one of few bodies in the world to offer specialised skills development in grantmaking.

The National Centre for Gender and Cultural Diversity (NCGCD) is also now located within the ISR. The NCGCD specialises in research and consultancy in diversity. It has a decade of experience in working with non-traditional organisations in the corporate, government and education sectors.

**Swinburne Computer Human Interaction Laboratory (SCHIL)**

Director: Dr Lorraine Johnston
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Website: www.it.swin.edu.au/centres/

SCHIL's mission is to understand and improve the nature of information technology from the perspective of the end users of that technology.

SCHIL was established in the early 1990's to meet the needs of the important research and consulting areas of usability and human factors in computing systems. Located within the School of Information Technology, SCHIL provides a 'centre of excellence' in the human issues which underpin information technology and the systems development process - the area known as human-computer interaction (HCI).

The current research concentrations of SCHIL are:

- **System Evaluation in Non-traditional Environments**
  For most computing applications the marketplace differentiates between them on the basis of how quickly one can finish a task. However, there are many applications, especially in eGovernment, where effectiveness are the determinants, not efficiency and effectiveness. We are investigating how attributes such as fun and enjoyment can be measured to provide a means of validating the requirements for applications like computer games.

- **Web Usability**
  SCHIL researchers are investigating Web usability from several different viewpoints. We are actively pursuing aspects such as trust in an eCommerce environment, usability in online-banking, and navigation and accessibility issues.

- **Usability and Engineering for HCI**
  SCHIL researchers share an interest in developing software engineering processes that take the needs of human users into account. We investigate user-centred process models for software engineering and usability evaluation techniques and tools.

- **Mobile Technologies**
  New technologies are often introduced to an application domain without particular consideration of user needs. SCHIL researchers are examining the use of mobile devices from a user-centred perspective, one example being the use of mobile phones for healthcare. Another is the usability of such devices while moving.

SCHIL has a state-of-the-art usability laboratory in which empirical research studies and postgraduate practical education in HCI is carried out. Other activities of the Centre include the supervision of postgraduate research students, and the conduct of high level consultancy in the four areas listed above.

**Other affiliated centres**

**Australian Centre for Emerging Technologies and Society (ACETS)**

Director: Assoc Prof Michael Gilding
Telephone: +61 3 9214 8102
Email: ACETS@swin.edu.au
Website: www.swinburne.edu.au/acet

ACETS has launched the Swinburne National Technology and Society Monitor, funded by the Chancellor's Strategic Initiatives Program. 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 Computer Assisted Telephone Interviewing (CATI) and focus group facilities. This unit 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 offers a Technology and Society project stream in the Bachelor of Arts (Honours) Social Science strand. The project stream involves coordinated research and thesis work in the field of emerging technologies and society and is closely integrated with the Swinburne National Technology and Society Monitor.

ACETS offers the following two postgraduate courses in Technical Communication:

- **Graduate Certificate of Social Science (Technical Communication)**
- **Graduate Diploma of Social Science (Technical Communication)**

The courses are designed for people who want to move into the technical communication field or who want to enhance their existing skills. The programs have been developed in association with the Australian Society for Technical Communication (Victoria, Inc. (ASTC)).

**Australian Foresight Institute (AFI)**

Director: Prof Richard Slaughter
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Website: www.swinburne.edu.au/afi

The Australian Foresight Institute (AFI) is part of Swinburne's strategy to provide innovative leadership through programs of wide social, cultural and economic value to the Australian community.

AFI offers a nested postgraduate program in strategic foresight. Strategic foresight is the ability to create and maintain high-quality forward views and to use the insights arising in organisationally useful ways.

The Strategic Foresight program will attract students who have completed first degrees and who are looking for an innovative 21st century specialisation. Courses will also be relevant to those currently working in a range of forward-looking roles including strategy, planning and foresight functions in public and private sector organisations.

The primary purpose of the Institute is to facilitate the emergence and application of high-quality foresight in each major sector. This is part of a wider strategy to encourage wider social, cultural and economic shifts from a society driven by the past to one that is increasingly open to the forward view and therefore able to be futures-responsive.
Australian Graduate School of Entrepreneurship (AGSE)

Head: Prof Adolph M Hanich
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With some 100 doctoral students, the Research Division of the Australian Graduate School of Entrepreneurship (AGSE) has a major commitment to research in the field of entrepreneurship and the closely related areas of strategy, leadership and organisation complexity. Swinburne University has been active in the entrepreneurship field since the mid-1980's when it launched its first post-graduate program in entrepreneurship. Currently, AGSE is carrying out the Australian component of the strategically important international Global Entrepreneurship Monitor (GEM) report, a longitudinal comparative study of the state of entrepreneurship in over thirty countries (see research updates at the AGSE website).

Our research interests range from macro policy drivers at the national and regional level, to micro issues surrounding the start up and development of new enterprises in both the business and not-for-profit sectors. Specific interests include the financing of new ventures, the characteristics of entrepreneurs, the education and development of entrepreneurs, corporate entrepreneurship (intrapreneurship), the management of creativity and innovation and the commercialisation of innovation.

We take a broad view of entrepreneurship and recognise the similarities (and differences) existing between business and social entrepreneurship. Underlying this view is that a healthy and civilised society is best served by having both a vibrant and ever renewing business sector, as well as a healthy and active community or not-for-profit sector.

In addition, AGSE offers a range of postgraduate coursework programs. It was the first academic centre in the world to offer a Masters level program in entrepreneurship, the Master of Entrepreneurship and Innovation (MEI). The Swinburne MBA is also a leader in the field, with a strong focus on corporate entrepreneurship and the development of successful entrepreneurial leaders. The School has a growing network of national and international affiliations with innovation-oriented centres of teaching, research and practice.

Centre for Advanced Internet Architectures (CAIA)

Director: Assoc Prof Grenville Armitage
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The Centre for Advanced Internet Architectures (CAIA) is a new initiative within the School of Biophysical Sciences and Electrical Engineering. We aim to perform industrially relevant, innovative and critical research into new IP networking architectures, provide a world-class, stimulating and flexible research and teaching environment, and establish collaborations with leading industrial and academic research groups within and outside Australia. CAIA conducts research into a broad range of areas involving Internet performance analysis, IP routing and Quality of Service architectures, and IP mobility protocols.

We achieve these goals through a combination of teaching, research, and consulting programs.

Our teaching programs offer advanced Internet and Telecommunications coursework programs at Bachelor, Graduate Certificate, Graduate Diploma and Masters (by coursework) levels. We also supervise students pursuing their PhD and Master (by research) qualifications.

Our research programs fall under three related areas: Broadband IP access architectures, IP network resilience and security, and Internet mobility. Our staff consists of academic members, post-doctoral research fellows, research students, and research assistants.

Researchers are encouraged to take an experimental and quantitative approach to studying and developing new Internet protocols and network systems designs. We focus on research that is motivated by the desire to solve existing (or plausibly predicted) problems with the delivery of reliable, cost-effective, and high-capacity IP access in the consumer and business contexts.

Centre for Astrophysics and Supercomputing

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The Centre for Astrophysics and Supercomputing is one of Australia’s premier astronomical research groups. 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. The Centre operates one of the most powerful supercomputers in Australia, in addition to its unique 3D Virtual Reality Theatre for immersive visualisation of scientific data.

Centre for Atom Optics and Ultrafast Spectroscopy (CAOUS)

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Website: www.swinburne.edu.au/rescentres/soll/caous/

The Centre for Atom Optics and Ultrafast Spectroscopy is part of the newly established Swinburne Optics and Laser Laboratories and carries out fundamental and strategic research in the areas of:

- **Atom Optics.** Novel magnetic microstructures are being developed as atomic mirrors, beam splitters, waveguides and integrated optical elements on a silicon chip for manipulating beams of ultracold laser-cooled atoms and Bose-Einstein condensates. A second project uses samples of ultracold laser-cooled atoms to investigate the formation and dissociation of molecules at ultralow temperatures.

- **Ultrafast Laser Spectroscopy.** The state-of-the-art Swinburne femtosecond laser facility is being used to develop new femtosecond coherent nonlinear techniques to investigate ultrafast processes in complex molecular systems including biological molecules, new semiconductor materials and quantum nanostructures.

- **Quantum Information.** A new type of quantum computation, ‘Quantum adiabatic computation’, is being investigated as a possible means to solve classically non-computable problems such as the well-known halting problem in classical computation. Other projects include studies of the limits decoherence places on the implementation of practical quantum computers and studies of quantum information processing based on magnetic microstructures as possible quantum bits.

Centre for Business and Management Research (CBMR)

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Website: www.swinburne.edu.au/business/cbmr/welcome.htm

The Centre for Business and Management Research is located within the School of Business. Its role is to support and facilitate the research and consulting activities undertaken by members of the School of Business. This is achieved by coordinating facilities and providing assistance to researchers and consultants of the School and generating research and consulting opportunities for members of the School.

The CBMR provides an interface with the commercial sector for the School’s consulting/research and offers a range of services which include:

- Collaborative research with business/industry;
- Consultancy and research services that provide practical and applied outcomes; and
- Training courses and professional development programs customised to the specific needs of corporate and public sector organisations.

A variety of undergraduate and postgraduate degree programs are also offered in the School of Business.

Swinburne University of Technology | Undergraduate Course Handbook 2004
At present CBMR activities are organised around, but not confined to, six interrelated generic streams of research:

- Marketing
- Human Resource Management and Organisation Behaviour
- Accounting and Finance
- Mixed Mode Modelling
- Demography and Sample Surveys
- European Business Research.

Each year the Centre conducts a seminar series featuring invited national and international presenters on topical issues in management and business.

**Centre for eBusiness and Communication**

Director: Assoc Prof Helen Paterson  
Contact: Allison Tonkin  
Telephone: +61 3 9735 6000  
Fax: +61 3 9735 4713  
Email: adminebus@swin.edu.au  
Website: www.ld.swin.edu.au/ebusiness

The Centre for eBusiness and Communication was established to address the needs of business people and others working in an environment significantly changed by the advent of new technologies.

The Centre builds upon the virtual learning community and flexible approach to teaching and learning upon which the design of Swinburne, Lilydale was based. It also builds upon a strong sense of partnership with industry and regional developments.

The Centre provides a technology related business management program consisting of Graduate Certificate, Graduate Diploma and Master of Business (eBusiness and Communication).

Our negotiated learning contracts allow students to develop their own customised learning path. Students can achieve their own objectives within the scope of each subject. They can use projects to link their study to their workplace, industry or service interests, adding immediate value and relevance to their learning.

The study program includes a balance of theory, research, professional practice and applications of business and communication concepts and techniques.

**Centre for Imaging and Applied Optics (CIAO)**

Director: Dr Alex Mazolini  
Telephone: +61 3 9214 8866  
Fax: +61 3 9819 0856  
Email: amazolini@swin.edu.au  
Website: www.swinburne.edu.au/optics/ciao/

CIAO's focus is to develop and exploit optical systems and techniques that have direct relevance to applications in medicine and industry. CIAO has research interests in the following four areas:

- Fibre Optic Sensors
- New Optical Materials
- Light Microscopy
- Plasmonics

CIAO shares a modern, purpose-built, optics laboratory facility on the ground floor of the Applied Science building (Hawthorn campus). CIAO's equipment includes a MOPO high power tunable laser, a Bragg Optical Fibre Writing Facility, several high resolution spectrometers, and a large array of optical fibre manipulation and analysis equipment. CIAO is involved in applied optics research, and collaborates with several industrial partners, DSTO and other university research centres.

CIAO forms a part of the Swinburne Optics and Laser Laboratories which is a world-class facility for fundamental and applied research in lasers, microscopy and photonics.

**Centre for Intelligent Agents and Multi-Agent Systems (CIAMAS)**

Director: Prof Ryszard Kowalczyk  
Telephone: +61 3 9214 5834  
Fax: +61 3 9819 0823  
Email: r.kowalczyk@swin.edu.au  
Website: www.it.swin.edu.au/centres/

CIAMAS research focuses on autonomous decision-making, coordination and adaptation mechanisms for agent systems situated in complex dynamic environments characterised by the presence of changing, incomplete and uncertain information.

Research areas include complex agent negotiations and collective decision-making, distributed learning and adaptation in multi-agent systems, and dynamic interactions and organisational mechanisms. The application areas involve collaborative and adaptive e-business and virtual enterprises, smart environments and pervasive computing, complex adaptive systems and advanced web/grid services.

**Centre for Intelligent Systems and Complex Processes (CISCP)**

Director: Prof Tim Hendtlass  
Telephone: +61 3 9214 8863, or +61 3 9214 5272 (Postgrad Area)  
Fax: +61 3 9819 0823  
Email: thendtl@swin.edu.au  
Website: www.it.swin.edu.au/centres/

The Centre for Intelligent Systems and Complex Processes has been established to act as a focus for, and to promote, the work being carried out on areas such as complex system modelling and optimization using artificial neural networks, evolutionary algorithms, collective intelligence and other techniques. It involves staff from the School of Information Technology, the School of Biophysical Sciences and Electrical Engineering (BSEE), and a number of external academics.

**Centre for Internet Computing and eCommerce (CICEC)**

Director: Assoc Prof Yun Yang  
Email: yun@it.swin.edu.au  
Telephone: +61 3 9214 8752  
Fax: +61 3 9819 0823  
Website: www.it.swin.edu.au/centres/

CICEC performs innovative research into the development and application of Internet technology for Internet computing and electronic commerce. Our primary focus is to produce insights, frameworks, models and prototypes for software developers, information technologists, software, knowledge and information systems managers and Internet entrepreneurs. Our key strength is the ability to integrate our multi-disciplinary skills and expertise with a view towards solutions to contemporary business and technological challenges. Research at CICEC covers various themes, including:

- Internet Computing (agents, mobile computing, electronic commerce, trust)
- Web-based Computer-Supported Cooperative Work (CSCW) and Real-time Groupware.
- Component-based Distributed Systems
- Information Visualisation

**Centre for Mathematical Modelling**

Research Coordinator: Dr Manmohan Singh  
Telephone: +61 3 9214 8024  
Fax: +61 3 9819 0821  
Email: msingh@swin.edu.au  
Website: www.swinburne.edu.au/cmm/

The Centre for Mathematical Modelling has been established to promote research and to provide a focus for research in mathematical modelling within the School of Mathematical Sciences, and the University. It brings together expertise and
experience from a wide range of mathematical disciplines with a long established reputation in educational, consulting, and research activities.

The mission of the Centre is to be an internationally recognised facility undertaking research and development in mathematical modelling for industry and commerce.

The main objectives of the Centre are:

- To carry out research in mathematics and its applications in Australia and internationally.
- To be a Centre for graduate research training in mathematical modelling.
- To undertake consultation and development projects in mathematical modelling for the wider community.
- To carry out collaborative programs within Swinburne and with government and private enterprise.
- To provide mathematical, including statistical and computational, research support for the wider Swinburne community.

Current research and consulting has strong emphases on computational modelling, visualisation and on the delivery of results electronically. The projects can be classified in the areas of:

- Computer Simulation and Modelling
- Mathematical Biology
- Industrial Modelling
- Mathematical Analysis and Computation
- Performance Modelling in Sport

**Centre for Software Engineering (CSE)**

Director: Prof T.Y. Chen
Telephone: +61 3 9214 5453
Fax: +61 3 9819 0823
Email: TYChen@it.swin.edu.au
Website: www.it.swin.edu.au/centres/

The mission of the Centre for Software Engineering is to promote pure and applied research in software engineering and to become a leading research centre in software engineering.

There are four research groups within the Centre for Software Engineering:

- **Component Technologies Group**
  The Component Technologies Group researches the application of object and component technology to the development of flexible, open software and enterprise systems. The group also conducts research in formal foundations suitable for component technology, and investigates the influence and applicability of such development processes in tertiary education.

- **Software Testing Group**
  The Software Testing Group is a national leading research group on software testing. Its members’ research activities cover analytical analysis, empirical analysis, simulation, development of methodologies and automated testing tools.

- **Software Usability through Requirements Engineering Group**
  The usefulness of software is most often determined by how well it contributes to the support of user tasks. The Requirements and Usability Engineering Group therefore has a focus on determining the requirements for usability and affective factors. The group conducts research into methods for validation of requirements, both to confirm the requirements initially, and to see that they are met in the finished product.

- **Visualisation and Image Processing Group**
  Visual information (e.g. those information represented by diagrams, icons, and images) has been widely used in the model computer systems. The group conducts research into methods for validation of requirements, both to confirm the requirements initially, and to see that they are met in the finished product.

**Centre for Micro-Photonics (CMP)**

Director: Prof Min Gu
Telephone: +61 3 9214 8776
Email: mgu@swin.edu.au
Website: www.swinburne.edu.au/rescentres/soll/cmp/

The Centre for Micro-Photonics (CMP) is funded from the Chancellery Strategic Initiatives Program at Swinburne University of Technology. CMP was established at the School of Biophysical Sciences and Electrical Engineering in January 2000. It is part of Swinburne Optics and Laser Laboratory (SOLL), a world-class centre for fundamental and applied research in lasers, microscopy and photonics. The CMP is also a node of the Australian Research Council Centre of Excellence for Ultra-high-bandwidth Devices for Optical Systems.

The CMP mission is to become an internationally leading centre in the area of micro-photonics and to develop a world-class laboratory for training research students. The CMP aim is to develop innovative nanophotonic devices for all-optical information technology, develop novel optoelectronic imaging methods for biological studies and industrial applications, and to understand the mechanisms of light interaction with biological materials. CMP has been equipped with state-of-the-art optics and laser devices for conducting research projects in the area of biophotonics, photonic data storage and devices, and nano-photonics.

Current research projects within CMP include three-dimensional microscopic imaging through tissue-like media for cancer detection, near-field scanning imaging based on optical trapping, two-photon fluorescence microscopy and its applications in biological studies, three-dimensional optical data storage, laser tweezers for single molecule detection, lasing in micro-cavities, and photonic crystals.

**Centre for Molecular Simulation**

Director: Prof Richard Sadus
Telephone: +61 3 9214 8773
Fax: +61 3 9819 0823
Email: RSadus@swin.edu.au
Website: www.it.swin.edu.au/centres/cms/

The primary aim of the Centre for Molecular Simulation (CMS) is to obtain a fundamental understanding of natural phenomena using molecular simulation.

Molecular simulation refers to the application of computing techniques such as Monte Carlo (MC) and molecular dynamics (MD) to study the properties of atomic and molecular systems. Unlike other computing methods, molecular simulation provides exact results without relying on unnecessary simplifying assumptions or approximations. Recent advances in both algorithm design and dramatic improvements in high performance computing power mean that molecular simulation is on the verge of revolutionising the practice of science. It can provide accurate insights into the nature of materials where experiment is either imprecise or impossible. Consequently it provides a valuable opportunity to make significant scientific discoveries. In particular, molecular simulation is likely to have a growing impact on both biotechnology and nanotechnology by providing the molecular blueprint for purpose-made molecules.

CMS provides a unique focal point for work on simulation, 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 rheology of polymeric fluids, and
- Thermodynamics and statistical mechanics.

**Graduate School of Integrative Medicine (GSIM)**

Head: Prof Avni Sali
Contact: Carol Lov, Senior Administrator
Telephone: +61 3 9214 5463
Fax: +61 3 9214 8009
Email: closw@swin.edu.au
Website: www.swinburne.edu.au/gsim/gsimed_home.html

The Swinburne Graduate School of Integrative Medicine is designed to provide medical professionals with educational programs and research opportunities in
complementary therapies. The establishment of the School in 1998 is a reflection of the growing number of medical practitioners who are combining complementary medicines and therapies with conventional medical practice.

The Graduate School of Integrative Medicine benefits from partnerships with existing research activities at the University, particularly in the areas of applied neuroscience, biophysics and biomedical instrumentation, biochemistry, and psychology/psychophysiology.

Information Technology Innovation Group (ITIG)

Head: Kon Mouzakis
Telephone: +61 3 9214 8585
Fax: +61 3 9819 6857
Email: kmouzakis@swin.edu.au
Website: www.it.swin.edu.au/centres/

The mission of the ITIG is to provide quality research and development services to the information technology industry. ITIG's immediate goal is to attain a national reputation as a group that provides innovative and state-of-the-art computing solutions to industry problems.

Currently, ITIG is working on a wide range of projects involving mobile computing technologies, pen-based computing devices, world wide web and internet applications, and multimedia development.

Psychology Centre

Director: Dr Roger Cook
Telephone: +61 3 9214 8653
Fax: +61 3 9819 6857
Website: www.swinburne.edu.au/sbs/pc

The Centre offers the community a range of specialist psychological services. It is staffed by a team of experienced psychologists, all of whom have advanced qualifications in their specific fields. The Centre is an educational and professional development initiative by an academic department that has achieved a widespread and enviable reputation for its teaching, training and research.

The Centre provides three major services for the community:

- Counselling and psychotherapy
- Education and professional training
- Research and consultancy services

The Centre offers a range of services where the skills of the staff are available for particular projects, which include both research and professional training programs. Specifically, the staff offer their expertise in the design and execution of program evaluation and social research as well as in the provision of professional development short courses for psychologists and other human service practitioners. Examples of these activities are:

- Outcome studies of helping services
- Training in psychological assessment
- Evaluation of initiatives in social welfare programs
- Seminars in psychotherapeutic practice

The Centre also provides professional work placement opportunities for graduate students and probationary psychologists in the areas of counselling, health and clinical psychology. It is integrated with the professional Masters and Doctoral programs conducted by the Psychology Discipline of the School of Social and Behavioural Sciences.

Sensory Neuroscience Laboratory

Director: Dr John Patterson
Telephone: +61 3 9214 8862
Fax: +61 3 9819 0856
Email: jtpatterson@swin.edu.au
Website: www.swinburne.edu.au/bioscieleceng/SNL/

The Sensory Neuroscience Laboratory is a Swinburne research initiative on the electrophysiological analysis of sensory function. Currently olfaction, taste and vision are the key areas of research for which innovative approaches in the design of stimuli, stimulus delivery and methodology are providing solutions to applied and basic science questions.

Swinburne University of Technology | Undergraduate Course Handbook 2004
Undergraduate Course Chart

<table>
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**Higher Education Division (Hawthorn/Prahran)**

### National Institute of Design

#### Single Degrees

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### School of Biophysical Sciences and Electrical Engineering

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#### Double Degrees

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### School of Business

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**School of Engineering and Science**

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### Double Degrees

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## Swinburne, Lilydale Division

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## National Institute of Circus Arts

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<td>BSc(Biochemistry)</td>
</tr>
<tr>
<td>S061</td>
<td>Bachelor of Science (Biomedical Sciences)</td>
<td>BSc</td>
<td>BSc(Biomedical Sciences)</td>
</tr>
<tr>
<td>ESB055</td>
<td>Bachelor of Science (Biotechnology)</td>
<td>BSc</td>
<td>BSc(Biotechnology)</td>
</tr>
<tr>
<td>Z063Y</td>
<td>Bachelor of Science (Computer Science and Software Engineering)</td>
<td>BSc</td>
<td>BSc(Computer Science and Software Engineering)</td>
</tr>
<tr>
<td>Z160Y</td>
<td>Bachelor of Science (Computing)</td>
<td>BSc</td>
<td>BSc(Computing)</td>
</tr>
<tr>
<td>Z161Y</td>
<td>Bachelor of Science (Information Technology)</td>
<td>BSc</td>
<td>BSc(Information Technology)</td>
</tr>
<tr>
<td>S055</td>
<td>Bachelor of Science (Photonics)</td>
<td>BSc</td>
<td>BSc(Photonics)</td>
</tr>
<tr>
<td>Z049</td>
<td>Bachelor of Science (Psychology/Biochemistry)</td>
<td>BSc</td>
<td>BSc(Psychology/Biochemistry)</td>
</tr>
<tr>
<td>Z062Y</td>
<td>Bachelor of Science (Psychology &amp; Psychophysiology)</td>
<td>BSc</td>
<td>BSc(Psychology &amp; Psychophysiology)</td>
</tr>
<tr>
<td>ESB095</td>
<td>Bachelor of Science (Biotechnology) / Bachelor of Arts (Media &amp; Communications)</td>
<td>BSc/BA</td>
<td>BSc(Biotechnology)/BA(Media &amp; Communications)</td>
</tr>
<tr>
<td>ESB105</td>
<td>Bachelor of Science (Biotechnology) / Bachelor of Business</td>
<td>BSc/BBus</td>
<td>BSc(Biotechnology)/BBus</td>
</tr>
<tr>
<td>S040</td>
<td>Bachelor of Science (Biomedical Sciences) /</td>
<td>BSc/BEng</td>
<td>BSc(Biomedical Sciences)</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Engineering (Electronics and Computer Systems)</td>
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</tr>
</tbody>
</table>

Swinburne University of Technology | Undergraduate Course Handbook 2004
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Generic Abbreviation</th>
<th>Alternative Abbreviation (including discipline/specialisation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S060</td>
<td>Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunications &amp; Internet Technologies)</td>
<td>BSc/BEng</td>
<td>BSc(Photonics) / BEng(Telecommunications &amp; Internet Technologies)</td>
</tr>
<tr>
<td>E062Y</td>
<td>Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems)</td>
<td>BSc/BEng</td>
<td>BSc(Research and Development) / BEng(Electronics and Computer Systems)</td>
</tr>
</tbody>
</table>

**Bachelor of Science (Honours)**

- Z073 Bachelor of Science (Applied Chemistry) (Honours) | BSc(Hons) | BSc(Applied Chemistry)(Hons) |
- Z072 Bachelor of Science (Biochemistry) (Honours) | BSc(Hons) | BSc(Biochemistry)(Hons) |
- S066 Bachelor of Science (Biomedical Sciences) (Honours) | BSc(Hons) | BSc(Biomedical Sciences)(Hons) |
- Z019 Bachelor of Science (Biophotonics) (Honours) | BSc(Hons) | BSc(Biophotonics)(Hons) |
- Z065Y Bachelor of Science (Honours) (Computer Science) | BSc(Hons) | BSc(Hons)(Computer Science) |
- Z066Y Bachelor of Science (Medical Biophysics) (Honours) | BSc(Hons) | BSc(Medical Biophysics)(Hons) |
- Z039 Bachelor of Science (Optoelectronics and Lasers) (Honours) | BSc(Hons) | BSc(Optoelectronics and Lasers)(Hons) |
- Z079Y Bachelor of Science (Psychophysical Psychology) (Honours) | BSc(Hons) | BSc(Psychophysical Psychology)(Hons) |

**Bachelor of Social Science**

- N056 Bachelor of Social Science | BSSc | Not applicable |
- N063 Bachelor of Social Science (Psychology) | BSSc | BSSc(Psychology) |

**Bachelor of Software Engineering**

- Z044 Bachelor of Software Engineering | BSE | Not applicable |

**Bachelor of Technology**

- M056 Bachelor of Technology (Air Transportation Management) | BTEch | BTEch(Air Transportation Management) |
- M055 Bachelor of Technology (Aviation) | BTEch | BTEch(Aviation) |

**Bachelor of Technology / Bachelor of Business**

- EATB050 Bachelor of Technology (Air Transportation Management) / Bachelor of Business | BTEch/BBus | BTEch(Air Transportation Management)/BBus |
- EA8050 Bachelor of Technology (Aviation) / Bachelor of Business | BTEch/BBus | BTEch(Aviation)/BBus |

**Swinburne, Lilydale Division**

**Bachelor of Applied Science (Honours)**

- L078 Bachelor of Applied Science (Honours) | BAppSc(Hons) | Not applicable |

**Bachelor of Business**

- L055 Bachelor of Business | BBus | Not applicable |
- L054 Bachelor of Business (Accounting) | BBus | BBus(Accounting) |
- L053 Bachelor of Business (eCommerce) | BBus | BBus(eCommerce) |
- L056A Bachelor of Business (Tourism and Management) | BBus | BBus(Tourism and Management) |

**Bachelor of Business / Advanced Diploma of Business**

- L057 Bachelor of Business / Advanced Diploma of Business (Marketing) | BBus/AdvDipBus | BBus/AdvDipBus(Marketing) |
- L072 Bachelor of Business (Accounting) / Advanced Diploma of Accounting | BBus/AdvDipAcctg | BBus(Accounting)/AdvDipAcctg |
- L078 Bachelor of Business (Tourism and Management) / Diploma of Hospitality Management | BBus/DiplomHospMgmt/BBus(Tourism and Management) |

**Bachelor of Business / Bachelor of Social Science**

- L067 Bachelor of Business / Bachelor of Social Science | BBus/BSocSc | Not applicable |

**Bachelor of Business (Honours)**

- L077 Bachelor of Business (Honours) | BBus(Hons) | Not applicable |

**Bachelor of Social Science**

- L059 Bachelor of Social Science | BSocSc | BSocSc |

**Bachelor of Social Science (Honours)**

- L078 Bachelor of Social Science (Honours) | BSocSc(Hons) | Not applicable |
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Generic Abbreviation</th>
<th>Alternative Abbreviation (including discipline/specialisation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L064</td>
<td>Bachelor of Technology (Information Systems)</td>
<td>BTech</td>
<td>BTech(Information Systems)</td>
</tr>
<tr>
<td>L063</td>
<td>Bachelor of Technology (Information Technology &amp; Software Engineering)</td>
<td>BTech</td>
<td>BTech(Information Technology &amp; Software Engineering)</td>
</tr>
<tr>
<td>L059</td>
<td>Bachelor of Technology (Interactive Multimedia)</td>
<td>BTech</td>
<td>BTech(Interactive Multimedia)</td>
</tr>
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</table>

**National Institute of Circus Arts**

**Bachelor of Circus Arts**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Generic Abbreviation</th>
<th>Alternative Abbreviation</th>
</tr>
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<tbody>
<tr>
<td>DCA10</td>
<td>Bachelor of Circus Arts</td>
<td>BCircA</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
General Information for Undergraduate Students

Application procedure

How to Apply (Australian permanent residents only)

All full-time undergraduate courses, with the exception of later year engineering and some part-time engineering/science courses, require a Victorian Tertiary Admissions Centre (VTAC) application. VTAC works as an application and administrative agency for all Victorian Universities and TAFE institutes.

Applications to VTAC can be made on the form contained in the VTAC Guide or submitted electronically via the VTAC website. The VTAC Guide to University and TAFE courses, which is produced annually, is available from newsagents or alternatively may be viewed online at www.vtac.edu.au. The VTAC toll free number for general enquiries is 1300 364 139.

When to Apply

Applications through VTAC commence in July each year. Timely applications close during the last week of September and although late applications will be accepted by VTAC until mid December some courses that have special requirements will not accept late applications. Please check the VTAC Guide for details.

International Students

Application by international students must be made through the International Student Unit. Because of Australian government regulations, part-time study is not available to full-fee paying international students. For further information, contact the International Student Unit on:

Telephone: +61 3 9214 8151
Email: isu@swin.edu.au
Website: www.swinburne.edu.au/isu

Direct Applications

For Higher Education courses not offered through the VTAC system applicants will need to complete a direct entry application form. Hard copy forms are also available from Swinburne School offices. Please see below for a list of School contacts. The direct entry application form has details of which courses require direct entry applications.

National Institute of Design: nidinfo@swin.edu.au, 9214 6755
School of Biophysical Sciences & Electrical Engineering: bsee@swin.edu.au, 9214 8859
School of Business: busheh@swin.edu.au, 9214 5848
School of Engineering and Science: engsci@swin.edu.au, 9214 8372
School of Information Technology: infoit@swin.edu.au, 9214 5505
School of Mathematical Sciences: voreke@swin.edu.au, 9214 8283
School of Social and Behavioural Sciences: sshadmin@swin.edu.au, 9214 5209
Swinburne, Lilydale: lidinfo@swin.edu.au, 9215 7000

Special Entry Schemes

Applicants in the following categories may apply to Swinburne for entry under the Special Entry Scheme. In all cases, relevant employment experience and educational background will be taken into account. Additionally, students applying for all Science and Engineering courses must have passed the prerequisite subjects for those courses:

Aboriginal Australians or Torres Strait Islanders

To apply under ‘Aboriginal Australians and Torres Strait Islanders you must apply through VTAC. Current Year 12 indigenous applicants can complete the VTAC S form in support of their VTAC application, and Non-Year 12 indigenous applicants can complete the VTAC SI form. In addition, the University has the Swinburne Special Admission Scheme for indigenous applicants. All indigenous applicants may provide further information in support of their VTAC application through the Swinburne Special Admission Scheme. For further information, contact the Swinburne Manager of Indigenous Programs on telephone (03) 9214 5179.

Age and education

Swinburne’s Special Entry Scheme has no age requirements. Applicants 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 two years prior to the time of application for the course are eligible to apply. To apply under the ‘Age and Education’ special entry scheme, you must apply through VTAC.

Continuing difficulties during schooling (Current Year 12)

To be eligible you must be a Current Year 12 Student and your difficulties with schoolwork must be confined to this year only. Difficulties include: economic hardship, lack of facilities at home or school, English language learning difficulties, family or personal problems, physical disability, continual illness, or geographic isolation. You must apply through VTAC and submit the VTAC S form.

Credit Transfer

Applicants with prior tertiary studies that satisfy part of the academic requirements of the course may be granted “credit” and/or entry to the course with ‘advanced standing’. University policies apply and applicants are assessed on a case-by-case basis. For further information refer to ‘Swinburne Pathways: Credit Transfer Guide’ at: www.swinburne.edu.au/corporate/registrar/credit/

Education Abroad

Swinburne offers International Exchange and Study Abroad Programs. Exchange Swinburne partners offer many subjects as well as a secure base to explore a foreign culture. All programs can be credited towards your Swinburne degree, provided they are relevant to the degree and approved by Swinburne. For further information visit: www.swinburne.edu.au/edabroad or telephone the Education Abroad Office on (03) 9214 8811.

Enrolment

New enrolments

To enrol, students are usually required to attend an enrolment session at Swinburne. Details of time and location will be included in the offer letter posted to students. Students should plan to be at Swinburne for at least half a day, depending on the schedule set out by the relevant School.

Re-enrolments

Re-enrolments in the Higher Education Sector are usually conducted by mail.

Amendments to Enrolment

Students wishing to amend the subjects in which they are enrolled must complete and lodge with their awarding School / Academic Unit an Amendment to Enrolment form available from www.swinburne.edu.au/corporate/registrar/student/forms_level3.htm.

Students wishing to add a subject must do so no later than the end of the first week of teaching of a standard semester. Students withdrawing from a subject must lodge their form by 31 March (Semester 1) and 31 August (Semester 2) for standard semesters. For students enrolled in non-standard semesters the census dates are specified by their awarding School.

Fees and charges

Fees and charges to students vary depending on the nature of their enrolment. Details of the financial charges payable by students towards their education will be issued at enrolments/re-enrolment.

General Service Fee

The General Service Fee (GSF) is paid by all students as a contribution towards a range of services provided by the University.

HECS

HECS is a fee charged by the Federal Government as a contribution towards the education of all undergraduate students enrolled in the Higher Education Sector, except for the following:

- Students fully sponsored under a foreign aid program.
- Students paying fees for a non-award program.
- Students paying fees as an overseas student.
- Students who are awarded and continue to hold a Swinburne Foundation Scholarship.

For information on HECS refer to the booklet HECS Information 2004 or visit www.hecs.gov.au
Honours
An honours program at Swinburne provides students, who have a demonstrated academic ability, with an 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. For further information, contact the relevant school.

Industry-Based Learning
Industry-Based Learning is an optional program in which students are placed in paid, supervised employment relevant to their studies as part of their degree. Industry-Based Learning gives students 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 availability of places.

Students without permanent resident status should be aware that IBL may not be available. IBL is possible in a student’s home country subject to approval of the appropriate IBL Coordinator.

For further information visit: www.swinburne.edu.au/corporate/filv/

Maths and Stats Help Centre
The Maths and Stats Help Centre is run by the School of Mathematical Sciences. It is there to help any Higher Education student studying a first year mathematics or statistics subject for courses in Engineering, Science, Business and Social & Behavioural Science. It is a drop-in centre where tutors are available to help students individually or in groups. The Maths & Stats Help Centre is open Monday – Friday and is located in ENE14, 6th floor Engineering Building, Hawthorn. Appointments are not usually necessary but can be made on (03) 9214 8748.

Pathways
An advanced credit transfer system, known as the Pathways program, is in place at Swinburne. Through Pathways, students with one or more of a wide range of post-secondary qualifications (both local and international) can gain entry into this course with advanced standing. Certain subject requirements must be met and an acceptable standard of results achieved in order to gain admission and for maximum credit to be granted.

For further information refer to ‘Swinburne Pathways: Credit Transfer Guide’ at: www.swinburne.edu.au/corporate/registrar/credit/

Note: Eligibility for credit does not guarantee a place in the course; acceptance depends on the number of applicants and available places.

Prizes and Scholarships
Swinburne understands that tertiary study can be a long and expensive commitment and offers a wide variety of scholarships for new enrolling students. All Swinburne 2004 scholarships recognise excellence in areas such as academic achievement, community service and leadership. Swinburne also believes in assisting its students to fulfill their career aims. We offer an array of scholarships for high achieving undergraduate students and students in need.

Scholarships and Prizes are available at each School and further details can be found at the Schools’ respective web sites or by contacting them directly. Further information can be accessed on the web at: www.swinburne.edu.au/hed/scholarships/

Recognition of Prior Learning (RPL)
Recognition of Prior Learning (RPL) is the process by which students’ prior work history, life experience and previous study can be considered for credit in the course being undertaken. Applicants will be considered on their individual merits in accordance with Swinburne policies. The policy on RPL can be found at: www.swinburne.edu.au/corporate/registrar/ppd/files/stuinf.htm

Single Subject/Cross Institutional Study
Swinburne offers single subject/cross institutional study enrolment in a number of disciplines at undergraduate and postgraduate level. Single subject students are not enrolled in a Swinburne degree program and do not receive an award at the completion of study. Students do receive a results certificate. For an application form, go to: www.swinburne.edu.au/corporate/registrar/Single_Subject_Cross_Institutional_Study_Form_2003.pdf.

Student Information Centres
The Student Information Centres provide information and procedural advice on admissions, examinations and awards. Other functions include processing cashing, issuing identity cards, result certificates, academic transcripts, enrolment status letters, authorising travel concession forms and international student card forms, international enquiries for home-stay and recreational activities; off campus housing, financial advice/assistance; certifying University documents, hire and sale of academic gowns/regalia, general enquiries and information provision; tutoring register; Swinlink enquiries; part-time employment; indigenous enquiries; course information and brochures for current and prospective students.


Office hours:
8.30am – 6.00pm Monday to Thursday
8.30am – 5.00pm Friday

Note:
• The cashier closes 30mins earlier.
• The offices are closed on public holidays.

Hawthorn campus
UN103, Ethel Hall
Cnr of John Street and Burwood Road
Telephone: 1300 368 777

Lilydale campus
Room LA102.2, Melba Avenue
Telephone: (03) 9215 7034/7101

Prahran campus
2nd Floor, Building PK, St John Street
Telephone: (03) 9214 6898/6793/6744/6761

Summer Semester
Summer Semester is available to students who wish to study subjects outside the standard semester period. Summer Semester allows students to:

• Fast track their course of study.
• Repeat failed subjects, thereby remaining at the correct stage in their course of study.
• Study a subject at Swinburne not offered at their home institution.
• Enrol in a course which is structured to run over the Summer Semester.

The Summer Semester program is available to local Swinburne students, International Swinburne students, other tertiary students (both local and international) and the general public. Summer Semester is taught in an intensive accelerated mode format.

Further information is available from: www.swinburne.edu.au/summer

Youth Allowance/Austudy
Youth Allowance/Austudy is the major form of Commonwealth Government assistance for tertiary students who are Australian citizens or permanent residents. Generally Youth Allowance/Austudy provides financial help, on an income and asset test basis, to students who are studying approved, full-time secondary or tertiary programs.

Application forms and information can be obtained from all Centrelink offices and from the University’s Student Services. The Financial Adviser can assist with information on policy guidelines and may even negotiate with Centrelink on behalf of students, if there is doubt about their eligibility.

Swinburne University of Technology | Undergraduate Course Handbook 2004
Higher Education Division
(Hawthorn/Prahran)

National Institute of Design
The National Institute of Design (NID) has been a leader in Australian design education since the 1960s, earning a wide reputation for its highly developed, industry-focused learning. Our undergraduate program is unique in Australia because it offers design-specific degree courses across the range of design disciplines: Communication Design, Industrial Design, Interior Design, Multimedia Design, Product Design Engineering, and Film and Television. Our teaching staff is composed of respected practitioners with a passion for excellence and innovation. NID's Industry-Based Learning programs give students the opportunity to work in a commercial design studio for one or two semesters. Local knowledge and insight mixed with an international focus also offers NID students the opportunity to experience design at many levels, through overseas study tours and exchange programs with eminent design institutions across Asia, Europe and North America.

Further information
Contact the National Institute of Design on +61 3 9214 6755
Email: NIDEnquiry@swin.edu.au
Website: www.swinburne.edu.au/design/

DCD10 Bachelor of Design (Communication Design)
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 course aims to educate 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.

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, the Australian Graphic Design Association, COGRA Design International Council of Graphic Design Associations

Course duration
Three years full-time or six years part-time (pass degree).

Structure
The course operates under a student workload model based on 100 credit points for a full-time academic year. To qualify for the award, a student must complete, or have been granted an exemption for the subjects listed below. Work expected outside normal timetabled contact hours, in keeping with related design courses, will usually be no less than a minimum of one for one.

Students successfully completing an IBL component will be awarded 75 credit points in excess of the 300 awarded for the coursework required to qualify for the Bachelor of Design. Students undertaking an IBL out-placement in Year 3 will need points in excess of the 300 awarded for the coursework required to qualify for the Bachelor of Design. Students undertaking an IBL out-placement in Year 3 will need points in excess of the 300 awarded for the coursework required to qualify for the Bachelor of Design.

Students who successfully complete the degree may apply to undertake the Bachelor of Design (Communication Design) (Honours) program.

Semester 1
HDC001 Design Lab 1 (25 credit points)
HDDC011 Design Communication Studio 1
HDDC0112 Technology 1

Semester 2
HDC002 Design Lab 2 (25 credit points)
HDDC121 Design Communication Studio 2

HDDC122 Technology 2

Semester 3
HDDC023 Design Communication Studio 3 (25 credit points)
HDDC0232 Graphic Communications 3
HDDC0233 Technology 3

Semester 4
HDDC024 Design Communication Studio 4 (25 credit points)
HDDC0242 Research Project
One of:
HDDC0234 Photography in Communication Design
HDDC0244 Information Design
HDDC0245 Imaging for Communication Design
HDDC0246 Interactive Design

Semester 5
HDDC0351 Design Communication Studio 5
HDDC0352 Graphic Communications 5
One of:
HDDC0353 Interface Design
HDDC0354 Image Based Design
HDDC0355 Design for Publication
One of:
HDDC0356 Graphic Design Discourse
LEB300d Managing the Transition to Global Business
OR
HDDC0300 IBL (37.5 credit points)
One of:
HDDC0356 Graphic Design Discourse
LEB300d Managing the Transition to Global Business

Semester 6
HDDC0361 Design Communication Studio 6
HDDC0362 Graphic Communications 6
One of:
HDDC0353 Interface Design
HDDC0354 Image Based Design
HDDC0355 Design for Publication
One of:
HDDC0386 Context Culture and Identity
LEB306d Ecommerce Product Development and Management
OR
HDDC0300 IBL (37.5 credit points)
One of:
HDDC0386 Context Culture and Identity
LEB306d Ecommerce Product Development and Management

Billy Blue
Semester 5
HDDC0351 Design Communication Studio 5
HDDC0352 Graphic Communications 5
HDDC0353 Interface Design
LEB300ds Managing the Transition to Global Business

Semester 6
HDDC0361 Design Communication Studio 6
HDDC0362 Graphic Communications 6
HDDC0353 Interface Design
LEB306ds Ecommerce Product Development and Management

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
The Industrial Design program has been developed to provide graduates with dynamic national and international career opportunities designing innovative products. Employment opportunities exist in industry sectors such as furniture, automotive, sporting equipment, medical, exhibition, and set design. Students learn a variety of presentation and communication techniques including digital modeling and model making utilising a wide range of industry software and workshop-based prototyping facilities. New materials and manufacturing techniques are explored with a view to creating product concepts for the future. The creative and technological thrust of the program is supported by business studies, professional practice, consumer knowledge, and ethics.

**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**

Membership of the Design Institute of Australia.

**Course duration**

Three years full-time or six years part-time (pass degree)

**Structure**

The course operates under a student workload model based on 100 credit points for a full time academic year. To qualify for the award a student must complete, or have been granted exemption for, the subjects below. Each subject is worth 12.5 credit points unless otherwise indicated.

Students successfully completing an IBL component will be awarded 75 credit points in excess of the 300 awarded for the coursework required to qualify for the Bachelor of Design. Students undertaking an IBL out-placement in Year 3 will need to complete their 300 coursework units in Year 4.

Work expected of students outside normal timetabled hours, in keeping with the ability to complete their 300 coursework units in Year 4.

Students who successfully complete the degree may apply to undertake the Bachelor of Design (Industrial Design) (Honours) program.

**Entry requirements**

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

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any). Applicants are advised to undertake an art-related study such as art or graphic communication in Units 3 & 4 to assist in the development of a folio.

2003 ENTER: Individual offer
DINTD10 Bachelor of Design (Interior Design)

The Interior Design program deals with the design of exhibitions (such as trade shows, events and museum displays), public environments (for example theatres, cinemas, government agencies and institutions) and commercial spaces (including restaurants, offices, hotels, shopping areas and airports). Design projects typically cover the construction of 3D space, surface treatments, materials, lighting, sound, fittings and furniture design. Students are provided with a broad education in communication, and a firm grounding in the technology and science of interior and exhibition design, including CAD, technical drawing and 3D modeling.

Campus
Prahran

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

Professional recognition
Membership of the Design Institute of Australia, the Society of Interior Designers of Australia and registration as a Building Practitioner.

Course duration
Three years full-time or six years part-time (pass degree).

Structure
The course operates under a student workload model based on 100 credit points for a full time academic year. To qualify for the award a student must complete, or have been granted exemption for, the subjects below. Each subject is worth 12.5 credit points unless otherwise indicated. Work expected of students outside normal timetabled hours, in keeping with related design courses, will usually be no less than one for one.

Students successfully completing an IBL component will be awarded 75 credit points in excess of the 300 awarded for the coursework required to qualify for the Bachelor of Design. Students undertaking an IBL out-placement in Year 3 will need to complete their 300 coursework units in Year 4.

Students who successfully complete the degree may apply to undertake the Bachelor of Design (Interior Design) (Honours) program.

Year 1
Semester 1
HDD001 Design Lab 1 (25 credit points)
HDDINTD111 Interior Design Communication 1
HDDINTD112 Construction Technology 1

Semester 2
HDD002 Design Lab 2 (25 credit points)
HDDINTD121 Interior Design Communication 2
HDDINTD122 Construction Technology 2

Year 2
Semester 3
HDDINTD231 Construction Technology 3
HDDINTD232 Digital Technology 3
HDDINTD233 Design Project 3 (25 credit points)

Semester 4
HDDINTD241 Construction Technology 4
HDDINTD242 Research Project
One of:
HDD007 Furniture Design Studio (25 credit points)
HDD008 Exhibition Design Studio (25 credit points)

Year 3
Semester 5
HDDINTD351 Construction Technology 5
One of:
HDD007 Furniture Design Studio (25 credit points)
HDD008 Exhibition Design Studio (25 credit points)

One of:
LEB300D Managing the Transition to Global Business
HDDINTD352 Interior Design Discourse 5
OR
HDDINTD000 IBL (37.5 credit points)

One of:
LEB300D Managing the Transition to Global Business
HDDINTD352 Professional Context 5

Semester 6
HDDINTD361 Design Project 6 (25 credit points)
HDDINTD362 Digital Technology 6
One of:
LEB306d Ecommerce Product Development and Management
HDDINTD363 Professional Context 6
OR
HDDINTD000 IBL (37.5 credit points)
One of:
LEB306d Ecommerce Product Development and Management
HDDINTD363 Interior Design Discourse 6

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

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any). Applicants are advised to undertake an art-related study such as art or graphic communication in Units 3 & 4 to assist in the development of a folio.

2003 ENTER: Individual Offer

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 36031 (HECS), 36033 (Int. Fee)
In addition to the VTAC application, all applicants must write to the School.
For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/su

DMM10 Bachelor of Design (Multimedia Design)

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 modeling, 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.

Campus
Prahran

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

Professional recognition
Graduates of the course are eligible for membership of the Australian Graphic Design Association (AGDA), membership of multimedia Industry Network (mmIN) and associate membership of the Design Institute of Australia (DIA).

Course duration
Three years full-time, six years part-time (pass degree).

Structure
The Bachelor of Design (Multimedia Design) course operates under a student workload model based on 100 credit points for a full-time academic year. To qualify
for the award a student must complete, or have been granted exemption for, the subjects listed below. All subjects have a value of 12.5 credit points unless otherwise indicated. Work expected of students outside normal timetabled hours, in keeping with related design courses, will usually be no less than one for one.

In specific instances, students may wish to take a subject offered in another school of the University in place of a subject offered in this course. In order for this to occur a student must liaise with the coordinator of the course in question and seek approval of the Head of Multimedia Design.

Students successfully completing an IBL component will be awarded 75 credit points in excess of the 300 awarded for the coursework required to qualify for the Bachelor of Design. Students undertaking an IBL out-placement in Year 3 will need points in excess of the 300 awarded for the coursework required to qualify for the Bachelor of Design (Multimedia Design) (Honours) program.

Students who successfully complete the degree may apply to undertake the Bachelor of Design (Multimedia Design) (Honours) program.

Semester 1
HDD001 Design Lab 1 (25 credit points)
HDMD111 Multimedia Design Technology 1 (25 credit points)

Semester 2
HDD002 Design Lab 2 (25 credit points)
HDMD121 Multimedia Design Technology 2 (25 credit points)

Semester 3
HDMD231 Design Project Series 3 (25 credit points)
HDMD232 Multimedia Design Technology 3
HDMD233 Typographic Design for Print
HAM104 Media, Literature, Film: Texts and Contexts

Semester 4
HDMD241 Design Project Series 4 (25 credit points)
HDMD242 Multimedia Design Technology 4
HDMD243 Typographic Design for Screen
HAM105 The Media in Australia

Semester 5
HDMD251 Design Project Research Series 5 (25 credit points)
HDMD252 Individual Research Project 5
One of:
LEB300d Managing the Transition to Global Business
HAMxxx Media Studies Elective
HDMD253 Contextual Studies 5

One of:
HDMD000 IBL (37.5 credit points)
One of:
LEB300d Managing the Transition to Global Business
HAMxxx Media Studies Elective
HDMD253 Contextual Studies 5

Semester 6
HDMD361 Design Project Research Series 6 (25 credit points)
HDMD362 Individual Research Project 6
One of:
LEB306d Ecommerce Product Development and Management
HAMxxx Media Studies Elective
HDMD363 Contextual Studies 6

One of:
HDMD000 IBL (37.5 credit points)
One of:
LEB306d Ecommerce Product Development and Management
HAMxxx Media Studies Elective
HDMD363 Contextual Studies 6

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

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any). Applicants are advised to undertake art or any art-related study in Units 3 & 4 to assist in the development of a folio. It would also be an advantage to take two units from Maths, Physics, Computer Science, Technological Design and Development.

2003 ENTER: Individual offer

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 36001 (HECS), 36003 (Int. Fee)

In addition to the VTAC application, all applicants must write to the School.

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

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

FTV10 Bachelor of Film and Television

The Bachelor of Film and Television 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.

Aims & Objectives

The course 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.

Campus

Prahran

Career opportunities

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

Professional recognition

Graduates of the course are eligible for membership of the of the Australian Graphic Design Association (AGDA), membership of the Design Institute of Australia (DIA), and membership of Melbourne Art Directors Club.

Course duration

Three years full-time (six semesters or equivalent part-time).

Structure

The Bachelor of Film and Television course will operate under a student workload model based on 100 Credit Points for a full-time academic year. To qualify for the award a student must complete, or have been granted and exemption for the subjects below which total 300 Credit Points.

The following subjects are awaiting re-accreditation and should only be used as a guide.

Semester 1
HFTV111 Film & Television Technology 1
HFTV112 Film & Television Language and Communication 1
HALM104 Media Literature Film: Texts and Contexts

Semester 2
HFTV121 Film & Television Technology 2
HFTV122 Film & Television Language and Communication 2
HALM208 Issues in Electronic Media

Semester 3
HFTV231 Film & Television Technology 3
HFTV232 Film & Television Project Series 1
One of:
HFTV233 Screen Techniques 1
HDMD243 Typographic Design for Screen
HALM312 Cinema Studies
Employment in advanced areas of communication design. Communication based projects, together with contextual and professional studies. To be effective designers and communicators through a wide variety of visual merchandising, multimedia, education and research. The course educates students by visual means - such as advertising, publishing, publicity, printing, designers, who work effectively in areas where information is primarily conveyed (Communication Design) (Honours).

**Semester 4**
- HFTV241 Film & Television Technology 4
- HFTV242 Film & Television Project Series 2

**One of:**
- HFTV243 Screen Techniques 2
- HFTV244 Title Design

**Semester 5**
- HFTV251 Film & Television Project Series 3
- HFTV252 Film & Television Group Research Project 1

**One of:**
- LEB300B Managing the Transition to Global Business
- HAM00X Media Studies Elective
- HDMD353 Contextual Studies 5, OR
- HFTV200 Industry Based Learning placement

**Semester 6**
- HFTV261 Film & Television Project Research Series 2
- HFTV262 Film & Television Group Research Project 2

**One of:**
- LEB306E eCommerce Product Development and Management
- HAM00X Media Studies Elective
- HDMD363 Contextual Studies 6, OR
- HFTV200 Industry-Based Learning placement

**Flexible Delivery**
- HFTV101 Film & Television Technology Intensive

**Entry requirements**
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification. 2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).

**Application procedure**
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 36321 (HECS)

For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

**Honours Year**

**Semester 7**
- HDCD471 Design Communication Studio 7 (25 credit points)
- HDCD472 CD Hons Research 7 (25 credit points)

**OR Internal IBL**
- HDCD473 CD Professional Practice 7 (25 credit points)
- HDCD472 CD Hons Research 7 (25 credit points)

**Semester 8**
- HDCD481 Design Communication Studio 8 (25 credit points)
- HDCD482 CD Hons Research 8 (25 credit points)

**OR Internal IBL**
- HDCD483 CD Professional Practice 8 (25 credit points)
- HDCD482 CD Hons Research 8 (25 credit points)

**Entry requirements**
Successful completion of the Bachelor of Design (Communication Design) degree.

**Application procedure**
Direct application to the National Institute of Design.

**DID20 Bachelor of Design (Industrial Design) (Honours)**

The Industrial Design program has been developed to provide graduates with dynamic national and international career opportunities designing innovative products. Employment opportunities exist in industry sectors such as furniture, automotive, sporting equipment, medical, exhibition, and set design. Students learn a variety of presentation and communication techniques including digital modeling and model making utilising a wide range of industry software and workshop based prototyping facilities. New materials and manufacturing techniques are explored with a view to creating product concepts for the future. The creative and technological thrust of the program is supported by business studies, professional practice, consumer knowledge, and ethics.

**Campus**
Prahran

**Career opportunities**
Students who graduate with an Honours degree will have enhanced employment opportunities in 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 course are eligible for associate membership of the Design Institute of Australia, the Australian Graphic Design Association, COGRADA International Council of Graphic Design Associations.

**Course duration**
One year full-time or two years part-time.

**Structure**
To qualify for the Bachelor of Design (Honours) a student must complete the subjects listed below.

IBL placement is within the Design Centre (a hybrid educational and consultancy unit) in the school. Honours students will be engaged in 25 credit points of consultancy work and 25 credit points of research project work per semester.

Students will be required to demonstrate their academic and professional suitability via an interview at the end of the preceding semester.

Work expected outside normal timetabled contact hours, in keeping with related design courses, will usually be no less than a minimum of one for one.
**Professional recognition**
Membership of the Design Institute of Australia.

**Course duration**
One year full-time or two years part-time.

**Structure**
To qualify for the Bachelor of Design (Honours) a student must complete the subjects listed below.

IBL placement is within the Design Centre (a hybrid educational and consultancy unit), in the school. Honours students will be engaged in 25 credit points of consultancy work and 25 credit points of research project work per semester.

Students will be required to demonstrate their academic and professional suitability via an interview at the end of the preceding semester.

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

**Honours Year**

**Semester 7**
- **HDID471** Studio Practice 7 (25 credit points)
- **HDID472** ID Hons Research 7 (25 credit points)
- **OR Internal IBL**
  - **HDID473** ID Professional Practice 7 (25 credit points)
  - **HDID472** ID Hons Research 7 (25 credit points)

**Semester 8**
- **HDID481** Studio Practice 8 (25 credit points)
- **HDID482** ID Hons Research 8 (25 credit points)
- **OR Internal IBL**
  - **HDID483** ID Professional Practice 8 (25 credit points)
  - **HDID482** ID Hons Research 8 (25 credit points)

**Entry requirements**
Successful completion of the Bachelor of Design (Industrial Design) degree.

**Application procedure**
Direct application to the National Institute of Design.

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**DINTD20 Bachelor of Design (Interior Design) (Honours)**

The Interior Design honours program deals with the design of exhibitions (such as trade shows, events and museum displays), public environments (for example theatres, cinemas, government agencies and institutions) and commercial spaces (including restaurants, offices, hotels, shopping areas and airports). Design projects typically cover the construction of 3D space, surface treatments, materials, lighting, sound, fittings and furniture design. Students are provided with a broad education in communication, and a firm grounding in the technology and science of interior and exhibition design, including CAD, technical drawing and 3D modeling.

**Campus**
Prahran

**Career opportunities**
Students who graduate with an honours degree will have enhanced employment opportunities in interior and exhibition design, hotel/retail design, theatre design, museum design, computer aided design, design management.

**Professional recognition**
Membership of the Design Institute of Australia, the Society of Interior Designers of Australia and registration as a Building Practitioner.

**Course duration**
One year full-time, two years part-time

**Structure**
To qualify for the Bachelor of Design (Honours) a student must complete the subjects listed below.

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**DMM20 Bachelor of Design (Multimedia Design) (Honours)**

The Multimedia Design Honours 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 modeling, 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.

**Campus**
Prahran

**Career opportunities**
Students who graduate with an honours degree will have enhanced career opportunities in design consultancies, information technology companies, media and entertainment studios, advertising agencies and government instrumentalities.

**Professional recognition**
Graduates of the course are eligible for membership of the Australian Graphic Design Association (AGDA), membership of multimedia Industry Network (mmiN) and associate membership of the Design Institute of Australia (DIA).

**Course duration**
One year full-time, two years part-time

**Structure**
A Bachelor of Design (Honours) will be awarded to students who complete placement within the Design Centre (a hybrid educational and consultancy unit), in the School at the beginning of Year 4 (for Semester 7 and 8). Honours students will spend approximately 6 hours per week working on their research projects, for which a further 25 credit points will be awarded.

Honours students will be engaged in 25 credit points of consultancy work and 25 credit points of research project work per semester. Students will be required to demonstrate their academic and professional suitability via an interview at the end of the proceeding semester. Work expected of students outside normal timetabled hours, in keeping with related design courses, will usually be no less than one for one.
Honours Year
semester 7
HDMD471 Multimedia Design Technology 7
HDMD472 Individual Multimedia Project 7
HDMD473 Group Multimedia Project 7 (25 credit points)

Semester 8
HDMD481 Multimedia Design Technology 8
HDMD482 Individual Multimedia Project 8
HDMD483 Group Multimedia Project 8 (25 credit points)

Entry requirements
Successful completion of the Bachelor of Design (Multimedia Design) degree.

Application procedure
Direct application to the National Institute of Design.

FTV20 Bachelor of Film and Television (Honours)

The Bachelor of Film and Television 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.

Aims & Objectives
The course aims to equip students to establish independent research methodologies relating to implementation of film, television and digital imaging technologies and to develop high levels of expertise within specific production areas of an industry standard level.

Campus
Prahran

Career opportunities
Broadcast film and video post-production, computer/video game development and mobile network telecommunications, scriptwriting.

Professional recognition
Graduates of the course are eligible for membership of the: of the Australian Graphic Design Association (AGDA), membership of the Design Institute of Australia (DIA), and membership of Melbourne Art Directors Club.

Course duration
One year full-time

Structure
To qualify for the Bachelor of Film and Television (Honours) students will have successfully completed the subjects in the Bachelor of Film and Television which total 400 credit points. In Semester 7, students will undertake HFTV471 - Film & Television Technology H1 and HFTV472 and Individual Research project. In Semester 8 students will undertake HFTV481 - Film & Television Technology H2, HFTV482 - another Individual Research Project and HFTV483 a Group Research project. Work expected outside normal timetabled contact hours will usually be no less than a minimum of one for one. Some of these hours will need to be completed on campus.

Honours Year
The following subjects are awaiting re-accreditation and should only be used as a guide.

Semester 7
HFTV471 Film & Television Technology H1
HFTV472 Film & Television Individual Research Project H1
HFTV473 Film & Television Group Research Project H1

Semester 8
HFTV481 Film & Television Technology H2
HFTV482 Film & Television Individual Research Project H2
HFTV483 Film & Television Group Research Project H2

Entry requirements
Successful completion of the Bachelor of Film and Television degree.

Application procedure
Direct application to the National Institute of Design. This course will not be offered until 2006.
School of Biophysical Sciences and Electrical Engineering

The School of Biophysical Sciences and Electrical Engineering (BSEE) provides a unique combination of disciplines covering astrophysics, the biomedical sciences, electronics and computer systems, multimedia, photonics, psychology/psychophysiology and telecommunications.

This intriguing multi-disciplinary mix is both a progressive and exciting step forward for tertiary education, reflecting the inherently diverse nature of knowledge.

Specific areas of strength of the School in teaching and research include: electronics, control systems, telecommunications engineering, imaging and applied optics, computer systems engineering, intelligent systems, power systems, scientific and biomedical instrumentation, applied physics, astrophysics and supercomputing, medical biophysics, cardiac technology, applied neurosciences, psychophysiology and education research and development.

Further information
Contact the School of Biophysical Sciences and Electrical Engineering
Telephone: +61 3 9214 8659
Fax: +61 3 9819 0856
Email: bsee@swin.edu.au
Website: www.swinburne.edu.au/bioscieleceng/

Z029 Bachelor of Engineering (Biomedical Engineering)

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 for clinical care and biomedical monitoring.

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.

Course duration
Four years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available.

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 subjects, 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 subjects from five Subject 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, and a further
- 37.5 credit points chosen from Technical (BME) Studies and/or Software Engineering Studies.

| Biomedical Engineering (BME) Core Studies (all 12.5 CP) |
|-----------------|-----------------|
| HET1000 | Professional Engineering |
| HET102 | Introductory Physiology |
| HET124 | Energy & Motion |
| HET128 | Physics 2 |
| HET133 | Human Physiology |
| HET182 | Electronic Systems |
| HET202 | Digital Electronics Design |
| HET214 | Circuits & Electronics 1 |
| HET226 | Sensory Systems |
| HET230 | Cardiovascular Biophysics |
| HET232 | Embedded Microcontrollers |
| HET235 | Biomedical Electronics |
| HET240 | Cellular Biophysics |
| HET260 | Renal & Respiratory Biophysics |
| HET314 | Communications Principles |
| HET408 | Biomedical Imaging & Emerging Technologies |
| HET419 | Physiological Modelling |
| HET550 | Design & 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) |
|-----------------|-----------------|
| HIT1051 | Software Development 1 |
| HIT1052 | Software Development 2 |
| HIT3072 | C++ for Programmers |

| Technical (BME) Studies (all 12.5 CP) |
|-----------------|-----------------|
| HET103 | Photonics 1 |
| HET308 | Circuits & Electronics 2 |
| HET312 | Control and Automation |
| HET329 | Digital Signal & Image Processing |
| HET338 | Intelligent Systems |
| HET483 | Robotic Control |

| Specialist Technical (BME) Studies (all 12.5 CP) |
|-----------------|-----------------|
| HET219 | Neurological Monitoring |
| HET277 | Neurophysiology |
| HET425 | Nucleic acids and Spectroscopy |
| HET527 | Sleep and Attention |

| Management and Business Studies (all 12.5 CP) |
|-----------------|-----------------|
| HBSG200 | New Venture Development & Management |
| HES3380 | Engineering Management 1 |
| HES380 | Engineering Management 2 |
| HES395 | Engineering Management 3 |

| Recommended Study Sequence |
|-----------------|-----------------|
| Semester 1 |
| HET1000 | Professional Engineering |
| HET102 | Introductory Physiology |
| HET124 | Energy & Motion |
| HMS111 | Engineering Mathematics 1 |
| Semester 2 |
| HET133 | Human Physiology |
| HET182 | Electronic Systems |
| HIT1051 | Software Development 1 |
| HMS112 | Engineering Mathematics 2 |
To develop in students a mastery of a wide spectrum of basic engineering principles underlying electronics and computer systems engineering;
HET308 Circuits & Electronics 2
HET312 Control and Automation
HET314 Communications Principles
HET316 Electromagnetic Waves
HET329 Digital Signal & Image Processing
HET378 Integrated Circuit Design
HET416 Computer System Engineering
HET513 Design of DSP Architectures
HET515 Advanced Embedded Systems
HET550 Design & Development Project 1
HET556 Design & Development Project 2
HET1005 Engineering Project
HMS111 Engineering Mathematics 1
HMS112 Engineering Mathematics 2
HMS213 Engineering Mathematics 3B
HMS214 Engineering Mathematics 4B

Software Engineering Studies (all 12.5 CP)
HIT1051 Software Development 1
HIT1052 Software Development 2
HIT3072 C++ for Programmers

Technical (E&CS) Studies (all 12.5 CP)
HESS250 Robotic System Design
HET225 Electrical Machines
HET315 Communications Information Theory
HET343 Mechatronics
HET417 Photonics & Fibre Optics
HET489 Robotics Control
HET452 Wireless Communications
HET559 Power Electronics
HIT2024 Introduction to Human Computer Interaction

Specialist Technical (E&CS) Studies (all 12.5 CP)
HET209 Fibre Optics Communication
HET336 Network Engineering
HET406 Multimedia Data Processing
HET517 RF Electronics Design
HIT2114 Operating Systems (Linux)
HIT3138 Intelligent Systems

Management and Business Studies (all 12.5 CP)
HBSG200 New Venture Development & Management
HESS380 Engineering Management 1
HESS380 Engineering Management 2
HESS385 Engineering Management 3

Notes:
- Not all subjects are offered all semesters.
- Some subjects may only be 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 BSEE Academic Committee.

Recommended Study Sequence

Semester 1
HET1008 Professional Engineering
HET124 Energy & Motion
HIT1051 Software Development 1
HMS111 Engineering Mathematics 1

Semester 2
HET182 Electronic Systems
HET1005 Engineering Project

HIT1052 Software Development 2
HMS112 Engineering Mathematics 2

Semester 3
HET202 Digital Electronics Design
HET314 Communications Principles
HIT3072 C++ for Programmers
HMS213 Engineering Mathematics 3B

Semester 4
HET214 Circuits & Electronics 1
HET232 Embedded Microcontrollers
HET329 Digital Signal & Image Processing
HMS214 Engineering Mathematics 4B

Semester 5
HET308 Circuits & Electronics 2
HET312 Control & Automation
HET316 Electromagnetic Waves
HET378 Integrated Circuit Design

Optional IBL year
HET300 Industry-Based Learning
HET400 Industry-Based Learning

Semester 6
HIT416 Computer Systems Engineering
Management and Business Studies (choose one)
Technical/Specialist Technical E&CS Studies (choose two)*

Semester 7
HET513 Design of DSP Architectures
HET550 Design & Development Project 1
Management and Business Studies (choose one)
Technical/Specialist Technical E&CS Studies (choose one)*

Semester 8
HET515 Advanced Embedded Systems
HET556 Design & Development Project 2
Management and Business Studies (choose one)
Technical/Specialist Technical E&CS Studies (choose one)*

* At least 25 CP must be undertaken from the Specialist Technical (E&CS) Studies Group.

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), Mathematical Methods and in one of Biology, Chemistry, Information Technology: Information Systems, Physics, Psychology or Specialist Mathematics.
2003 Final Clearly-In ENTER: 80.00

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34591 (HECS), 34593 (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/hed/scholarships/vcschol.htm
International students should contact the International Student Unit on +61 3 9214 9847 or via the website at: www.swinburne.edu.au/isu
E059 Bachelor of Engineering (Telecommunications and Internet Technologies)

This course provides an in-depth understanding of the technology of the internet and the international telecommunications industry. It covers the Internet, local and global digital networking and mobile communication systems for tomorrow's broadband interactive information highways.

Aims & Objectives

- 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

Career opportunities

Graduates will find rewarding high-tech careers 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.

Professional recognition

Graduates are expected to be eligible to apply for graduate membership of The Institution of Engineers, Australia.

Course duration

Four years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available.

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 subjects 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 subjects from five Subject Groups:

- Engineering (TIT) Core Studies
- Software Engineering (TIT) Studies
- Technical (TIT) Studies
- Specialist Technical (TIT) Studies
- Management and Business Studies

According to the following rules, students complete at least 400 credit points made up of:

- Engineering (TIT) Core Studies (275 credit points)
- Software Engineering (TIT) Studies (50 credit points)
- 25 credit points chosen from Technical (TIT) Studies
- 12.5 credit points chosen from Specialist Technical (TIT) Studies, and
- 37.5 credit points chosen from Management and Business Studies.

Engineering (TIT) Core Studies (all 12.5 CP)

- HET105 Professional Skills - Telecommunications
- HET192 Electronic Systems
- HET202 Digital Electronics Design
- HET214 Circuits & Electronics 1
- HET232 Embedded Microcontrollers
- HET306 UNIX for Telecommunications
- HET307 Advanced Routing & Switching
- HET313 Telecommunication Technologies
- HET314 Communications Principles
- HET315 Communications Information Theory
- HET316 Electromagnetic Waves
- HET329 Digital Signal & Image Processing
- HET336 Network Engineering
- HET436 Broadband Multimedia Networks
- HET452 Wireless Communication
- HET550 Design & Development Project 1
- HET556 Design & Development Project 2
- HIT3041 Advanced Web Development
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HMS213 Engineering Mathematics 3B
- HMS214 Engineering Mathematics 4B

Software Engineering (TIT) Studies (all 12.5 CP)

- HIT1031 Introduction to Software Engineering
- HIT1051 Software Development 1
- HIT1052 Software Development 2
- HIT3072 C++ for Programmers

Technical (TIT) Studies (all 12.5 CP)

- HET1044 LAN Principles#
- HET410 Network Administration
- HET417 Photonics & Fibre Optics
- HET424 IP Technologies#
- HET1005 Engineering Project

Specialist Technical (TIT) Studies (all 12.5 CP)

- HET406 Multimedia Data Processing
- HET417 Photonics & Fibre Optics

Management & Business Studies (all 12.5 CP)

- HBSG200 New Venture Development
- HES3390 Engineering Management 1
- HES3380 Engineering Management 2
- HES3395 Engineering Management 3

# Students who have not completed an approved Cisco Networking Academy Program (CNAP) must do HET104 and HET424

Recommended Study Sequence

Semester 1

- HET105 Professional Skills - Telecommunications
- HET313 Telecommunication Technologies
- HIT1051 Software Development 1
- HMS111 Engineering Mathematics 1

Swinburne University of Technology | Undergraduate Course Handbook 2004
J042 Bachelor of Multimedia

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 multimedia major together with electives chosen from the areas of media studies, business marketing, computer networking and information technology.

Campus

Hawthorn

Career opportunities

Career outcomes may include web development, information architecture, and 3D animation.

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.

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 subjects will generally be taken each semester. The typical student's average weekly workload during 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.

The table below illustrates how the course would be structured to fit into four semesters (assumes 100 CP of credit has been granted for previous study). All subjects are 12.5 credit points. Elective subjects will normally be drawn from the existing pool of co-major subjects currently available in the Bachelor of Multimedia suite of courses. These subjects are primarily in the areas of Media Studies, Business Marketing, Computer Networking and Information Technology.

**Semester 1**

- HET113 Internet & WWW1
- HDMD101 Design for Multimedia 1
- HET213 User Experience Design
- Elective

**Semester 2**

- HET123 Internet & WWW2
- HDMD102 Design for Multimedia 2
- HET208 3D Animation
- Elective

**Semester 3**

- HET404 Multimedia Systems
- HDMD201 Design for Multimedia 3
- HET401 Multimedia Project 1
- Elective

**Semester 4**

- HET409 Advanced Multimedia
- HET402 Multimedia Project 2
- HET202 Digital Video & Audio
- Elective

Entry requirements

Successful completion of a two-year diploma (or its equivalent) with a grade average of at least 65%, although this may vary depending on the course and awarding institution. In some cases a selection interview may be required.
Co-major Studies Group A, Further Multimedia Studies, Core Multimedia Studies, sessions will be approximately 16 hours/week during academic semesters. Including lectures, classes, tutorials, flexible learning and laboratory and field semester is therefore expected to be fifty hours. Total student contact hours, taken each semester. The typical student's average weekly workload during points for a full-time academic year. One credit point is deemed to be equivalent to Structure (IBL) may also be available. Three years full-time. An optional and additional year of Industry-Based Learning Industry. A broad spectrum of career opportunities in eCommerce and the multimedia Career opportunities Hawthorn and Prahran Campus Career opportunities A broad spectrum of career opportunities in eCommerce and the multimedia industry. Course duration Three years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available. 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 subjects, 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 subjects from five Subject Groups: Co-major Studies, Further Multimedia Studies, Co-major Studies Group A, Co-major Studies Group B, and 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. Core Multimedia Studies HET113 The Internet & WWW 1 HET213 User Experience Design HET215 Multimedia Applications HET401 Multimedia Project 1 HET402 Multimedia Project 2 HET407 Multimedia Technology HDMD101 Design for Multimedia 1 Further Multimedia Studies HDMD102 Design for Multimedia 2 HET123 The Internet & WWW2 HET208 3D Animation & Special Effects HET222 Digital Video & Audio HET324 Interactive Animation HET325 Principles of Game Design HET332 Multimedia Development Co-major Studies Group A HBM110 The Marketing Concept HBM220 Market Behaviour HBM222 Marketing Planning HBM330 Marketing Innovation Management HBM341 Business Strategy HBG229 Marketing Research HMB110 Quantitative Analysis A Co-major Studies Group B HBM223 Transnational Marketing HBM271 Customer Relationship Management HBM272 eMarketing HBM331 Services Marketing & Management HBM333 Communications Strategy HBM39 Transnational Business Practices Elective Studies HBC110 Accounting for Success HBE110 Microeconomics HBG270 eBusiness HBH110 Organisations & Management HBL111 Law in Global Business HBL222 Marketing Law HBM370 e-Commerce Strategy: A Management Perspective HAM113 Professional Communication Practice Notes: Not all subjects 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 School of Biophysical Sciences and Electrical Engineering Academic Committee.
### Recommended Study Sequence

#### Semester 1
- **HDM101** Design for Multimedia 1
- **HET113** The Internet & WWW 1
- **HBM110** The Marketing Concept
- **HMB110** Quantitative Analysis A

#### Semester 2
- **HDM102** Design for Multimedia 2
- **HBM220** Market Behaviour
- **HBM222** Marketing Planning
  
  Choose one of:
  - **HET123** The Internet & WWW 2
  - **HET222** Digital Video & Audio

#### Semester 3
- **HET213** User Experience Design
- **HET215** Multimedia Applications
- **HB2229** Marketing Research
  
  Choose one of:
  - **HBE110** Microeconomics
  - **HBB110** Organisations & Management
  - **HL111** Law in Global Business
  - **HB2270** eBusiness
  - **HBM271** Customer Relationship Management

#### Semester 4
  
  Choose two of:
  - **HET123** The Internet & WWW 2
  - **HET208** 3D Animation & Special Effects
  - **HET222** Digital Video & Audio
  - **HET332** Multimedia Development
  
  Choose two of:
  - **HBC110** Accounting for Success
  - **HB2270** eBusiness
  - **HBL111** Law in Global Business
  - **HBL222** Marketing Law
  - **HBM223** Transnational Marketing
  - **HBM271** Customer Relationship Management
  - **HBM272** eMarketing

#### Optional IBL year
- **HET300** Industry-Based Learning
- **HET400** Industry-Based Learning

#### Semester 5
- **HET401** Multimedia Project 1
- **HET407** Multimedia Technology
- **HBM330** Marketing Innovation Management
  
  Choose one of:
  - **HBL222** Marketing Law
  - **HBM272** eMarketing
  - **HBM331** Services Marketing & Management
  - **HBM333** Communications Strategy
  - **HBM338** Transnational Business Practices

#### Semester 6
- **HET402** Multimedia Project 2
- **HBM341** Business Strategy
  
  Choose one of:
  - **HET123** The Internet & WWW 2
  - **HET208** 3D Animation & Special Effects
  - **HET324** Interactive Animation

### Entry requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent.

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).

2003 3.9214 or 8867 or visit the website at: www.swinburne.edu.au/su

### Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34061(HECS) 34063 (Int. Fee)

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

International students should contact the International Student Unit on +61 3 9214 8867 or visit the website at: www.swinburne.edu.au/su

### J055 Bachelor of Multimedia (Media Studies)

This course would serve the needs of those wishing to pursue a multimedia-oriented career, particularly related to the production and design of multimedia applications in their respective chosen discipline, as expressed by the co-major.

The combination with multimedia studies will focus on 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. Graduates are expected to be in high demand as the media industry progressively shifts its delivery to the newer modalities made possible by the Internet and the World Wide Web.

### 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 and Prahran
Career opportunities
Graduates of this program 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 the new wave of electronic publications and news broadcasts, computer authoring and information architecture.

Course duration
Three years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available.

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 subjects, 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 subjects from five Subject Groups:
- Core Multimedia Studies,
- Further Multimedia Studies,
- Co-major Studies Group A,
- Co-major Studies Group B, and
- 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.

Core Multimedia Studies
HET113 The Internet & WWW 1
HET213 User Experience Design
HET215 Multimedia Applications
HET401 Multimedia Project 1
HET402 Multimedia Project 2
HET407 Multimedia Technology
HDM101 Design for Multimedia 1

Further Multimedia Studies
HDM102 Design for Multimedia 2
HET213 The Internet & WWW 2
HET208 3D Animation & Special Effects
HET222 Digital Video & Audio
HET224 Interactive Animation
HET325 Principles of Game Design
HET332 Multimedia Development

Co-major Studies Group A
HALM104 Media, Literature & Film: Texts & Contexts
HAM105 The Media in Australia
HAM210 Popular Culture
HAM211 New Media: The Telecommunications Revolution
HAM315 Information Society: A Global Perspective

Co-major Studies Group B
HAH101 History of Ideas
HAH103 Critical Thinking
HAL103 Writing Fiction
HALM201 Media Voices, Media Style - The Process of Journalism
HALM206 Special Issues in the Media

Elective Studies
HALM212 Cinema Studies
HALM316 Electronic Writing
HBSS200 New Venture Development & Management
HAM113 Professional Communication Practice
Media Studies Elective (at least Stage 2)
Arts Elective (at least Stage 2)

Notes:
- Not all subjects 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 School of Biophysical Sciences and Electrical Engineering Academic Committee.

Recommended Study Sequence

Semester 1
HDM101 Design for Multimedia 1
HET113 The Internet & WWW 1
HALM104 Media, Literature & Film: Texts & Contexts
Choose 1 of:
- HAH103 Critical Thinking
- HAL103 Writing Fiction

Semester 2
HDM102 Design for Multimedia 2
HAM105 The Media in Australia
HALM206 Special Issues in the Media
Choose 1 of:
- HET123 The Internet & WWW 2
- HET222 Digital Video & Audio

Semester 3
HET213 User Experience Design
HALM201 Media Voices, Media Style: The Process of Journalism
HASM201 eSociety (Sociology of the Electronic Age)
Choose 1 of:
- HET123 The Internet & WWW 2
- HET222 Digital Video & Audio

Semester 4
HET213 User Experience Design
HALM201 Media Voices, Media Style: The Process of Journalism
HASM201 eSociety (Sociology of the Electronic Age)
Choose 1 of:
- HET123 The Internet & WWW 2
- HET222 Digital Video & Audio

Optional IBL year
HET300 Industry-Based Learning
HET400 Industry-Based Learning

Semester 5
HAM210 Popular Culture
HAM401 Multimedia Project 1
HAM407 Multimedia Technology
Choose 1 of:
- HALM312 Cinema Studies
HALM316  Electronic Writing  
HAM113  Professional Communication Practice

**Semester 6**

HET402  Multimedia Project 2  
Choose 1 of:
HET233  The Internet & WWW 2  
HET208  3D Animation & Special Effects  
HET324  Interactive Animation  
HET325  Principles of Game Design  
HET332  Multimedia Development

Choose 2 of:
HBSG200  New Venture Development & Management  
HALM317  Literature/Media Project  
Media Studies Elective (at least stage 2)  
Arts Elective (at least stage 2)

Note: Electives will be offered subject to a sufficient number of enrolments.

**Entry requirements**

Successful completion of an appropriate Victorian Year 12 or its equivalent.

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).

2003 Final Clearly-In ENTER: 85.00

**Application procedure**

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34081 (HECS) 34083 (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/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 8847 or via email: intl-admissions@swin.edu.au

**J043 Bachelor of Multimedia**

(Networks and Computing)

This course develops an in-depth understanding of the broad range of development aspects of multimedia systems and the technologies underpinning them, with a particular emphasis on the internet and computer communications.

**Aims & Objectives**

The Bachelor of Multimedia (Networks & Computing) aims to produce graduates with a broad range of multimedia production skills combined with the fundamental programming skills required to develop interactive applications, plus a solid foundation in the technology of computer networks and the Internet. A graduate of the Bachelor of Multimedia (Networks & Computing) 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.
- 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 application development, and the skills necessary for working in a multimedia development team on a large scale project.
- 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 and Prahran

**Career opportunities**

This course would serve the needs of those wishing to pursue a multimedia-oriented career, particularly related to the production and design of multimedia applications in their respective chosen discipline, as expressed by the co-major. This program covers sufficient studies in software development to enable graduates to exploit this in areas such as Java-based website development. In addition graduates can expect to be in demand for their networking skills in the multimedia industry to manage corporate LANs, intranets and other Internet access facilities.

**Course duration**

Three years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available.

**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 subjects, each worth 12.5 credit points, will generally be taken each semester. The typical student’s average weekly workload during the 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 subjects from five Subject Groups:

- Core Multimedia Studies,
- Further Multimedia Studies,
- Co-major Studies Group A,
- Co-major Studies Group B, and
- Elective Studies,

according to the following rules:

Students complete at least 300 credit points made up of:

- 100 credit points from Core Multimedia Studies,
- 50 credit points from Further Multimedia Studies,
- 75 credit points from Co-major Studies Group A,
- 37.5 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.

**Core Multimedia Studies**

HDMD101  Design for Multimedia 1  
HET113  The Internet & WWW 1  
HET213  User Experience Design  
HET215  Multimedia Applications  
HET401  Multimedia Project 1  
HET402  Multimedia Project 2  
HET407  Multimedia Technology  
HET123  The Internet & WWW 2+, or  
HIT2082  Advanced Web Technologies #

**Further Multimedia Studies**

HDMD102  Design for Multimedia 2  
HET208  3D Animation & Special Effects  
HET222  Digital Video & Audio  
HET324  Interactive Animation  
HET325  Principles of Game Design  
HET332  Multimedia Development

**Co-major Studies Group A**

HET104  LAN Principles*  
HET306  UNIX for Telecommunications  
HET307  Advanced Telecommunications
HET410  Network Administration (MCSE)
HET424  IP Technologies*
HIT1051  Software Development 1
HIT2016  Database 1

Co-major Studies Group B
HIT1031  Introduction to Software Engineering
HIT1052  Software Development 2
HIT2110  Programming in VB.NET
HIT2149  Analysis, Modelling and Design
HIT3017  Database 2
HIT3044  Professional Issues in Information Technology
HIT3072  C++ for Programmers
HIT3087  Advanced Java

Elective Studies
HAM113  Professional Communication Practice
HBSG200  New Venture Development & Management
HES3380  Engineering Management 1
HET313  Telecommunication Technologies
HIT2253  Data Structures and Algorithms
HIT3102  Intelligent Agents
HMS111  Engineering Mathematics 1
HMS112  Engineering Mathematics 2
* Students who have not completed an approved CNAP must do HET104 and HET424
# Students may complete only one of HET123 and HIT2092

Notes:
- Not all subjects 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 School of Biophysical Sciences and Electrical Engineering Academic Committee.

Recommended Study Sequence

Semester 1
HDMD101  Design for Multimedia 1
HET113  The Internet & WWW 1
HIT1051  Software Development 1
Choose 1 of:
HMS111  Engineering Mathematics 1
HET313  Telecommunication Technologies

Semester 2
HDMD102  Design for Multimedia 2
HET104  LAN Principles*
Choose 1 of:
HIT1052  Software Development 2
HIT2110  Programming in VB.NET
Choose 1 of:
HET213  The Internet & WWW 2#
HIT2092  Advanced Web Technologies #

Semester 3
HET215  Multimedia Applications
HET213  User Experience Design
HET424  IP Technologies*
HIT2016  Database 1

Semester 4
HIT1031  Introduction to Software Engineering
Choose 2 of:
HIT1038  3D Animation & Special Effects

HET222  Digital Video & Audio
HET332  Multimedia Development
Choose 1 of:
HET306  UNIX for Telecommunications
HET410  Network Administration

Optional IBL year
HET300  Industry-Based Learning
HET400  Industry-Based Learning

Semester 5
HET401  Multimedia Project 1
HET407  Multimedia Technology
HET307  Advanced Routing & Switching
Choose 1 of:
HIT2110  Programming in VB.NET
HIT3072  C++ for Programmers
HIT3087  Advanced Java
HIT2149  Analysis, Modelling and Design

Semester 6
HET402  Multimedia Project 2
Choose 1 of:
HET208  3D Animation & Special Effects
HET324  Interactive Animation
HET325  Principles of Game Design
HET332  Multimedia Development
Choose 1 of:
HBSG200  New Venture Development & Management
HAM113  Professional Communication Practice
Choose 1 of:
HIT3017  Database 2
HIT3044  Professional Issues in Information Technology
* Students who have not completed an approved CNAP must do HET104 and HET424
# Students may complete only one of HET123 and HIT2092

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any) and Mathematical Methods.
2003 Final Clearly-In ENTER: 85.35

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34111(HECS), 34113 (Int. Fee)
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/hed/scholarships/vcschal.htm
International students should contact the International Student Unit on +61 3 9214 9847 or visit the website at: www.swinburne.edu.au/isu

S061 Bachelor of Science
(Biomedical Sciences)

This course serves the needs of the hospital and healthcare industry for specialists with a detailed understanding of 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.

Aims & Objectives
- To develop in students a mastery of a wide spectrum of basic principles underlying biomedical sciences;

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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 Industry Based Learning.

Campus
Hawthorn

Career opportunities
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, 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.

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 subjects, 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 to 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 subjects from five Subject 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,
  - 12.5 credit points chosen from Biomedical Elective Studies, and a further
  - 25 credit points chosen from Instrumentation/Computing Studies.

Biomedical Sciences (BMS) Core Studies (all 12.5 CP)

- HET102 Introductory Physiology
- HET124 Energy & 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 & Respiratory Biophysics
- HET408 Biomedical Imaging & Emerging Technologies
- HET419 Physiological Modelling
- HET426 Instrumentation Project
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HMS213 Engineering Mathematics 3B
- HIT2080 Introduction to Programming*, or
- HIT1051 Software Development 1*

* Students may only undertake one of HIT2080 and HIT1051. Students wishing to apply to transfer to the BSc (Biomedical Sciences)/ BEng (Electronics & Computer Systems) or BEng (Biomedical Engineering) are recommended to choose HIT1051.

First Year Elective Studies (all 12.5 CP)

- HAH103 Critical Thinking
- HES1500 Introduction to Chemistry
- HMA103 Statistics & Research Methods

Biomedical Elective Studies (all 12.5 CP)

- HET219 Neurological Monitoring
- HET527 Sleep and Attention
- HMA278 Design & Measurement 2

Instrumentation/Computing Studies (all 12.5 CP)

- HET103 Photonics 1
- HET214 Circuits & Electronics 1
- HET312 Control and Automation
- HET329 Digital Signal & Image Processing
- HET417 Photonics & Fibre Optics
- HET423 Intelligent Systems
- HET425 Nucleicacms and Spectroscopy
- HIT1052 Software Development 2
- HMS214 Engineering Mathematics 4B

Business/Entrepreneurship Studies (all 12.5 CP)

- HBSG200 New Venture Development & Management
- HES3380 Engineering Management 1
- HES3390 Engineering Management 2

Recommended Study Sequence

Semester 1

- HET102 Introductory Physiology
- HET124 Energy and Motion
- HMS111 Engineering Mathematics 1
- HIT2080 Introduction to Programming*, or
Career opportunities
Professional careers in the expanding field of photonics, fibre optics and lasers, especially for research and development in the telecommunications or medical industries.

Course duration
Three years full-time or part-time equivalent. An optional and additional year of Industry-Based Learning (IBL) may also be available.

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 for one semester whether in contact with staff or in private study. Four subjects will be 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.

Semester 1
HMS111 Engineering Mathematics 1
HET124 Energy & Motion
HET313 Telecommunications Technologies
HIT1051 Software Development 1

Semester 2
HMS112 Engineering Mathematics 2
HET182 Electronic Systems
HET103 Photonics 1
HIT1052 Software Development 2

Semester 3
HMS213 Engineering Mathematics 3B
HET210 Electronics
HET128 Physics 2
HET417 Photonics & Fibre Optics

Optional IBL year
HET300 Industry-Based Learning
HET400 Industry-Based Learning

Semester 4
HET424# IP Technologies
HET206 Modern Physics
HET204 Photonics 3
Choose one of:
HET314 Communications Principles
HET316 Electromagnetic Waves

Semester 5
HET424# IP Technologies
HET206 Modern Physics
HET204 Photonics 3
Choose one of:
HET314 Communications Principles
HET316 Electromagnetic Waves

# Students who have completed an approved CNAP can request to undertake HET410 Network Administration and HIT3041 Advanced Web Development instead of HET104 and HET424, respectively.

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.

Photonics involves the control, transfer and storage of information using light, and it will play a major role in current and future generations of telecommunications and information systems. The course provides an in-depth understanding of photonics (light, lasers, optics, optoelectronics etc.) and its application in the telecommunications industry.

Campus
Hawthorn
2004 VCE Prerequisites: Units 3 and 4 - a study score of at least 25 in English (any) and Mathematical Methods. Bonus points given for Physics, Specialist Mathematics or Information Systems.

2003 Final Clearly-In ENTER: 81.50

Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34011 (HECS), 34013 (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/hed/scholarships/vscher.htm

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

Z062Y Bachelor of Science (Psychology & Psychophysiology)

This course covers both psychology and associated physiological processes, particularly neurological and cognitive processes. It emphasises the monitoring and measurement of physiological processes using biomedical instrumentation, and relates this to behaviour and psychological state.

Aims & Objectives

- To prepare students for professional practice in 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.

These studies are aimed at developing moral, social, aesthetic, environmental and ethical concepts essential to a satisfying personal philosophy and a sound professional attitude:

- To provide students with the research and analytical skills associated with high quality physiological and psychological 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; and
- To develop students’ communication skills so that they can present their ideas clearly by verbal, written and graphic means.

Campus

Hawthorn

Career opportunities

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 institutions, sports psychology, ergonomics, psychophysiology, and clinical psychology.

Professional recognition

The Swinburne psychology major within the Bachelor of Science is accredited by the Australian Psychological Society (APS).

Course duration

Three years full-time.

There is no structured part-time course. However, students have the option of enrolling in less than the normal load, provided they meet minimum requirements of progress.

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 subjects, 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.

Semester 1

HET102 Introductory Physiology
HAY100 Psychology 100
HMA103 Statistics & Research Methods

Elective (Choose one):

HIT2080 Introduction to Programming
HEC1500 Introduction to Chemistry
HET124 Energy & Motion
HMS111 Engineering Mathematics 1
HAH100 Introduction to Philosophy
HAS100 Sociology 1A
HAH103 Critical Thinking

Semester 2

HET133 Human Physiology
HET148 Technology & Data Acquisition
HAY101 Psychology 101

Elective (Choose one):

HEC1525 Chemistry 2
HMS112 Engineering Mathematics 2
HAS101 Sociology 1B
HAH100 Introduction to Philosophy
HAH103 Critical Thinking

Semester 3

HET227 Neurophysiology
HET219 Neurological Monitoring
HMA278 Design & Measurement 2
HAY206 Developmental Psychology

Semester 4

HET226 Sensory Systems
HET231 Perception & Motor Systems
HAY205 Cognition & Human Performance
HMA279 Design & Measurement 3

Semester 5

HET527 Sleep & Attention
HET528 Higher Cortical Function
HAY208 Psychology of Personality
HAY309 Psychological Measurement

Semester 6

HET631 Psychophysiology
HET301 Psychophysiology Project
HAY307 Social Psychology
HAY321 Abnormal Psychology

Note: Electives will be offered subject to a sufficient number of enrolments.

Entry requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent.

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any) and in one of Mathematical Methods, Specialist Mathematics, Further Mathematics, Physics, Chemistry, Biology or Psychology.

2003 Final Clearly-In ENTER: 85.25

Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34141(HECS), 34143 (Int. Fee)

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

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu
DOUBLE DEGREES

**EB051 Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Business**

This double degree maximises a student’s career choices through the study of engineering and business subjects. 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**

- 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 recognised course of study which will enable graduates to join the Institution of Engineers Australia as graduate members.

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;

- Develop creativity and business-related analytical skills;
- Develop multidisciplinary applied research skills;
- 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;
- Develop both written and oral communication skills, and team work capacities;
- Develop a broad understanding of the business and social environment, especially its global and complex nature, and
- Develop skills and attitudes conducive to life-long learning.

**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**

Membership of The Institution of Engineers, Australia (IEAust).

**Course duration**

Five years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available.

**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 subjects will generally be taken each semester. The typical student’s average weekly workload during the 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 2 ½ years academic semesters of study if relevant to the first named degree or after 3 ½ years academic semesters of study if relevant to the second named degree.

Students choose subjects from four Subject Groups:

- **Engineering (E&CS/B) Core Studies**
- **Software Engineering Studies**
- **Specialist Technical (E&CS/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**

**Business Component**

This component comprises a minimum of 14 business subjects, which usually starts in the 5th academic semester. You will need to plan your business subjects and make sure you structure your course to include the following:

- **Five Core Subjects**
- **One Business Major**

A major consists of six post-core subjects 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 subjects must be undertaken in order to total a minimum of 14 subjects.
- At least two management subjects in addition to HBH110 Organisations and Management, and four subjects from Stage 3.

The following Business specific major/minors are available:

- **Accounting**
- **Business Law#**
- **Economics#**
- **eMarketing#**
- **European Business#**
- **Finance**
- **Human Resource Management/Organisation Behaviour**
- **Information Systems**
- **International Business**
- **Management**
- **Manufacturing Management**
- **Marketing**

# Available as minor only

**Engineering & Business (E&CS/B) Core Studies (all 12.5 CP)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBC110</td>
<td>Accounting for Success</td>
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<tr>
<td>HBE110</td>
<td>Microeconomics</td>
</tr>
<tr>
<td>HBH110</td>
<td>Organisations and Management</td>
</tr>
<tr>
<td>HBL111</td>
<td>Law in Global Business</td>
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<tr>
<td>HBM110</td>
<td>The Marketing Concept</td>
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<td>HEF1000</td>
<td>Professional Engineering</td>
</tr>
<tr>
<td>HET124</td>
<td>Energy &amp; Motion</td>
</tr>
</tbody>
</table>

Swinburne University of Technology | Undergraduate Course Handbook 2004
HET182 Electronic Systems
HET202 Digital Electronics Design
HET214 Circuits & Electronics 1
HET232 Embedded Microcontrollers
HET308 Circuits & Electronics 2
HET312 Control & Automation
HET314 Communications Principles
HET316 Electromagnetic Waves
HET329 Digital Signal & Image Processing
HET378 Integrated Circuit Design
HET416 Computer System Engineering
HET513 Design of DSP Architectures
HET515 Advanced Embedded Systems
HET550 Design & Development Project 1
HET556 Design & Development Project 2
HET1005 Engineering Project
HMS111 Engineering Mathematics 1
HMS112 Engineering Mathematics 2
HMS213 Engineering Mathematics 3B
HMS214 Engineering Mathematics 4B

Software Engineering Studies (all 12.5 CP)
HIT1051 Software Development 1
HIT1052 Software Development 2
HIT2072 C++ for Programmers

Specialist Technical (E&CS) Studies (all 12.5 CP)
HET209 Fibre Optics Communication
HET306 Network Engineering
HET406 Multimedia Data Processing
HET517 RF Electronics Design
HIT2114 Operating Systems (Linux)
HIT3138 Intelligent Systems

Management and Business Studies (all 12.5 CP)
Minimum of nine Business subjects including one Business major (in addition to the five core units listed above under Engineering & Business (E&CS/B) Core Studies.)

Recommended Study Sequence

Semester 1
HEF1008 Professional Engineering
HET124 Energy & Motion
HIT1051 Software Development 1
HMS111 Engineering Mathematics 1

Semester 2
HET182 Electronic Systems
HET1005 Engineering Project
HIT1052 Software Development 2
HMS112 Engineering Mathematics 2

Semester 3
HET202 Digital Electronics Design
HET314 Communications Principles
HIT3072 C++ for Programmers
HMS213 Engineering Mathematics 3B

Semester 4
HET214 Circuits & Electronics 1
HET232 Embedded Microcontrollers
HET329 Digital Signal & Image Processing
HMS214 Engineering Mathematics 4B

Semester 5
HET308 Circuits & Electronics 2
HET312 Control & Automation
HET378 Integrated Circuit Design

Optional IBL year
HET300 Industry-Based Learning
HET400 Industry-Based Learning

Semester 6
HET416 Computer Systems Engineering

Semester 7
HET316 Electromagnetic Waves
HET550 Design & Development Project 1

Semester 8
HET515 Advanced Embedded Systems
HET556 Design & Development Project 2

Semester 9
HET513 Design of DSP Architectures

Semester 10
Management and Business Studies (choose four)

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2004 VCE Prerequisites: Units 3 and 4 - a study score of at least 25 in English (any), Mathematical Methods and in one of Biology, Chemistry, Information Technology: Information Systems, Physics, Psychology or Specialist Mathematics.
2003 Final Clearly-In ENTER: 80.00

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34591 (HECS), 34593 (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/hed/scholarships/vcschol.htm
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

EC051 Bachelor of Engineering (Electronics and Computer Systems)/ Bachelor of Science (Computer Science and Software Engineering)

This double degree program is based on two single degree programs, which 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
- Develop design expertise in electronics, computer systems and software engineering;
Electronics and Computer Systems Engineering Core Studies (all 12.5 CP)

12.5 credit points from Technical Studies or Specialist Technical Studies.

37.5 credit points from Management and Business Studies, Software Engineering Studies (200 credit points), Electronics and Computer Systems Engineering Core Studies (250 credit points),

According to the following rules, students must complete at least 500 credit points

Management and Business Studies

Technical Studies

Specialist Technical Studies

Management and Business Studies

Electronics and Computer Systems Engineering Core Studies (all 12.5 CP)

- 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; and
- Deliver a professionally recognised course of study which will enable graduates to join the Institution of Engineers Australia as graduate members.

Campus

Hawthorn

Career opportunities

Career opportunities include microprocessor applications, telecommunications, analog and digital electronics design, systems modelling and control, and chip design.

Professional recognition

The single degrees that this double degree course is based on, are recognised and accredited with the appropriate professional bodies. Completion of the BEng(E&CS) satisfies the requirements for graduate membership of the Institution of Engineers Australia (IEAust). The BSc(SSSE) 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, plus an optional and additional year of Industry-Based Learning.

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 subjects, 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 subjects from five Subject 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 Systems Engineering Core Studies (250 credit points),
- Software Engineering Studies (200 credit points),
- 37.5 credit points from Management and Business Studies,
- 12.5 credit points from Technical Studies or Specialist Technical Studies.

Electronics and Computer Systems Engineering Core Studies (all 12.5 CP)

- HET1008 Professional Engineering
- HET124 Energy & Motion
- HET182 Electronic Systems
- HET202 Digital Electronics Design
- HET214 Circuits & Electronics 1
- HET222 Embedded Microcontrollers
- HET308 Circuits & Electronics 2
- HET314 Communications Principles
- HET316 Electromagnetic Waves
- HET329 Digital Signal & Image Processing
- HET378 Integrated Circuit Design
- HET416 Computer System Engineering
- HET513 Design of DSP Architectures
- HET515 Advanced Embedded Systems
- HET552 Design & Development Project
- HET1005 Engineering Project
- HES511 Engineering Mathematics 1
- HES512 Engineering Mathematics 2
- HES213 Engineering Mathematics 3B
- HES214 Engineering Mathematics 4B

Software Engineering Studies (12.5 CP except HIT3058)

- HIT1031 Introduction To Software Engineering
- HIT1051 Software Development 1
- HIT1052 Software Development 2
- HIT2016 Database 1
- HIT2024 Introduction to Human-Computer Interaction
- HIT2056 Software Project Management
- HIT2149 Analysis Modelling and Design
- HIT2253 Data Structures & Algorithms
- HIT3017 Database 2
- HIT3041 Advanced Web Development
- HIT3044 Professional Issues in IT
- HIT3047 Real Time Programming
- HIT3058 Software Engineering Project (25 cps)
- HIT3072 C++ for Programmers
- HIT3102 Intelligent Agents

Technical Studies (all 12.5 CP)

- HES5250 Robotic System Design
- HET225 Electrical Machines
- HET315 Communications Information Theory
- HET343 Mechatronics
- HET417 Photonics & Fibre Optics
- HET452 Wireless Communications
- HET489 Robotics Control
- HET559 Power Electronics
- HIT2110 Programming in VB.NET
- HIT3018 Database 3
- HIT3036 Information Technology Strategies
- HIT3045 Personal Software Process
- HIT3050 Evolutionary and Neural Computing
- HIT3057 Software Testing and Reliability
- HIT3083 UNIX System Programming
- HIT3087 Advanced Java
- HIT3157 Large Scale System Design

Specialist Technical Studies (all 12.5 CP)

- HIT209 Fibre Optics Communication
- HET336 Network Engineering
- HIT406 Multimedia Data Processing
- HET517 RF Electronics Design

Management and Business Studies (all 12.5 CP)

- HES380 Engineering Management 1
- HES380 Engineering Management 2
- HES395 Engineering Management 3
- HBSG200 New Venture Development

Note: Not all subjects are offered all semesters. Some may only be offered subject to sufficient enrolments.
Recommended Study Sequence

**Semester 1**
- HET1000 Professional Engineering
- HIT124 Energy & Motion
- HIT1051 Software Development 1
- HMS111 Engineering Mathematics 1

**Semester 2**
- HET182 Electronic Systems
- HIT1005 Engineering Project
- HIT1052 Software Development 2
- HMS112 Engineering Mathematics 2

**Semester 3**
- HET202 Digital Electronics Design
- HET314 Communications Principles
- HIT3072 C++ for Programmers
- HMS213 Engineering Mathematics 3B

**Semester 4**
- HIT214 Circuits & Electronics 1
- HIT232 Embedded Microcontrollers
- HIT1031 Introduction To Software Engineering
- HMS214 Engineering Mathematics 4B

**Semester 5**
- HET308 Circuits & Electronics 2
- HET316 Electromagnetic Waves
- HET314 Communications Principles
- HIT2253 Data Structures & Algorithms

**Optional IBL year**
- HET300 Industry-Based Learning
- HIT400 Industry-Based Learning

**Semester 6**
- HET416 Computer Systems Engineering
- HET329 Digital Signal & Image Processing
- HIT3041 Advanced Web Development
- Management and Business Studies (choose one)

**Semester 7**
- HET513 Design of DSP Architectures
- HIT2016 Database 1
- HIT2056 Software Project Management
- Management and Business Studies (choose one)

**Semester 8**
- HET515 Advanced Embedded Systems
- HIT2024 Introduction to Human Computer Interaction
- HIT2149 Analysis Modelling and Design
- Management and Business Studies (choose one)

**Semester 9**
- HET552 Design & Development Project
- HIT3058 Software Engineering Project
- HIT3047 Real Time Programming
- HIT3102 Intelligent Agents

**Semester 10**
- HIT3017 Database 2
- HIT3044 Professional Issues in IT
- HIT3058 Software Engineering Project
- 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.

**Entry requirements**
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2005 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), Mathematical Methods and in one of Biology, Chemistry, Information Technology: Information Systems, Physics, Psychology or Specialist Mathematics.

**Application procedure**
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34591 (HECS), 34593 (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/hed/scholarships/vcschol.htm
International students should contact the International Student Unit on +61 3 9214 8647 or via the website at: www.swinburne.edu.au/isu

**E069Y Bachelor of Engineering (Telecommunications and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering)**

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.

**Aims & Objectives**
- 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, written 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, technologies 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.
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, and
- 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 in the converging telecommunications, Internet, information and software engineering 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.

**Professional recognition**

Membership of The Institution of Engineers, Australia; and the Australian Computer Society.

**Course duration**

Five years full-time. An optional and additional year of Industry Based Learning (IBL) may also be available.

**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 subjects 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 subjects from Subject 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 BSEE Academic Committee.

Students choose subjects from four Subject Groups:

- TIT and Software Engineering Core Studies
- Technical (TIT) Studies
- Specialist Technical (TIT) Studies
- Management and Business Studies

According to the following rules, students complete at least 500 credit points made up of:

- TIT and Software Engineering Core Studies (425 credit points)
- 25 credit points chosen from Technical (TIT) Studies
- 12.5 credit points chosen from Specialist Technical (TIT) Studies, and
- 37.5 credit points chosen from Management and Business Studies.

**TIT and Software Engineering Core Studies (all 12.5 CP except for HIT3058)**

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<tr>
<td>HET105</td>
<td>Professional Skills - Telecommunications</td>
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<td>HET182</td>
<td>Electronic Systems</td>
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<td>HET202</td>
<td>Digital Electronics Design</td>
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<td>HET214</td>
<td>Circuits &amp; Electronics 1</td>
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<tr>
<td>HET222</td>
<td>Embedded Microcontrollers</td>
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<th>Title</th>
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<tr>
<td>HET306</td>
<td>UNIX for Telecommunications</td>
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<td>HET307</td>
<td>Advanced Routing &amp; Switching</td>
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<td>HET313</td>
<td>Telecommunication Technologies</td>
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<td>Communications Principles</td>
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<td>HET315</td>
<td>Communications Information Theory</td>
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<td>HET316</td>
<td>Electromagnetic Waves</td>
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<td>HET329</td>
<td>Digital Signal &amp; Image Processing</td>
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<td>HET336</td>
<td>Network Engineering</td>
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<td>HET436</td>
<td>Broadband Multimedia Networks</td>
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<td>HET452</td>
<td>Wireless Communication</td>
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<td>HET552</td>
<td>Design &amp; Development Project</td>
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<td>HIT1031</td>
<td>Introduction to Software Engineering</td>
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<td>HIT1051</td>
<td>Software Development 1</td>
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<td>Software Development 2</td>
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<td>HIT2016</td>
<td>Database 1</td>
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<td>HIT2024</td>
<td>Introduction to Human-Computer Interaction</td>
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<td>HIT2056</td>
<td>Software Project Management</td>
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<tr>
<td>HIT2149</td>
<td>Analysis Modelling &amp; Design</td>
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<td>HIT2253</td>
<td>Data Structures and Algorithms</td>
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<td>HIT2041</td>
<td>Advanced Web Development</td>
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<td>HIT3044</td>
<td>Professional Issues in Information Technology</td>
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<td>HIT3058</td>
<td>Software Engineering Project (50 Credit Points)</td>
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<td>HIT3072</td>
<td>C++ for Programmers</td>
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<td>HIT3102</td>
<td>Intelligent Agents</td>
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<td>Engineering Mathematics 1</td>
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<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>
</tbody>
</table>

**Technical (TIT) Studies (all 12.5 CP)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT1005</td>
<td>Engineering Project</td>
</tr>
<tr>
<td>HIT104</td>
<td>LAN Principles#</td>
</tr>
<tr>
<td>HIT410</td>
<td>Network Administration</td>
</tr>
<tr>
<td>HIT417</td>
<td>Photonics &amp; Fibre Optics</td>
</tr>
<tr>
<td>HIT424</td>
<td>IP Technologies#</td>
</tr>
<tr>
<td>HIT406</td>
<td>Multimedia Data Processing</td>
</tr>
<tr>
<td>HIT417</td>
<td>Photonics &amp; Fibre Optics</td>
</tr>
<tr>
<td>HIT3017</td>
<td>Database 2</td>
</tr>
</tbody>
</table>

**Specialist Technical (TIT) Studies (all 12.5 CP)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBSG200</td>
<td>New Venture Development</td>
</tr>
<tr>
<td>HES380</td>
<td>Engineering Management 1</td>
</tr>
<tr>
<td>HES380</td>
<td>Engineering Management 2</td>
</tr>
<tr>
<td>HES385</td>
<td>Engineering Management 3</td>
</tr>
<tr>
<td>#</td>
<td>Students who have not completed an approved Cisco Networking Academy Program (CNAP) must do HIT104 and HIT424</td>
</tr>
</tbody>
</table>

**Management & Business Studies (all 12.5 CP)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT705</td>
<td>Professional Skills - Telecommunications</td>
</tr>
<tr>
<td>HIT313</td>
<td>Telecommunication Technologies</td>
</tr>
<tr>
<td>HIT705</td>
<td>Software Development 1</td>
</tr>
<tr>
<td>HMS111</td>
<td>Engineering Mathematics 1</td>
</tr>
</tbody>
</table>

**Recommended Study Sequence**

**Semester 1**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT705</td>
<td>Professional Skills - Telecommunications</td>
</tr>
<tr>
<td>HIT313</td>
<td>Telecommunication Technologies</td>
</tr>
<tr>
<td>HIT705</td>
<td>Software Development 1</td>
</tr>
<tr>
<td>HMS111</td>
<td>Engineering Mathematics 1</td>
</tr>
</tbody>
</table>

**Semester 2**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT182</td>
<td>Electronic Systems</td>
</tr>
<tr>
<td>HIT1052</td>
<td>Software Development 2</td>
</tr>
<tr>
<td>HMS112</td>
<td>Engineering Mathematics 2</td>
</tr>
</tbody>
</table>

Choose one of:
Semester 3
HET202  Digital Electronics Design
HIT3072 C++ for Programmers
HMS213  Engineering Mathematics 3B
Choose one of:
HET417  Photonics & Fibre Optics
HIT424  IP Technologies#

Semester 4
HET214  Circuits & Electronics 1
HIT1031 Introduction to Software Engineering
HIT3041 Advanced Web Development
HMS214  Engineering Mathematics 4B

Semester 5
HET307  Advanced Routing & Switching
HET314  Communications Principles
HET336  Network Engineering
HIT2253 Data Structures and Algorithms

Optional IBL year
HET300  Industry-Based Learning
HET400  Industry-Based Learning

Semester 6
HET232  Embedded Microcontrollers
HET329  Digital Signal & Image Processing
HIT2016 Database 1
Management and Business Studies (choose one)

Semester 7
HET316  Electromagnetic Waves
HET552  Design & Development Project
HIT2056 Software Project Management
Choose one of:
HET406  Multimedia Data Processing
HET417  Photonics & Fibre Optics
HIT3017 Database 2

Semester 8
HET306  UNIX for Telecommunications
HET315  Communications Information Theory
HIT2024 Introduction to Human-Computer Interaction
HIT2149 Analysis Modelling & Design

Semester 9
HET436  Broadband Multimedia Networks
HIT3102 Intelligent Agents
HIT3058 Software Engineering Project A
Management and Business Studies (choose one)

Semester 10
HET452  Wireless Communication
HIT3044 Professional Issues in Information Technology
HIT3058 Software Engineering Project B
Management and Business Studies (choose one)

# Students who have not completed an approved Cisco Networking Academy Program (CNAF) must do HET104 and HIT424.

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any) and Mathematical Methods or Specialist Mathematics.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34791 (HESS), 34793 (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/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 9847 or via the website at: www.swinburne.edu.au/isu

J032 Bachelor of Multimedia (Networks and Computing) / Bachelor of Engineering (Telecommunications and Internet Technologies)

This double degree program provides in-depth specialist engineering knowledge of the international telecommunications industry and global networks and also of technical and creative aspects of multimedia systems. This is particularly relevant to the continued convergence of multimedia systems and communications networks, currently typified by the World Wide Web.

The core specialist studies are in creative design of multimedia, computer software development with emphasis on human computer interaction, the design of interactive learning systems, computer systems hardware and electronics, including image and audio processing, electronic communications techniques, broadband interactive telecommunications networks, computer networks and internetworking, teletraffic analysis, information theory, mobile and personal communications and the role and regulation of telecommunications technology in society.

Aims & Objectives
- 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;
- 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, written 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. These studies are aimed at developing moral, social, aesthetic, environmental and ethical concepts essential to a satisfying personal philosophy and a sound professional attitude;
- Develop in students 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 provide graduate engineers with multi-disciplinary skills that integrate the converging fields of telecommunications engineering, electronic engineering and Internet technologies with multimedia and computer networking technologies;
- To deliver a current and relevant course of study covering the principal areas of telecommunications engineering, technologies related to the Internet, software engineering, computer science, electronics and multimedia;
- To integrate the formal five-year course of study with an optional one year period of industry based learning, and
- 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 2 towards professional membership of the Australian Computer Society.
Within the field of Multimedia (Networks and Computing), the course aims to develop in students:

- A sound knowledge of design of multimedia applications and an appreciation of the various skills required;
- 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 application development, and the skills necessary for working in a multimedia development team on a large scale project;
- Skills in the application of learning and instructional design principles to structured multimedia applications;
- The communication and management skills required to successfully manage multimedia development projects;
- 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 and Prahran

Career opportunities
Potential career and market opportunities include: creation, development and technology management's roles in interactive multimedia within the advertising; instructional design, business promotion, training, education and on-line entertainment industries, as well as technology integration of telecommunications systems; computer networks, broadband interactive on-line networks, integrated computer and communication infrastructures for global networking.

Professional recognition
Membership of The Institution of Engineers, Australia.

Course duration
Five years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available.

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 subjects 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 subjects from Subject 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 BSEE Academic Committee.

Students study subjects chosen from four Subject Groups:

- Engineering & Multimedia (N&C) Core Studies
- Technical (N&C) Studies
- Software Engineering (N&C) Studies, and
- Management and Business Studies

According to the following rules, students must complete at least 500 credit points made up of:

- Engineering & Multimedia (N&C) Core Studies (375 credit points)
- Software Engineering (N&C) Studies (50 credit points)
- 37.5 credit points chosen from Technical (N&C) Studies
- 37.5 credit points chosen from Management and Business Studies.

Engineering & Multimedia (N&C) Core Studies (all 12.5 CP)

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HET104</td>
<td>The Internet &amp; WWW 1</td>
</tr>
<tr>
<td>HET182</td>
<td>Electronic Systems</td>
</tr>
<tr>
<td>HET202</td>
<td>Digital Electronics Design</td>
</tr>
<tr>
<td>HET208 3D</td>
<td>Animation &amp; Special Effects</td>
</tr>
<tr>
<td>HET213</td>
<td>User Experience Design</td>
</tr>
<tr>
<td>HET214</td>
<td>Circuits &amp; Electronics 1</td>
</tr>
<tr>
<td>HET222</td>
<td>Digital Video &amp; Audio</td>
</tr>
<tr>
<td>HET232</td>
<td>Embedded Microcontrollers</td>
</tr>
<tr>
<td>HET306</td>
<td>UNIX for Telecommunications</td>
</tr>
<tr>
<td>HET307</td>
<td>Advanced Routing &amp; Switching</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 &amp; Image Processing</td>
</tr>
<tr>
<td>HET338</td>
<td>Network Engineering</td>
</tr>
<tr>
<td>HIT404</td>
<td>Multimedia Systems</td>
</tr>
<tr>
<td>HIT406</td>
<td>Multimedia Data Processing</td>
</tr>
<tr>
<td>HIT409</td>
<td>Advanced Multimedia</td>
</tr>
<tr>
<td>HIT436</td>
<td>Broadband Multimedia Networks</td>
</tr>
<tr>
<td>HIT452</td>
<td>Wireless Communications</td>
</tr>
<tr>
<td>HIT550</td>
<td>Design &amp; Development Project 1</td>
</tr>
<tr>
<td>HIT556</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>
</tbody>
</table>

Software Engineering (N&C) Studies (all 12.5 CP)

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT1051</td>
<td>Software Development 1</td>
</tr>
<tr>
<td>HIT1052</td>
<td>Software Development 2</td>
</tr>
<tr>
<td>HIT2016</td>
<td>Database 1</td>
</tr>
<tr>
<td>HIT2072</td>
<td>C++ for Programmers</td>
</tr>
</tbody>
</table>

Technical (N&C) Studies (all 12.5 CP)

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HET104</td>
<td>LAN Principles#</td>
</tr>
<tr>
<td>HET123</td>
<td>The Internet &amp; WWWV2, OR</td>
</tr>
<tr>
<td>HIT2092</td>
<td>Advanced Web Technologies</td>
</tr>
<tr>
<td>HIT410</td>
<td>Network Administration</td>
</tr>
<tr>
<td>HIT417</td>
<td>Photonics &amp; Fibre Optics#</td>
</tr>
<tr>
<td>HIT424</td>
<td>IP Technologies</td>
</tr>
</tbody>
</table>

Management & Business Studies (all 12.5 CP)

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBSG200</td>
<td>New Venture Development</td>
</tr>
<tr>
<td>HE53380</td>
<td>Engineering Management 1</td>
</tr>
<tr>
<td>HE53385</td>
<td>Engineering Management 2</td>
</tr>
<tr>
<td>HE55385</td>
<td>Engineering Management 3</td>
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</table>

# Students who have not completed an approved Cisco Networking Academy Program (CNAP) must do HET104 and HIT424

Recommended Study Sequence

Semester 1

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDM101</td>
<td>Design for Multimedia 1</td>
</tr>
<tr>
<td>HET113</td>
<td>The Internet &amp; WWW 1</td>
</tr>
<tr>
<td>HET313</td>
<td>Telecommunication Technologies</td>
</tr>
<tr>
<td>HIT1051</td>
<td>Software Development 1</td>
</tr>
</tbody>
</table>

Semester 2

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDM102</td>
<td>Design for Multimedia 2</td>
</tr>
<tr>
<td>HIT1052</td>
<td>Software Development 2</td>
</tr>
</tbody>
</table>

Choose one of:
### Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34151 (HECS); 34153 (Int. Fee)

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/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 6647 or visit the website at: www.swinburne.edu.au/isu

**SO40 Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems)**

This double degree maximises a student's career choices through a combination of the study of the physical aspects of human physiology and the related technologies for clinical care and biomedical monitoring, together with studies in computer systems engineering.

### Aims & 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.

### Campus

Hawthorn
Career opportunities

Graduates of this double degree course take up a range of jobs in hospital departments, hospital scientists, research officers, technologists and technicians (including cardiology, neurology, thoracic medicine, anaesthesics, intensive care, and medical electronics), biological and medical research laboratories and industry. Duties may involve biomedical research, clinical work with patients, and the development, maintenance and management of specialised medical and biological electronic equipment. 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.

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 subjects, 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 subjects from five Subject 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 must complete at least 500 credit points made up of:

- Engineering & Science (BMS) Core Studies (337.5 credit points)
- 25 credit points chosen from Software Engineering Studies
- 37.5 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.

Engineering & Science (BMS) Core Studies (all 12.5 CP)

HET100 Professional Engineering
HET102 Introductory Physiology
HET124 Energy & Motion
HET128 Physics 2
HET133 Human Physiology
HET182 Electronic Systems
HET202 Digital Electronics Design
HET214 Circuits & Electronics 1
HET226 Sensory Systems
HET230 Cardiovascular Biophysics
HET232 Embedded Microcontrollers
HET235 Biomedical Electronics
HET240 Cellular Biophysics
HET260 Renal & Respiratory Biophysics
HET312 Control and Automation
HET314 Communications Principles
HET329 Digital Signal & Image Processing
HET408 Biomedical Imaging & Emerging Technologies

HET416 Computer System Engineering
HET417 Photonics & Fibre Optics
HET419 Physiological Modelling
HET550 Design & 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 CP)

HET308 Circuits & Electronics 2
HET315 Communications Information Theory
HET316 Electromagnetic Waves
HET378 Integrated Circuit Design
HET489 Robotic Control
HET513 Design of DSP Architectures
HET515 Advanced Embedded Systems
HET3138 Intelligent Systems

Software Engineering Studies (all 12.5 CP)

HIT1051 Software Development 1
HIT1052 Software Development 2
HIT3072 C++ for Programmers

Specialist Technical (BMS) Studies (all 12.5 CP)

HES1500 Introduction to Chemistry
HES1525 Chemistry 2
HET103 Photonics 1
HET219 Neurological Monitoring
HET227 Neurophysiology
HET425 Nucleicins and Spectroscopy
HET527 Sleep and Attention
HET528 Higher Cortical Function
HMA103 Statistics and Research Methods
HMA278 Design and Measurement 2A

Management and Business Studies (all 12.5 CP)

HBSG200 New Venture Development & Management
HES3380 Engineering Management 1
HES3380 Engineering Management 2
HES3385 Engineering Management 3

Recommended Study Sequence

Semester 1

- HET100 Professional Engineering
- HET124 Energy & Motion
- HMS111 Engineering Mathematics 1

Semester 2

- HET133 Human Physiology
- HIT1051 Software Development 1
- HMS112 Engineering Mathematics 2

Semester 3

- HET202 Digital Electronics Design
- HIT1052 Software Development 2
- HMS213 Engineering Mathematics 3B

Semester 4

- HET230 Cardiovascular Biophysics
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

**SO60 Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunications & Internet Technologies)**

This double degree maximises a student's career choices through a combination of photonics (light, lasers, optics, optoelectronics) and telecommunications (local and global digital networking, mobile and fibre optics communications). Photonics involves the control, transfer and storage of information using light, and it will play a major role in current and future generations of telecommunications and information systems.

**Campus**
Hawthorn

**Career opportunities**
Professional careers in the converging telecommunications and Internet industries, or research and development photonics-based research.

**Professional recognition**
Membership of The Institution of Engineers, Australia.

**Course duration**
Five years full-time. An optional and additional year of Industry-Based Learning may also be available.

**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 for one semester whether in contact with staff or in private study. Four subjects will be 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.

Students choose subjects from four Subject Groups:
- Engineering & Science (Ph-TIT) Core Studies
- Technical (Ph-TIT) Studies, and
- Management and Business Studies.

According to the following rules, students must complete at least 500 credit points made up of:
- Engineering & Science (Ph-TIT) Core Studies (37.5 credit points)
- Software Engineering (TIT) Studies (50 credit points)
- 25 credit points from Technical (Ph-TIT) Studies, and
- 37.5 credit points from Management & Business Studies.

**Engineering & Science (Ph-TIT) Core Studies (all 12.5 CP)**

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**Entry requirements**
Successful completion of an appropriate Victorian Year 12 or its equivalent.

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), Physics and Mathematical Methods.

2003 Final Clearly-In ENTER: 85.30

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**Application procedure**
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34681 (HECS); 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.swinburne.edu.au/hed/scholarships/vcschol.htm
Recommended Study Sequence

**Semester 1**
- HET124 Energy & Motion
- HET313 Telecommunications Technologies
- HIT1051 Software Development 1
- HMS111 Engineering Mathematics 1

**Semester 2**
- HET103 Photonics 1
- HET182 Electronic Systems
- HET1052 Software Development 2
- HMS112 Engineering Mathematics 2

**Semester 3**
- HET105 Professional Skills - Telecommunications
- HET128 Physics 2
- HET417 Photonics & Fibre Optics
- HMS213 Engineering Mathematics 3B

**Semester 4**
- HET203 Photonics 2
- HET205 Introduction to Modern Optics
- HET214 Circuits and Electronics 1
- HMS214 Engineering Mathematics 4B

**Optional IBL year**
- HET300 Industry-Based Learning

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HET314 Communications Principles
HET315 Communications Information Theory
HET316 Electromagnetic Waves
HET299 Digital Signal & Image Processing
HET336 Network Engineering
HET417 Photonics & Fibre Optics
HET436 Broadband Multimedia Networks
HET452 Wireless Communications
HET550 Design & 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 (TIT) Studies (all 12.5 CP)**
- HIT1031 Introduction to Software Engineering
- HIT1051 Software Development 1
- HIT1052 Software Development 2
- HIT3072 C++ for Programmers

**Technical (Ph-TIT) Studies (all 12.5 CP)**
- HET104 LAN Principles#
- HET406 Multimedia Data Processing
- HET410 Network Administration
- HET424 IP Technologies#
- HIT3041 Advanced Web Development

**Management & Business Studies (all 12.5 CP)**
- HBS2000 New Venture Development
- HES3980 Engineering Management 1
- HESS380 Engineering Management 2
- HESS385 Engineering Management 3

# Students who have not completed an approved Cisco Networking Academy Program (CNAP) must do HET104 and HET424.

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**Entry requirements**

Successful completion of an appropriate Victorian Year 12 or its equivalent.

2004 VCE Prerequisites: Units 3 and 4 - a study score of at least 25 in English (any) and Mathematical Methods. Bonus points given for Physics, Specialist Mathematics or Information Systems.

2003 Final Clearly-In ENTER: 81.50

**Application procedure**

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34011 (HECS), 34013 (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/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu
E062Y Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems)

This program is offered exclusively to Vice-Chancellor’s Scholarship holders. As well as having the objectives of the Bachelor of Engineering in Electronics and Computer Systems, it aims to prepare highly capable students for careers in research and development laboratories by participation in research projects with leading research groups at Swinburne.

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.swinburne.edu.au/hec/scholarships/vecschi.htm

Aims & Objectives
- Prepare highly-capable students by a carefully selected combination of coursework and research experience for professional employment in research and development laboratories in engineering and science;
- Introduce highly capable students to a component of engineering and science research, under individual, expert guidance and mentoring, from the first year of their course;
- Develop, under individual guidance and mentoring, skills in project planning, design, organization and execution;
- Encourage students to be independent, self-motivated, lifelong learners;
- Develop effective communication skills, both in collaborating with research teams in a range of science and engineering research areas, and in the writing of research reports and publications (where appropriate);
- Encourage students to be creative and innovative in the application of basic science and engineering fundamentals to research and development;
- To develop in students a mastery of a wide range 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.

Campus
Hawthorn

Career opportunities
Professional employment in research and development laboratories and careers in engineering and science generally.

Professional recognition
Graduates are expected to be eligible to apply for graduate membership of The Institution of Engineers, Australia.

Course duration
Five years full-time including industry research and development experience.

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 subjects 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 in this program undertake research and development projects with research centres in each of year of their degree. Examples of projects can be found at www.swinburne.edu.au/bsee/mazzo/RandD/.

Students choose subjects from five Subject Groups:
- Engineering (R&D) Core Studies
- Software Engineering Studies
- Technical (R&D) Studies
- Specialist Technical (R&D) Studies
- Management and Business Studies

According to the following rules, students complete at least 500 credit points made up of:
- Engineering (R&D) Core Studies (375 credit points)
- Software Engineering Studies (37.5 credit points)
- 37.5 credit points chosen from Management and Business Studies
- 50 credit points chosen from Technical (R&D) Studies and Specialist Technical (R&D) Studies.

Engineering & Science (R&D) Core Studies (all 12.5 CP except HET405)
- HET1000 Professional Engineering
- HET101 Research and Development Project 1
- HET102 Introductory Physiology
- HET124 Energy & Motion
- HET128 Physics 2
- HET182 Electronic Systems
- HET201 Research and Development Project 2
- HET202 Digital Electronics Design
- HET214 Circuits & Electronics 1
- HET232 Embedded Microcontrollers
- HET305 Research and Development Project 3
- HET312 Control and Automation
- HET314 Communications Principles
- HET315 Communications Information Theory
- HET329 Digital Signal & Image Processing
- HET378 Integrated Circuit Design
- HET405 Research and Development Project 4 (50 credit points)
- HET416 Computer System Engineering
- HET417 Photonics & Fibre Optics
- HET501 Research and Development Project 5
- HET502 Research and Development Project 6
- HIT3138 Intelligent Systems
- HMS111 Engineering Mathematics 1
- HMS112 Engineering Mathematics 2
- HMS213 Engineering Mathematics 3B
- HMS214 Engineering Mathematics 4B
- HMS1111 Engineering Mathematics 1
- HMS1112 Engineering Mathematics 2
- HMS213 Engineering Mathematics 3B
- HMS214 Engineering Mathematics 4B

Technical (R&D) Studies (all 12.5 CP)
- HET104 LAN Principles
- HET308 Circuits & Electronics 2
- HET316 Electromagnetic Waves
- HET513 Design of DSP Architectures
- HET515 Advanced Embedded Systems
### Software Engineering Studies (all 12.5 CP)
- HIT1051: Software Development 1
- HIT1052: Software Development 2
- HIT3072: C++ for Programmers

### Specialist Technical (R&D) Studies (all 12.5 CP)
- HET103: Photonics 1
- HET133: Human Physiology
- HET226: Sensory Systems
- HET227: Neurophysiology
- HET419: Physiological Modelling
- HET425: Nuclear and Spectroscopy
- HET504: Quantum Mechanics A
- HET803: Exploring Stars and the Milky Way
- HET804: Exploring Galaxies and the Cosmos
- HET611: Introduction to Stellar Astrophysics
- HET419: Photonic Modelling
- HIT2024: Introduction to Human Computer Interaction
- HIT2523: Data Structures and Algorithms

### Management and Business Studies (all 12.5 CP)
- HBSSG200: New Venture Development & Management
- HES3380: Engineering Management 1
- HES5380: Engineering Management 2
- HES5385: Engineering Management 3

### Recommended Study Sequence

#### Semester 1
- HET100: Professional Engineering
- HET102: Introductory Physiology
- HET124: Energy and Motion
- HMS111: Engineering Mathematics 1

#### Semester 2
- HET101: Research and Development Project 1
- HET182: Electronic Systems
- HMS112: Engineering Mathematics 2

Choose one of:
- HET133: Human Physiology
- HET803: Exploring Stars and the Milky Way

#### Semester 3
- HET128: Physics 2
- HET202: Digital Electronics Design
- HIT1051: Software Development 1
- HMS213: Engineering Mathematics 3B

#### Semester 4
- HET201: Research and Development Project 2
- HET214: Circuits & Electronics 1
- HIT1052: Software Development 2
- HMS214: Engineering Mathematics 4B

#### Semester 5
- HET305: Research and Development Project 3
- HET314: Communications Principles
- HET378: Integrated Circuit Design
- HET329: Digital Signal & Image Processing

### Semester 6
- HET405: Research and Development Project 4

### Semester 7
- HET415: Control and Automation
- HET417: Photonics and Fibre Optics
- HET601: Research and Development Project 6

### Semester 8
- HIT501: Research and Development Project 5
- HIT3138: Intelligent Systems

### Semester 9
- HET611: Introduction to Stellar Astrophysics
- HIT3072: C++ for Programmers

### Semester 10
- HET418: Computer Systems Engineering
- HET701: Research and Development Project 7

### Entry requirements
- Successful completion of an appropriate Victorian Year 12 or its equivalent.
- 2004 VCE prerequisites: Units 3 & 4 - a study score of at least 25 in English (any) and Physics, and one of Mathematical Methods or Specialist Mathematics.
- 2003 Final Clearly-In ENTER: 95.35

### Application procedure
- Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34531 (HECS).
- For further information, visit the VTAC website at: www.vtac.edu.au
- Note: This program is listed under the Vice-Chancellor’s Scholarship Program in the VTAC guide.

### HONOURS YEAR

#### S066 Bachelor of Science (Biomedical Sciences)(Honours)

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. 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.

The courses’ 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
- 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.

**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.

**Semester 1**
- HET801 Honours Project 1 (37.5 CP)
- HMS770 Statistical Practice 1 (12.5 CP)

**Semester 2**
- HET802 Honours Project 2 (37.5 CP)
- Choose one of:
  - HET738 Neuropsychology Methods (12.5 CP)
  - HET820 Biomedical Research Topics (12.5 CP)
  - HET704 Neuropsychophy (12.5 CP)
  - HET771 Statistical Practice 2 (12.5 CP)

**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 subjects is required.

**Application procedure**
Contact the School of Biophysical Sciences and Electrical Engineering on (+61 3) 9214 8859, or e-mail bsee@swin.edu.au, to obtain a direct application form.

**2019 Bachelor of Science (Biophotonics)(Honours)**

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. 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**
• 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 i.e. four semester part-time.

**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’ subjects. The core subjects are defined separately for the two streams. The subjects will be offered in a flexible delivery mode (not necessarily conforming to the standard semesters of the undergraduate teaching year).

All subjects 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.

Core subjects:
- HET511 Honours Research Project (50 credit points)
- HET512 Research Methods (6 credit points)
- HET503 Lasers
- HET505 Advanced Optical Imaging Theory

Choose two from:
- HET504 Quantum Mechanics A
- HET506 Modern Optics
- HET507 Atomic and Molecular Spectroscopy and Non-linear Optics
- 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.
**Z066Y Bachelor of Science (Medical Biophysics)(Honours)**

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.

**Campus**
Hawthorn

**Course duration**
One year full-time.

**Structure**
Two streams are available in this Honours degree (appropriate IBL and insufficient IBL).

Students who have completed appropriate project work within their IBL year can complete the Honours degree with 50 credit points within a single academic semester. This must include a Research Thesis of 10,000 words, in addition to the necessary coursework subject(s).

Other students (with or without IBL) are required to complete an additional academic semester. These students must complete 100 credit points of study over the two academic semesters. This involves a Research Thesis of 10,000 words submitted in the second semester and a progress report on the research being conducted during first semester, in addition to the necessary coursework subject(s).

For both streams, the research must be carried out under the supervision of a suitably qualified member of Swinburne academic staff or relevant industry. The results for the coursework and thesis are combined to provide the level of Honours mark for the course as a whole (eg. H1, H2A, H2B, H3).

**Insufficient IBL**

**Semester 1**

HET613 Research Methods

HET822 Research Thesis

**Semester 2**

HET822 Research Thesis

OR

**Appropriate Industry Based Learning (IBL)**

**Semester 1**

HET613 Research Methods

HET822 Research Thesis

**Entry requirements**

Entry to this course is available to academically prepared students. These students must have completed all the requirements of a three-year undergraduate (pass) degree from Swinburne University of Technology or another recognised University. This pass degree should show strong academic achievement, corresponding to a Credit average or higher. It should also include at least two years of mathematics, physics, and chemistry and at least one year of science courses such as biology, computer science, materials science, or electronics.

**Z039 Bachelor of Science (Optoelectronics 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/or implementing optical 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. 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**

- 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, materials development, 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, i.e., four semesters part-time.

**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’ subjects. The core subjects are defined separately for the two streams. The subjects will be offered in a flexible delivery mode (not necessarily conforming to the standard semesters of the undergraduate teaching year).

**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.

**Core subjects:**

- HET511 Honours Research Project (50 credit points)
- HET512 Research Methods (0 credit points)
- HET503 Lasers (12.5 credit points)

**Plus one of either:**

- HET504 Quantum Mechanics A (12.5 credit points), or
- HET514 Quantum Mechanics B (12.5 credit points)

Choose two from:

- HET505 Advanced Optical Imaging (12.5 credit points)
- HET506 Modern Optics (12.5 credit points)
- HET507 Atomic and Molecular Spectroscopy & Non-linear Optics (12.5 credit points)
- HET508 Optical Waveguide Theory and Optical Fibre Sensors (12.5 credit points)
- HET509 Advanced Optical Microscopy (12.5 credit points)

**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.
Z079Y Bachelor of Science (Psychophysiology)(Honours)

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.

The courses’ 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

- 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 neurophysiological 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.

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.

Semester 1

- HAY453 Advanced Quantitative Methods (12.5 credit points)
- HET801 Honours Project 1 (37.5 CP)

Semester 2

- HET802 Honours Project 2 (37.5 CP)

Choose one of:

- HET704 Neurophilosophy (12.5 CP)
- 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 subjects is required.

Application procedure

Contact the School of Biophysical Sciences and Electrical Engineering on (+61 3) 9214 8859, or e-mail bsee@swin.edu.au, to obtain a direct application form.
School of Business

The Bachelor of Business programs offered at Swinburne’s Hawthorn campus are vocationally oriented courses 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 programs prepare 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 programs deliberately take on an entrepreneurial ‘flavour’ throughout their 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 to grasp innovative business opportunities to employ themselves and others.

Further information
Contact the School of Business on +61 3 9214 5046
Fax: +61 3 9619 2117
Email: busshet@swin.edu.au
Website: www.swinburne.edu.au/business/

A055 Bachelor of Business

The Bachelor of Business program 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 subjects, the opportunity to undertake the Industry-Based Learning (or work experience) program and/or travel overseas on international student exchanges or overseas study tours.

Aims & Objectives

The intent of the programs is for graduates to have well-developed attributes, which will equip them for their early career and life. Specifically graduates will potentially be:

- Entrepreneurial in contributing to innovation and development within their business, workplace, or community.
- Capable in their chosen professional, vocational or study areas.
- Able to operate effectively in work and community situations.
- Adaptable and able to manage change.
- Aware of environments in which they will be contributing.

This course is designed to expose students to curriculum with a strong entrepreneurial theme. Entrepreneurial skills, approaches, thinking styles and examples are woven into many subjects 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.
- 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.

The following strategies are used in the delivery of the Bachelor of Business to achieve the generic skills described in the course objectives:

- Assessment and workload expectations encourage students to be self-directed.
- Many assignments rely on peer assisted learning for successful completion.
- Current research projects in many subjects require students to seek out active businesses as case studies for their completion.

Campus

Hawthorn

Career opportunities

Accountancy, advertising, business management, computer programming, financial advice, human resources, market research, public relations, systems analysis. 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 subjects. Please note that membership to the ACS is not automatic and that each application will be considered on its merit.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HIT 1025</td>
<td>Introduction to Information Systems (core)</td>
</tr>
<tr>
<td>HIT 1081</td>
<td>Web Development</td>
</tr>
<tr>
<td>HIT 1109</td>
<td>Introduction to Programming</td>
</tr>
<tr>
<td>HIT 2016</td>
<td>Database 1</td>
</tr>
<tr>
<td>HIT 2110</td>
<td>Programming in VB.NET</td>
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<tr>
<td>HIT 3017</td>
<td>Database 2</td>
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<tr>
<td>HIT 3034</td>
<td>Information Systems Project</td>
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<tr>
<td>HIT 3044</td>
<td>Professional Issues in Information Technology</td>
</tr>
<tr>
<td>HIT 3185</td>
<td>Data Communications and Networks</td>
</tr>
</tbody>
</table>

Australian Human Resources Institute (AHRI)

To be eligible for associate membership of AHRI graduates must have completed the following eight post-core subjects:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HBB 220</td>
<td>Organisation Behaviour and Change</td>
</tr>
<tr>
<td>HBB 222</td>
<td>Organisation Design and Technology</td>
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<tr>
<td>HBB 225</td>
<td>Human Resource Management in Contemporary Organisations</td>
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<td>HBB 226</td>
<td>Strategic Human Resource Management</td>
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<tr>
<td>HBC 203</td>
<td>International Human Resource Management and Diversity</td>
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<tr>
<td>HBC 224</td>
<td>Managing Workplace Relations</td>
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<tr>
<td>HBC 225</td>
<td>Human Resource Management and Entrepreneurship</td>
</tr>
<tr>
<td>HBB 330</td>
<td>Leadership and Organisation Dynamics</td>
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</table>
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 subjects and
post-core subjects:

- HBC110 Accounting for Success
- HBL111 Law in Global Business
- HMB110/111 Quantitative Analysis A/B
- HBE110 Microeconomics
- HBB110 Organisation & Management
- HBT1025 Introduction to 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 Associate
status. An Affiliate member is required to undertake specialist banking subjects to
complete the educational requirements for Senior Associate 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 fulfill 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 fulfills the educational requirements
for recognition as a Certified Practising Marketer.

Institute of Corporate Managers, Secretaries and Administrators

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

Marketing Research Society of Australia

Graduates of this course are eligible to become members of the Marketing
Research Society of Australia.

Course duration

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

Structure

Students undertake a total of twenty-four subjects, consisting of the business core
of seven subjects, and a combination of majors, minors and electives.

A major consists of six post-core subjects (at least two at Stage 3) from one
specialisation. A minor consists of four post-core subjects (at least one at Stage 3)
from one specialisation.

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 combination of majors and minors possible are:

- Option 1 – 2 Majors, 1 Minor, 1 Elective
- Option 2 – 2 Majors, 5 Electives
- Option 3 – 1 Major, 2 Minors, 3 Electives
- Option 4 – 1 Major, 1 Minor, 7 Electives

Majors in the following Arts disciplines consist of seven subjects 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 - major

Beginners Stream consists of the following seven subjects: HAA181, HAA182,
HAA119, HAA261, plus one of HAA282 or HAA283, HAA377 plus one of HAA387
or HAA388. Advanced Stream consists of the following seven subjects: HAA184,
HAA185, HAA119, HAA284, plus one of HAA285 or HAA286, HAA377, plus one of
HAA387 or HAA388.

Japanese - major

Beginners Stream consists of the following six subjects: HAT107, HAT108,
HAT109, HAT215, HAT217, HAT218, HAT318, plus 3 subjects. Advanced Stream consists of
the following eight subjects: HAT311, HAT312, HAT313, HAT321, HAT331, HAT332,
HAT333, HAT334 & HAT331.

Japanese - minor

Beginners Stream consists of the following six subjects: HAT107, HAT108,
HAT109, HAT215, HAT217, plus 3 subjects. Advanced Stream consists of
the following six subjects: HAT311, HAT312, HAT313, HAT321, HAT332, plus
HAT333 or HAT302.

Psychology

A minor in Psychology consists of HAY100, HAY101, HAY206, HMA278, HMA279
and HAY301 or HAY321. The major in Psychology consists of seven Psychology
subjects with at least two at Stage 3.

Note: This major does not fulfill Australian Psychological Society (APS)
requirements. The approved APS three year program requires completion of the
ten Psychology subjects 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 subject sequence to be completed as part of a Bachelor of Arts or
similarly accredited program.

Majors/minors from other Schools or from other universities may be taken subject
to approval by the School of Business Academic Committee.

Course restrictions

Students should note the following restrictions:

- A minimum of eight subjects must be completed at Swinburne University.
  This must include completion of half the subjects for all majors and minors.
  At least one Stage 3 subject 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 subject exemptions, studies completed through international
  exchange, cross-institutional study or study abroad.
- A maximum of twelve subjects from any discipline (e.g. Marketing - 'HBM'
  subject code prefix).
- A maximum of ten Stage 1 subjects (e.g. HBM110 - Stage 1 subjects have a
  1 immediately following the three-letter code).
- A minimum of four Stage 3 subjects (e.g. HBC330 - Stage 3 subjects have a 3
  immediately following the three-letter code).
- Unmatched exemptions can only be used as electives and do not fulfill Stage 3
  subject course requirements.
The subject HAT119 Academic Communication Skills cannot be used for credits towards the Bachelor of Business.

A subject can only be counted once as part of a major or minor or as an elective - one subject cannot be counted twice (e.g. the subject HBM222 may be counted towards either a Management or Marketing major, but not both).

Students are not permitted to enrol in subjects where they have completed another subject that is deemed to be equivalent. Equivalent subjects cannot both be used for credit.

The subject HBSSG200 New Venture Development and Management will not normally be available for students enrolled in the Bachelor of Business.

HBI300 Industry Placement cannot be used for credit towards the Bachelor of Business.

Students will be allowed to study a maximum of twenty-six subjects as part of the Bachelor of Business.

Stage 3 subjects-Honours Stream Option

Each semester a limited number of Stage 3 subjects are offered by the School of Business to students as an Honours stream option. These subjects 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 subject 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 subjects 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 of Business

Students enrolled in the Bachelor of Business who have completed an approved Advanced Diploma or Diploma of 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 subjects (which may include matched subject credits). However, all business core subjects required as prerequisite for later Stage subjects selected for study must be completed.

Prerequisites/Corequisites

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

Industry-Based Learning (IBL)

The Bachelor of Business includes an optional Industry-Based Learning (IBL) 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 can be completed as part of IBL, it 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 the availability of places and require suitable English language skills.

The seven business core subjects are:

- HBC110 Accounting for Success (A)
- HBE110 Microeconomics (A)
- HBH110 Organisation and Management (A)
- HBL111 Law in Global Business (A)
- HBM110 The Marketing Concept
- HIT1025 Introduction to Information Systems (A)
- HMB110 Quantitative Analysis A (A), Or
- HMB111 Quantitative Analysis B (A)

(A) = Mandatory subjects for professional recognition by CPA Australia or ICAA.

Majors/Minors

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#
Swinburne University of Technology | Undergraduate Course Handbook 2004

Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34411(F/T), 34701(P/T), 34413 (Int. Fee)

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

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

BUSINESS SPECIALISATIONS

Accounting - Major/Minor

Accounting is the basic language of business. The accounting subjects offered by the School of Business 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 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 subjects 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. Subjects 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, subjects 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 subjects in tax, financial reporting and personal investment may be studied.

Some accounting subjects 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 subjects 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.

Career opportunities

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.

Structure

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

Stage 1 (Core subject)

HBC110 Accounting for Success (A)

Stage 2

HBC220 Financial Information Systems (A)
HBC221 Corporate Accounting (A)
HBC222 Management Decision Making (A)
HBC223 Analysis for Competitive Advantage (A)
HBC224 Financial Management (A)
HBC225 Auditing and Assurance (A)
HBC230 Personal Investment

Stage 3

HBC330 Current Issues in Accounting(A)
HBC331 Taxation Issues and Planning (A)
HBC339 Financial Risk Management

(A) = Mandatory accounting subjects for professional recognition by CPA Australia or ICAA. The following subjects are also required for professional recognition by CPA Australia or ICAA. The following subjects are also required for professional recognition by CPA Australia or ICAA.

HBC330 Current Issues in Accounting (A)
HBC331 Taxation Issues and Planning (A)
HBC339 Financial Risk Management

Stage 1 (Core subject)

HBE110 Microeconomics

Mandatory subject

HBS341 Asia-Business Context

And three from the following:

HAJ102 Introduction to Japan - A Cultural Overview
HAJ107 Introductory Japanese 1A (or other Asian language subject)
HAJ202 Communication in Japanese
HAJ302 Work Experience in Japan
HBM312 International Investment and Taxation
HBM313 Pacific Rim Business Study Tour
HBM339 Transnational Business Practices

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.

Career opportunities

The Asian Business minor is designed to complement other majors, including International Business, Accounting, Finance, Marketing, Human Resource Management, Information Technology and Japanese.

Structure

Asian Business is available as a minor only. Students wishing to complete a minor in Asian Business will need to complete HBE341 Asia-Business Context and 3 post-core subjects from the subjects listed below.

Stage 1 (Core subject)

The following business core subject is a pre-requisite to the mandatory subject.

HBE110 Microeconomics

Mandatory subject

HBS341 Asia-Business Context

And three from the following:

HAJ102 Introduction to Japan - A Cultural Overview
HAJ107 Introductory Japanese 1A (or other Asian language subject)
HAJ202 Communication in Japanese
HAJ302 Work Experience in Japan
HBM312 International Investment and Taxation
HBM313 Pacific Rim Business Study Tour
HBM339 Transnational Business Practices

Business Law - Minor

The Business Law 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 subject 'Law in Global Business', introduces students to basic legal concepts and important areas of business law. The subject concentrates on the interrelationship of law, business and society. Other subjects deal with various aspects of business law, including contract, company, marketing, international investment, international trade and finance.

Law subjects 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 subjects to students.

Career opportunities

While not leading to a legal qualification, a Business Law 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.

Structure

Business Law is available as a minor only. Students wishing to take a minor in Business Law will need to select four post-core subjects from the subjects listed, at least one of which must be at Stage 3.

Stage 1 (Core subject)

HBL111 Law in Global Business(A)

Stage 2

HBL220 Contract Law (A)
HBL221 Company Law (A)
HBL222 Marketing Law
Entrepreneurial activity in this exciting new business field, and managers of non-businesses are being born daily. There are great opportunities for employment or line to protect existing markets and expand into new ones, and new Internet and its profound impact on commerce. Existing businesses are moving on-

cyberspace', are also covered. The fundamental drivers of cybercommerce are

The aims of this minor is to develop in students an appreciation of the events which are shaping Europe today.

The highlight of the European Business minor is that it offers two subjects 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 subject, 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 subjects 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.

Career opportunities

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.

The European Business minor is available as a minor only. A minor sequence consists of HBE220 Macroeconomics and three post-core subjects, at least one of which is at Stage 3.

Stage 1 (Core subject)

HBE110 Microeconomics (A)

Mandatory subject

HBE220 Macroeconomics (A)

And three from the following:

HBE228 Banking and Financial Markets
HBE231 Foundations of International Business
HBE333 Financial Institutions and Monetary Policy
HBE335 International Finance
HBE340 International Trade Strategies

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

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 subjects 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.

Career opportunities

It is clearly important that future business owners and employees understand the Internet and its profound impact on commerce. Existing businesses are moving online 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.

Structure

eMarketing is available as a minor only. Students are required to complete the four subjects listed.

Stage 1 (Core subjects)
The following business core subjects are pre-requisites to the Stage 2 eMarketing subjects.

HBM110 The Marketing Concept
HIT1025 Introduction to Information Systems

Stage 2

HBM370 eBusiness
HBM371 Customer Relationship Management
HBM372 eMarketing

Stage 3

HBM370 eCommerce Strategy: A Management Perspective

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 subjects 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 subject, 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 subjects 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.

Career opportunities

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.

Structure

European Business is available as a minor only. A minor sequence consists of HBM370 European Union - Business Context and three post-core subjects from the subjects listed.

Mandatory subject

HBM392 European Union - Business Context

And three from the following:

HAA119 Post-War Italy
HAA181 Italy and its Language 1 (or other European language subject)
HAA289 Comparative European Politics
HAA377 International Business in the Italian Context
HBI288 The European Union
HBI342 International Investments and Taxation

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.

Career opportunities

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.

Structure

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

Stage 1 (Core subject)

HBE110 Microeconomics (A)

Mandatory subject

HBE220 Macroeconomics (A)

And three from the following:

HBE228 Banking and Financial Markets
HBE231 Foundations of International Business
HBE333 Financial Institutions and Monetary Policy
HBE335 International Finance
HBE340 International Trade Strategies

(A) = Mandatory subjects for professional recognition by CPA Australia or ICAA
**Human Resource Management / Organisation Behaviour - Major/Minor**

The subjects 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 subjects offered in the HRM/OB area.

**Financial Systems - Major/Minor**

Information technology has pervaded every aspect of business organisations. As such, the study of computing and information systems and the supporting technology is vital for any business student. There are a number of related areas of study within the discipline: students can select majors or minors based on interest or career aspirations. These options can be categorised under three main headings:

- **Business computing**
  - Studies in this area are taken by students who see themselves as users of information systems rather than computer professionals. The emphasis is on the effective use of information technology within an organisation and the development of skills for solving business problems.

- **Business systems**
  - Studies in this area are taken by students who wish to focus on the analysis of business information needs as a basis for specification of computer based information systems, rather than the technical aspects of design and development.

- **Software development**
  - Students undertaking studies in this area will use a wide range of computer software. They will be seeking to specialise in the design, development and implementation of computer based systems in the business environment. Selecting one of these options in combination with other business studies enables the graduate to effectively apply information technologies in the solving of business problems.

**Career opportunities**

Graduates may find employment in systems analysis, project management, computer programming, software support, technical specialists in a range of IT environments, products or analytical methods. Specialties include programming, communications, and business analysis.
Structure
A major in Information Systems consists of six post-core subjects, at least two of which must be at Stage 3. A minor in Information Systems consists of four post-core subjects, at least one of which must be at Stage 3.

Stage 1
HIT1025 Introduction to Information Systems (core subject) (C)
HIT1051 Software Development 1 (JAVA) (C)
HIT1091 Web Development (C)
HIT1109 Introduction to Programming (C)

Stage 2
HIT2006 Business Computing
HIT2013 COBOL Programming
HIT2016 Database 1 (C)
HIT2024 Introduction to Human Computer Interaction
HIT2092 Advanced Web Technologies
HIT2110 Programming in VB.NET (C)
HIT2149 Systems and Modelling Analysis

Stage 3
HIT3007 Business Computing Applications
HIT3017 Database 2 (C)
HIT3018 Database 3
HIT3034 Information Systems Project (C)
HIT3036 Information Technology Strategies
HIT3044 Professional Issues in Information Technology (C)
HIT3084 eCommerce: A Business Perspective
HIT3185 Data Communications and Networks (C)
(C) = Students intending to apply for membership of the Australian Computer Society (ACS) should complete these subjects. Please note that membership to the ACS is not automatic and that each application will be considered on its merit. Students should contact the ACS directly regarding current membership requirements and recognition of exemptions based on studies undertaken outside of Australia.

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.

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

Structure
To complete an International Business major the following three mandatory subjects must be completed: HBC231, HBC340 and HBL331, at least one of HBI341, HBI392 and HBI394, and remaining subjects to be selected from HBE335, HBE340, HBI342, HBM223 and HBM339.

To complete a minor in International Business two subjects must be completed from HBI231, HBI340 and HBL331, at least one of HBI341, HBI392 and HBI394, and one subject to be selected from HBE335, HBE340, HBI342, HBM223 and HBM339.

Stage 1 (Core subjects)
The following business core subjects are pre-requisites to the mandatory subjects.
HBE110 Microeconomics

HBL111 Law in Global Business

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

Stage 2 and 3 subjects
HBE335 International Finance
HBI323 International Human Resource Management and Diversity
HBI341 Asia-Business Context
HBI342 International Investment and Taxation
HBI392 European Union - Business Context
HBI394 The Americas - Business Context
HBM223 Transnational Marketing
HBM339 Transnational Business Practices

Management - Major
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 subjects, 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 subject studying Business Strategy. 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.

Career opportunities
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. Naturally, new graduates do not begin their management careers ‘at the top’ but the integrated general management education obtained in the major will equip graduates for many organisational roles with supervisory elements and senior management potential. Graduates who move into their own family or other businesses will also find this major excellent preparation, especially if combined with a second more specialised major within the Bachelor of Business.

Structure
To complete a Management major the following six post-core subjects must be completed: HBC222, HBC224, HBM222, HBM341; one of the following: HBI230, HBI222, HBI225; or HBI226; and one of the following: HBH323, HBM229, HBM330, HBM331.

A Management minor is not offered.

Students completing both a Management and Marketing major must complete HBM222 and HBM341 as part of the Management major and complete additional subjects towards the Marketing major.

Stage 1 (Core subjects)
The following business core subjects are pre-requisites for the Management subjects.
HBC110 Accounting for Success
HBC111 Organisation and Management
HBM110 The Marketing Concept

Mandatory subjects
HBC222 Management Decision Making
HBC224 Financial Management
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.

Career opportunities

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.

Structure

The major in Manufacturing Management comprises four mandatory subjects and two additional subjects from one of the groups of subjects listed below. A minor in Manufacturing Management comprises the four mandatory subjects.

Note: Students cannot complete a major and a minor in Manufacturing Management.

Students must complete prerequisite requirements for the subjects they select.

Stage 1 (Core subjects)

The following business core subject is a pre-requisite for the mandatory Manufacturing Management subjects:

HBH110 Organisations & Management

Mandatory subjects

HBH222 Organisation Design & Technology

HBP228 Manufacturing Management

HBP338 Quality Management in Manufacturing

HBP337 Managing Technology and Innovation

Plus two subjects from one of the following groups of subjects to complete a major:

Accounting

HBC222 Management Decision Making

HBC223 Analysis for Competitive Advantage

HBC224 Financial Management

Business Law

HBL220 Contract Law

HBL222 Marketing Law

Human Resource Management/Organisation Behaviour

HBH225 Human Resource Management in Contemporary Organisations

HBM304 Managing Workplace Relations

Marketing / eMarketing

HBM222 Marketing Planning

HBM270 eBusiness

HBM330 Marketing Innovation Management

Science, Engineering and Design

Subjects approved by Head, School of Business.

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 subjects are the key features of a marketing major at Swinburne. In addition each subject has an international orientation.

Career opportunities

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

Structure

To complete a Marketing major the following post-core subjects must be completed: HBM228; HBM232; HBM270; HBF229; either HBM330 or HBM331, and HBM341.

To complete a Marketing minor with a Marketing major four of the following subjects must be completed, with at least one at Stage 3: HBM330 or HBM331; HBM333; HBM339.

Students completing both a Marketing and Management major must complete HBM330 and HBM331 and one other subject from the Marketing minor as HBM222 and HBM341 must be completed towards the Management major.

Stage 1 (Core subjects)

HBM110 The Marketing Concept

HMB110 Quantitative Analysis A, OR

HMB111 Quantitative Analysis B
### Stage 2
- **HBL222** Marketing Law
- **HBM220** Market Behaviour (highly recommended as first subject studied in Marketing major/minor post-core)
- **HBM222** Marketing Planning
- **HBM223** Transnational Marketing
- **HBM271** Customer Relationship Management
- **HBM272** eMarketing
- **HBO229** Marketing Research

### Stage 3
- **HBM330** Marketing Innovation Management
- **HBM331** Services Marketing and Management
- **HBM333** Communications Strategy
- **HBM339** Transnational Business Practice
- **HBM341** Business Strategy (capstone subject)

### A042 Bachelor of Business (Accounting)

The Bachelor of Business (Accounting) is a vocationally oriented course designed to assist in the intellectual, social and personal development of the student as preparation for entrance to accounting professions.

**Aims & Objectives**
Refer to A055 Bachelor of Business entry in this handbook.

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

**Structure**
To complete the requirements of this course, students must complete twenty-four subjects comprising the seven business core subjects and at least a major and minor or a minor and electives. A major consists of six post-core subjects at least two of which must be at Stage 3. A minor consists of four post-core subjects at least one of which must be Stage 3. Refer to the Business Specialisation section.

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

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

### Stage 1 (Business core subjects)
- **HBC110** Accounting for Success
- **HBE110** Microeconomics
- **HBI110** Organisation and Management
- **HBL111** Law in Global Business
- **HBM110** The Marketing Concept
- **HIT1025** Introduction to 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
- **HBC320** Current Issues in Accounting
- **HBC331** Taxation Issues and Planning

Six additional subjects must be completed. These subjects 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.

2004 VCE prerequisites: Units 3 and 4 - a study score of at least 25 in English (any). 2003 Final Clearly-In ENTER: 85.20

Refer to the A055 Bachelor of Business course entry for further entry options.

**Application procedure**
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34411(F/T), 34701(P/T), 34413 (Int. Fee)

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.

For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 9847 or visit the website at: www.swinburne.edu.au/isu

### A043 Bachelor of Business (Human Resource Management)

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.

**Aims & Objectives**
Refer to A055 Bachelor of Business entry in this handbook.

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

**Structure**
To complete the requirements of this course, students must complete twenty-four subjects comprising the seven business core subjects, eight Human Resource Management major or a minor and electives. A major consists of six post-core subjects at least two of which must be at Stage 3. A minor consists of four post-core subjects at least one of which must be Stage 3. Refer to the Business Specialisation section.

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

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

### Stage 1 (Business core subjects)
- **HBC110** Accounting for Success
- **HBE110** Microeconomics
- **HBI110** Organisation and Management
- **HBL111** Law in Global Business
- **HBM110** The Marketing Concept
- **HIT1025** Introduction to 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
- **HBC320** Current Issues in Accounting
- **HBC331** Taxation Issues and Planning

Six additional subjects must be completed. These subjects 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.

2004 VCE prerequisites: Units 3 and 4 - a study score of at least 25 in English (any). 2003 Final Clearly-In ENTER: 85.20

Refer to the A055 Bachelor of Business course entry for further entry options.

**Application procedure**
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34411(F/T), 34701(P/T), 34413 (Int. Fee)

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.

For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 9847 or visit the website at: www.swinburne.edu.au/isu

### A043 Bachelor of Business (Human Resource Management)

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.

**Aims & Objectives**
Refer to A055 Bachelor of Business entry in this handbook.

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

**Structure**
To complete the requirements of this course, students must complete twenty-four subjects comprising the seven business core subjects, eight Human Resource Management major or a minor and electives. A major consists of six post-core subjects at least two of which must be at Stage 3. A minor consists of four post-core subjects at least one of which must be Stage 3. Refer to the Business Specialisation section.

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

Note: this course structure should be read in conjunction with the A055 Bachelor of Business course entry in this handbook.
A major consists of six post-core subjects at least two of which must be at Stage 3 level. A minor consists of four post-core subjects at least one of which must be at Stage 3 level. Refer to the Business Specialisation section.

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

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

**Stage 1 (Business core subjects)**

- HBC110 Accounting for Success
- HBE110 Microeconomics
- HBH110 Organisation and Management
- HBL111 Law in Global Business
- HBM110 The Marketing Concept
- HIT1025 Introduction to Information Systems
- HMB110 Quantitative Analysis A, OR
- HMB111 Quantitative Analysis B

**Stage 2**

- HBE220 Organisation Behaviour and Change
- HBE222 Organisation Design and Technology
- HBE225 Human Resource Management in Contemporary Organisations
- HBE226 Strategic Human Resource Management

**Stage 3**

- HBE323 International Human Resource Management and Diversity
- HBE324 Managing Workplace Relations
- HBE325 Human Resource Management and Entrepreneurship
- HBE330 Leadership and Organisation Dynamics

Nine additional subjects must be completed. These subjects 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.

2004 VCE prerequisites: Units 3 and 4 - a study score of at least 25 in English (any).

2003 Final Clearly-In ENTER: 85.20

**Application procedure**

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34411(F/T), 34701(P/T), 34413 (Int. Fee)

NOTE: Application is to the A055 Bachelor of Business. Successful applicants will be required to seek approval from the School Administration Manager prior to enrolment.

**Overseas Study Component**

Students are required to complete a minimum of 25 credit points overseas (this may include exemptions awarded for studies completed overseas) OR completion of one of the following subjects:

- HAJ302 Work Experience in Japan
- HBJ389 Work Experience in Europe
- HBJ390 European Union Study Tour
- HBJ391 Pacific Rim Business Study Tour

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

**Stage 1 (Business core subjects)**

- HBC110 Accounting for Success
- HBE110 Microeconomics
- HBH110 Organisation and Management
- HBL111 Law in Global Business
- HBM110 The Marketing Concept
- HIT1025 Introduction to Information Systems
- HMB110 Quantitative Analysis A, OR
- HMB111 Quantitative Analysis B

**International Business Major**

Mandatory Subjects:

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

At least one of:

- HBJ341 Asia - Business Context
- HBJ392 European Union - Business Context
- HBJ394 The Americas - Business Context

And remaining subjects from:

- HBE335 International Finance
- HBH323 International Human Resource Management and Diversity
- HBJ342 International Investment and Taxation
- HBJ422 Transnational Marketing
- HBJ539 Transnational Business Practices

**Asian Business Minor**

- HBJ341 Asia - Business Context

And two from the following:
HAJ102 Introduction to Japan: A Cultural Overview
HAJ107 Introductory Japanese 1A (or other Asian language subject)
HAJ202 Communication in Japanese
HAJ302 Work Experience in Japan
HBI342 International Investment and Taxation
HBI391 Pacific Rim Business Study Tour
HBM338 Transnational Business Practices

European Business Minor
HBI382 European Union - Business Context
And three from the following:
HAA119 Post-War Italy
HAA181 Italy and its Language 1 (or other European language subject)
HAA289 Comparative European Politics
HAA377 International Business – the Italian Context
HBD288 The European Union
HBD342 International Investment and Taxation
HBD389 Work Experience in Europe
HBD390 European Union Study Tour

Students must take another seven subjects. This provides the opportunity to take a second major (six subjects) or minor (four subjects) in another discipline, plus electives. Alternatively, all seven subjects 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.
2004 VCE prerequisites: Units 3 and 4 - a study score of at least 25 in English (any).
2003 Final Clearly-In ENTER: 85.20

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
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.
For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

A044 Bachelor of Business (Marketing)
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.

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

Structure
To complete the requirements of this course students must complete twenty-four subjects comprising the seven business core subjects, a major and minor in marketing and seven additional subjects, which may be taken as a major and one elective, a minor and three electives, or seven electives.

A major consists of six post-core subjects at least two of which must be at Stage 3 level. A minor consists of four post-core subjects at least one of which must be at Stage 3 level. Refer to the Business Specialisation section.
All seventeen subjects listed below must be completed within this structure and an additional seven subjects are required to make up either another major or minor and electives.
Students wishing to enrol in subjects that are not a formal part of this course will be required to seek approval from the School Administration Manager prior to enrolment.

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

Stage 1 (Business core subjects)
HBC110 Accounting for Success
HBE110 Microeconomics
HBEH10 Organisation and Management
HBL111 Law in Global Business
HBM110 The Marketing Concept
HIT1025 Introduction to Information Systems
HMB110 Quantitative Analysis A, OR
HMB111 Quantitative Analysis B

Stage 2
HBM220 Market Behaviour (highly recommended as first subject studied in Marketing post-core)
HBM222 Marketing Planning
HBM223 Transnational Marketing
HBM229 Marketing Research

Stage 3
HBM330 Marketing Innovation Management
HBM331 Services Marketing and Management
HBM333 Communications Strategy
HBM341 Business Strategy (capstone subject)
And one of (from Stage 2 and 3):
HBM271 Customer Relationship Management
HBM272 eMarketing
HBM339 Transnational Business Practices

Seven additional subjects must be completed. These subjects 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.
2004 VCE prerequisites: Units 3 and 4 - a study score of at least 25 in English (any).
2003 Final Clearly-In ENTER: 85.20

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
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.
For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

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## DOUBLE DEGREES

**A058 Bachelor of Business / Bachelor of Arts (Italian)**

The Bachelor of Business/Bachelor of Arts (Italian) is a vocationally oriented course 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 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.

This 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. 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 A055 Bachelor of Business 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 subjects 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.

Note: Language subjects are not normally available in the evening.

An optional and additional year of Industry-Based Learning (IBL) is also available.

### Structure

The course comprises thirty-two semester subjects and is designed to enable students to complete the compulsory requirements for any business major together with the full range of Italian subjects in order to complete the requirements of the two degrees.

Students must complete the core subjects of the Business degree (seven subjects) and a major (six subjects) chosen from one of the approved business specialisations (refer to Business specialisations) – a minimum of thirteen business specific subjects, plus eight mandatory Italian language subjects and five supporting cultural subjects and six additional subjects (major, minor and/or electives) which may be selected from subjects offered in the Bachelor of Arts or Bachelor of Business specialisations or other disciplines outside the School of Business by approval. For full details of Business and Arts specialisations pertaining to this course refer to the Bachelor of Business and Bachelor of Arts course entries.

A major consists of six post-core subjects, at least two of which must be at Stage 3 level. A minor consists of four post-core subjects, at least one of which must be at Stage 3 level. An elective is a subject 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 subjects which are not a formal part of this course will be required to seek approval from the School Administration Manager prior to enrolment.

### Stage 3 Subjects–Honours Stream Option

Each semester a limited number of Stage 3 subjects are offered by the School of Business to students as an Honours stream option. These subjects 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 subjects studied to date, an overall credit average and gain approval from the subject convenor.

Students enrolled in Honours stream subjects 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 subjects that can be credited towards the Bachelor of Business/Bachelor of Arts (Italian):

- A minimum of eight subjects must be completed at Swinburne University. This must include completion of half the subjects for all majors and minors.
- At least one Stage 3 subject 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 subject exemptions, studies completed through international exchange, cross-institutional study or study abroad.
- A maximum of twelve subjects from any discipline (e.g. Marketing - ‘HBM’ subject code prefix).
- A maximum of twelve Stage 1 subjects (e.g. HBM110 - Stage 1 subjects have a 1 immediately following the three-letter code).
- A minimum of three Stage 3 subjects must be completed in addition to the mandatory Stage 3 language and cultural subjects (e.g. HBM330 - Stage 3 subjects have a 3 immediately following the three-letter code).
- The subject HAT119 Academic Communication Skills cannot be used for credits towards the double degree.
- A subject can only be counted once as part of a major or minor or as an elective - one subject cannot be counted twice (e.g. the subject HBM222 may be counted towards either a Management or Marketing major, but not both).
- Students are not permitted to enrol in subjects where they have completed another subject that is deemed to be equivalent.
- The subject HBSG200 New Venture Development and Management will not normally be available for students enrolled in the Bachelor of Business.
- HBS000 Industry Placement cannot be used for credit towards the double degree.
- Students will be allowed to study a maximum of thirty-four subjects as part of the double degree.

### Business Majors/Minors

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

## Available as minor only

### Arts Majors/Minors

- Australian Studies
- Cultural Studies
- Electronic Society
- Italian Studies
- Literature
- Media Studies
Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2004 VCE prerequisites: Units 3 and 4 - a study score of at least 25 in English (any). Bonus points will be given for VCE LOTE.
2003 Final Clearly-In ENTER: 83.25
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. Native speakers of Italian are not eligible for admission to this course.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34651F(T)/VP/TI, 34653 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

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

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 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.

This 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. 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 A055 Bachelor of Business entry in this handbook.

Campus
Hawthorn

Career opportunities
Graduates of this double degree enjoy career 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 subjects 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 subjects are not normally available in the evening.

Structure
To complete the requirements of this course students must complete thirty-two subjects comprising thirteen Italian language and supporting cultural subjects, seven business core subjects, an International Business major (six subjects) and an additional six subjects (which may comprise either another major, a minor and two electives or six electives). These six additional subjects may be selected from subjects offered in the Bachelor of Arts or Bachelor of Business specialisations or other disciplines outside the School of Business 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.
A major consists of six post-core subjects at least two of which must be at Stage 3 level. A minor consists of four post-core subjects at least one of which must be at Stage 3 level. An elective is a subject 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 and the A058 Bachelor of Business/ Bachelor of Arts (Italian) course descriptions.

**Semester Abroad**

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.

**Stage 3 Subjects—Honours Stream Option**

Each semester a limited number of Stage 3 subjects are offered by the School of Business to students as an Honours stream option. These subjects 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 subjects studied to date, an overall credit average and gain approval from the subject convenor.

Students enrolled in Honours stream subjects 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 subjects that can be credited towards the Bachelor of Business (International Business)/Bachelor of Arts (Italian):

- A minimum of eight subjects must be completed at Swinburne University. This must include completion of half the subjects for all majors and minors. At least one Stage 3 subject 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 subject exemptions, studies completed through international exchange, cross-institutional study or study abroad.
- A maximum of twelve subjects from any discipline (e.g. Marketing - `HBM` subject code prefix).
- A minimum of eight subjects must be completed at Swinburne University. This must include completion of half the subjects for all majors and minors. At least one Stage 3 subject 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 subject exemptions, studies completed through international exchange, cross-institutional study or study abroad.
- A maximum of twelve subjects from any discipline (e.g. Marketing - `HBM` subject code prefix).
- A maximum of twelve subjects from any discipline (e.g. Marketing - `HBM` subject code prefix).
- A minimum of three Stage 3 subjects must be completed in addition to the mandatory Stage 3 language and cultural subjects (e.g. HBM330 - Stage 3 subjects have a 3 immediately following the three-letter code).
- Unmatched exemptions can only be used as electives and do not fulfil Stage 3 subject course requirements.
- The subject HAT119 Academic Communication Skills cannot be used for credit towards the double degree.
- A subject can only be counted once as part of a major or minor or as an elective - one subject cannot be counted twice (e.g. the subject 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 subjects where they have completed another subject that is deemed to be equivalent.
- The subject HBSS200 New Venture Development and Management will not normally be available for students enrolled in the Bachelor of Business.
- HBI300 Industry Placement cannot be used for credit towards the double degree.
- Students will be allowed to study a maximum of thirty-four subjects as part of the double degree.

**Business Majors/Minors**

- Accounting
- Asian Business
- Business Law
- Economics
- eMarketing
- European Business
- Finance
- Human Resource Management/Organisation Behaviour
- Information Systems
- International Business
- Management
- Manufacturing Management
- Marketing
- # Available as minor only

**Arts Majors/Minors**

- Australian Studies
- Cultural Studies
- Electronic Society
- Italian Studies
- Literature
- Media Studies
- Philosophy & Cultural Inquiry
- Politics
- Psychology
- Sociology

**Business Core Subjects**

The seven business core subjects are:

- **HBC110** Accounting for Success
- **HBE110** Microeconomics
- **HBB110** Organisation and Management
- **HBL111** Law in Global Business
- **HBM110** The Marketing Concept
- **HIT1025** Introduction to Information Systems
- **HMB110** Quantitative Analysis A, OR
- **HMB111** Quantitative Analysis B

**International Business Major**

- **HBS231** Foundations of International Business
- **HBS340** International Trade Strategies
- **HBL331** International Business Law
- At least one of:
  - **HBS341** Asia – Business Context
  - **HBS392** European Union – Business Context
  - **HBS394** The Americas – Business Context
- And remaining subjects from:
  - **HBE335** International Finance
  - **HBS323** International Human Resource Management and Diversity
  - **HBS342** International Investment and Development
  - **HBM223** Transnational Marketing
  - **HBM339** Transnational Business Practices

**Arts - Language Subjects**

**Beginner’s stream**

**Stage 1**

- **HAA181** Italy and Its Language 1
- **HAA182** Italy and Its Language 2

**Stage 2**

- **HAA281** Italian ZK
- **HAA282** Introductory Business Italian 2Y
- **HAA283** Italian Z

**Stage 3**

- **HAA381** Italian 3K
- **HAA387** Advanced Business Italian
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 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.

This 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. 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 A055 Bachelor of Business 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 subjects 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.

**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 subjects are not normally available in the evening.

**Structure**

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

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

A major consists of six post-core subjects, at least two of which must be at Stage 3 level. A minor consists of four post-core subjects, at least one of which must be at Stage 3 level. An elective is a subject 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 subjects which are not a formal part of this course will be required to seek approval from the School Administration Manager prior to enrolment.

**Stage 3 Subjects–Honours Stream Option**

Each semester a limited number of Stage 3 subjects are offered by the School of Business to students as an Honours stream option. These subjects 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 subjects studied to date, an overall credit average and gain approval from the subject convenor.

Students enrolled in Honours stream subjects 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 subjects that can be credited towards the Bachelor of Business/Bachelor of Arts (Japanese):
A minimum of eight subjects must be completed at Swinburne University. This must include completion of half the subjects for all majors and minors. At least one Stage 3 subject 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 subject exemptions, studies completed through international exchange, cross-institutional study or study abroad.

A maximum of twelve subjects from any discipline (e.g. Marketing - ‘HBM’ subject code prefix).

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

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

Unmatched exemptions can only be used as electives and do not fulfil Stage 3 subject course requirements.

The subject HAT119 Academic Communication Skills cannot be used for credits towards the double degree.

A subject can only be counted once as part of a major or minor or as an elective - one subject cannot be counted twice (e.g. the subject HBM222 may be counted towards either a Management or Marketing major, but not both).

Students are not permitted to enrol in subjects where they have completed another subject that is deemed to be equivalent.

The subject HBSG200 New Venture Development and Management will not normally be available for students enrolled in the Bachelor of Business.

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

Business Majors/Minors
- Accounting
- Asian Business#
- Business Law#
- Economics#
- eMarketing#
- European Business
- Finance
- Human Resource Management/Organisation Behaviour
- Information Systems
- International Business
- Management
- Manufacturing Management
- Marketing
- # Available as minor only

Arts Majors/Minors
- Australian Studies
- Cultural Studies
- Electronic Society
- Italian Studies
- Literature
- Media Studies
- Philosophy & Cultural Inquiry
- Politics
- Psychology
- Sociology

Business - Core subjects
The seven business core subjects are:
- HBC110 Accounting for Success
- HBE110 Microeconomics
- HBB110 Organisation and Management
- HBL111 Law in Global Business
- HBM110 The Marketing Concept
- HIT1025 Introduction to Information Systems
- HMB110 Quantitative Analysis A, OR
- HMB111 Quantitative Analysis B

Arts - Language Subjects

Beginners’ stream
Stage 1
- HAJ107 Introductory Japanese 1A
- HAJ108 Written Japanese 1B
- HAJ109 Spoken Japanese 1B

Stage 2
- HAJ215 Intermediate Japanese 2A
- HAJ217 Written Japanese 2B
- HAJ218 Spoken Japanese 2B

Stage 3
- HAJ318 Written Japanese 3A
- HAJ319 Spoken Japanese 3A
- HAJ323 Written Japanese 3B
- HAJ324 Spoken Japanese 3B

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
- HBS341 Asia-Business Context

Recommended Electives
- HAT116 Linguistics
- HAJ302 Work Experience in Japan (subject to availability of placements)
- HBS391 Pacific Rim 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 are advised to transfer to the Advanced stream by enrolling in third year Advanced subjects after completing second year. A credit is the minimum requirement to be able to transfer to the Advanced stream.

Language and business subjects 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.

2004 VCE prerequisites: Units 3 and 4 - a study score of at least 25 in English (any). Bonus points will be given for VCE LOTE.
Note: The requirements of this course should be read in conjunction with the A055 Bachelor of Business and the A058 Bachelor of Business/ Bachelor of Arts (Italian) course descriptions.

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

Semester Abroad

Students in the Bachelor of Business (International Business)/Bachelor of Arts (Japanese) must undertake an approved component of the course overseas. This could be a student exchange, a study tour or work experience.

Stage 3 Subjects–Honours Stream Option

Each semester a limited number of Stage 3 subjects are offered by the School of Business to students as an Honours stream option. These subjects 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 subjects studied to date, an overall credit average and gain approval from the subject convenor.

Students enrolled in Honours stream subjects 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 subjects that can be credited towards the Bachelor of Business (International Business)/Bachelor of Arts (Japanese):

- A minimum of eight subjects must be completed at Swinburne University. This must include completion of half the subjects for all majors and minors. At least one Stage 3 subject 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 subject exemptions, studies completed through international exchange, cross-institutional study or study abroad.
- A maximum of twelve subjects from any discipline (e.g. Marketing - 'HBM' subject code prefix).
- A maximum of twelve Stage 1 subjects (e.g. HBM110 - Stage 1 subjects have a 1 immediately following the three-letter code).
- A minimum of three Stage 3 subjects must be completed in addition to the mandatory Stage 3 language and cultural subjects (e.g. HBM330 - Stage 3 subjects have 3 immediately following the three-letter code).
- Unmatched exemptions can only be used as electives and do not fulfill Stage 3 subject course requirements.
- The subject HAT118 Academic Communication Skills cannot be used for credit towards the double degree.
- A subject can only be counted once as part of a major or minor or as an elective - one subject cannot be counted twice (e.g. the subject 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 subjects where they have completed another subject that is deemed to be equivalent.
- The subject HBSG200 New Venture Development and Management will not normally be available for students enrolled in the Bachelor of Business.
- HBS300 Industry Placement cannot be used for credit towards the double degree.
- Students will be allowed to study a maximum of thirty-four subjects as part of the double degree.

Business Majors/Minors

- Accounting
- Asian Business#
- Business Law#
- Economics#
- eMarketing#
- European Business

A major consists of six post-core subjects at least two of which must be at Stage 3 level. A minor consists of four post-core subjects at least one of which must be at Stage 3 level. An elective is a subject studied that is not part of the business core, a major or minor.
- Finance
- Human Resource Management/Organisation Behaviour
- Information Systems
- International Business
- Management
- Manufacturing Management
- Marketing

# Available as minor only

## Arts Majors/Minors
- Australian Studies
- Cultural Studies
- Electronic Society
- Italian Studies
- Literature
- Media Studies
- Philosophy & Cultural Inquiry
- Politics
- Psychology
- Sociology

## Business Core Subjects
The seven business core subjects are:

<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>Microeconomics</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>HIT1025</td>
<td>Introduction to 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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>HB231</td>
<td>Foundations of International Business</td>
</tr>
<tr>
<td>HB340</td>
<td>International Trade Strategies</td>
</tr>
<tr>
<td>HBL331</td>
<td>International Business Law</td>
</tr>
</tbody>
</table>

At least one of:

- HBJ341 Asia – Business Context
- HBJ391 European Union – Business Context
- HBJ394 The Americas – Business Context

And remaining subjects from:

- HBJ335 International Finance
- HBJ323 International Human Resource Management and Diversity
- HBJ342 International Investment and Development
- HBJ323 Transnational Marketing
- HBJ339 Transnational Business Practices

## Arts - Language Subjects

### Beginners' stream

**Stage 1**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAJ107</td>
<td>Introductory Japanese 1A</td>
</tr>
<tr>
<td>HAJ108</td>
<td>Written Japanese 1B</td>
</tr>
<tr>
<td>HAJ109</td>
<td>Spoken Japanese 1B</td>
</tr>
</tbody>
</table>

**Stage 2**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAJ215</td>
<td>Intermediate Japanese 2A</td>
</tr>
<tr>
<td>HAJ217</td>
<td>Written Japanese 2B</td>
</tr>
<tr>
<td>HAJ218</td>
<td>Spoken Japanese 2B</td>
</tr>
</tbody>
</table>

**Stage 3**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAJ319</td>
<td>Spoken Japanese 3A</td>
</tr>
<tr>
<td>HAJ323</td>
<td>Written Japanese 3B</td>
</tr>
<tr>
<td>HAJ324</td>
<td>Spoken Japanese 3B</td>
</tr>
</tbody>
</table>

### 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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAJ102</td>
<td>Introduction to Japan - A Cultural Overview</td>
</tr>
<tr>
<td>HAJ202</td>
<td>Communication in Japanese</td>
</tr>
<tr>
<td>HBJ391</td>
<td>Pacific Rim Business Study Tour</td>
</tr>
</tbody>
</table>

### Recommended electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAT116</td>
<td>Linguistics</td>
</tr>
<tr>
<td>HAJ302</td>
<td>Work Experience in Japan (subject to availability of placements)</td>
</tr>
<tr>
<td>HBJ391</td>
<td>Pacific Rim Business Study Tour</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.

- 2004 VCE prerequisites: Units 3 and 4 - a study score of at least 25 in English (any).
- Bonus points will be given for VCE LOTE.

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

### Application procedure

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

- 2003 Round 1 Clearly-In ENTER: 83.20
- For further information, visit the VTAC website at: www.vtac.edu.au

### Honours Year

**A063 Bachelor of Business (Honours)**

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 of professional employment in which conceptual, organisational and research skills are in demand.

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 will have enhanced employment opportunities in their chosen area.

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

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 subject (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 subject is compulsory for all Bachelor of Business (Honours) students and no prerequisite is necessary.

Advanced reading component
The discipline specific subject (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 10,000 and 15,000 words. The structure of the dissertation will be consistent with the proposal development in the Advanced Reading subject, 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) 85%-100%
- Upper Second Class Honours (H2A) 75%-84%
- Lower Second Class Honours (H2B) 65%-74%
- Third Class Honours (H3) 50%-64%

Course subjects
- HBQ415 Research Methodology (20 credit points)
- HBx410 Honours Dissertation (60 credit points)
- HBx411 Advanced Reading Unit (20 credit points)

‘x’ represents the specific code for each area of study as listed above.

Accounting
- HBC410 Accounting Honours Dissertation
- HBC411 Accounting Advanced Reading Unit

Finance
- HBF410 Finance Honours Dissertation
- HBF411 Finance Advanced Reading Unit

Human Resource Management/Organisation Behaviour
- HBH411 Human Resource Management/Organisation Behaviour Advanced Reading Unit

Information Systems
- HBT410 Information Systems Honours Dissertation
- HBT411 Information Systems Advanced Reading Unit

International Business
- HBI410 International Business Honours Dissertation
- HBI411 International Business Advanced Reading Unit

Management
- HBMG410 Management Honours Dissertation
- HBMG411 Management Advanced Reading Unit

Manufacturing Management
- HBP410 Manufacturing Honours Dissertation
- HBP411 Manufacturing Advanced Reading Unit

Marketing
- HBM410 Marketing Honours Dissertation
- HBM411 Marketing Advanced Reading Unit

Entry requirements
To be eligible for admission into the Bachelor of Business (Honours) course, a student must have satisfied the requirements of an undergraduate pass degree with a business major (completed within the last five years), from a university approved by Swinburne. The student must have achieved an average level of attainment of a credit (C) or better in an appropriate undergraduate course (or range of disciplines) considered by the School of Business Honours Committee to be acceptable for entry into the Bachelor of Business (Honours) course.

Applicants for the language component must also have achieved a credit average in language studies. Shortlisted applicants will be required to attend an interview as part of the selection process.

Application procedure
Application forms are available from the School of Business Swinburne University of Technology | Undergraduate Course Handbook 2004
School of Engineering and Science

Swinburne's School of Engineering and Science provides undergraduate engineering courses related to Product Design, Robotics and Mechatronics, Mechanical Engineering and Civil/Infrastructure Engineering. Undergraduate science courses focus on Biotechnology, Biochemistry and Microbiology, with Chemistry as a core supporting science. Most programs are available for study as Double Degrees. The Bachelor of Health Science in Environmental Health Management represents a course that is unique in Victorian universities. Technology courses are provided in Aviation, and Air Transportation Management.

A major feature of the undergraduate programs is the integration of an optional year of Industry-Based Learning (IBL) within the curriculum. After four or five semesters of academic study on campus, the School organises for students to undertake relevant industry placements, where students learn about the commercial and industrial context for their academic studies. Students are paid a salary during this period of employment. After IBL, students return to campus to complete their academic studies. This feature of the School's courses makes study relevant for students and produces graduates who are ready to add value in the business environment.

The involvement of the academic staff in maintaining the IBL program, together with the use of industry advisory committees for all courses, means that the School's courses are highly aligned with current professional practice in the real world. Consequently they are also an excellent springboard for high-achievers to go onto Masters and PhD Degrees.

The School provides a friendly learning environment in which postgraduate students mix with undergraduate students, and in which extensive use is made of multimedia teaching resources. The emphasis is on student-centred learning in which students take control and responsibility for their own progress.

Further information
Contact the School of Engineering & Science on +61 3 9214 8372
Fax: +61 3 9214 8284
Email: engsci@swin.edu.au
Website: www.hed.swin.edu.au/ees/

C050 Bachelor of Engineering (Civil Engineering)

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.
- To provide students with the technical skills required, and to give them an appreciation for the history of engineering and their chosen discipline.
- To 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

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
Graduate membership of The Institution of Engineers, Australia.

Course duration
Four years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available. Students who omit the IBL year must undertake at least twelve weeks relevant industry experience in order to graduate.

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.

Stage 1
Semester 1
HEF1000 Professional Engineering
HES1125 Mechanics of Structures
HET124 Energy and Motion
HMS111 Engineering Mathematics 1

Semester 2
HES1230 Materials and Processes
HES1105 Civil Engineering Project
HET182 Electronic Systems
HMS112 Engineering Maths 2

Stage 2
Semester 1
HES2146 Computer Aided Engineering
HES2120 Structural Mechanics
HES2131 Topographical Engineering
HMS215 Engineering Maths 3C

Semester 2
HES2136 Road Engineering
HES2125 Design of Concrete Structures
HES2155 Geomechanics
HES2340 Fluid Mechanics 1

Stage 3
Semester 1
HES3380 Engineering Management 1
HES3111 Urban Civil Design
HES3121 Design of Steel Structures
HES3150 Geotechnical Engineering

Semester 2
HES3300 Industry-Based Learning

Stage 4
Semester 1
HES4300 Industry-Based Learning

Semester 2
HES4126 Structural Engineering
HES4146 Water & Environmental Engineering
HES5175 Cost Engineering
HES4136 Transport Engineering

Stage 5
Semester 1
HES5190 Infrastructure Design Project
HES5191 Infrastructure Deterioration Assessment
HES5380 Engineering Management 2

XXXXXX Elective
Swinburne University of Technology | Undergraduate Course Handbook 2004

**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.

**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**

Graduate membership of The Institution of Engineers, Australia.

**Course duration**

Four years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available. Students who omit the IBL year must undertake at least twelve weeks relevant industry experience in order to graduate.

**Entry requirements**

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

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), a study score of at least 20 in Mathematical Methods, and in one of Biology, Chemistry, Information Technology: Information Systems, Physics, Psychology, or Specialist Mathematics.

2003 Final Clearly-In ENTER: 80.30

**Application procedure**

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34691 (HECS), 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.swinburne.edu.au/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 8467 or visit the website at: www.swinburne.edu.au/isu

**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.

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.

**Stage 1**

 Semester 1

- HES1300 Robotics & Mechatronics Project 1
- HES2330 Materials & Processes
- HET124 Energy and Motion
- HMS111 Engineering Maths 1

 Semester 2

- HES1125 Mechanics of Structures
- HES1305 Robotics & Mechatronics Project 2
- HET182 Electronic Systems
- HMS112 Engineering Maths 2

**Stage 2**

 Semester 1

- HMS211 Engineering Mathematics 3A
- HMS230 Thermodynamics 1
- HES2120 Structural Mechanics
- HES2146 Computer Aided Engineering

 Semester 2

- HMS2230 Engineering Materials
- HMS2340 Fluid Mechanics 1
- HES2310 Machine Dynamics 1
- HMS2280 Manufacturing Technology 1

**Stage 3**

 Semester 1

- HES3350 Machine Design
- HES3310 Control Engineering
- HES3380 Human Factors
- HES3380 Engineering Management 1

 Semester 2

- HES4300 Industry-Based Learning

**Stage 4**

 Semester 1

- HES3300 Industry-Based Learning

 Semester 2

- HES4330 Thermodynamics 2
- HES3320 Solid Mechanics
- HES4350 Mechanical Systems Design
- HMS212 Engineering Mathematics 4A

**Stage 5**

 Semester 1

- HES5380 Engineering Management 2
- HES5310 Machine Dynamics 2
- HES5340 Fluid Mechanics 2
- XXXX Approved elective

 Semester 2

- HES5350 Product Design
Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), a study score of at least 20 in Mathematical Methods, and in one of Biology, Chemistry, Information Technology: Information Systems, Physics, Psychology, or Specialist Mathematics.

2003 Final Clearly-In ENTER: 80.50

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34611 (HECS), 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.swinburne.edu.au/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 8847 or visit the website at: www.swinburne.edu.au/isu

PDE50 Bachelor of Engineering (Product Design Engineering)

Product Design engineering is a combination of two traditionally separate fields each with its own strength: engineering with its scientific material and manufacturing knowledge and industrial design with its human-centred approach, have been brought together to produce a new graduate who will develop competitive products in both quality and design for Australian industry. The subjects studied during the course will be equally shared by the School of Engineering and Science, and the National Institute of Design. These will have a focus on creative design, engineering science, material and manufacturing process selection, project management and innovation.

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 core course which covers the required disciplines involved in creative design, in parallel to 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
Hawthorn and Prahran

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 The Institution of Engineers, Australia and The Design Institute of Australia

Course duration
Four years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available. Students who omit the IBL year must undertake at least twelve weeks relevant industry experience in order to graduate.

Structure
Each year of study has two semesters. Normally, four subjects are studied in each semester of 12.5 credit points, however, some of the Product Design subjects may be of 25 credit points. The total number per semester is 50 credit points. Eight semesters of academic study plus one year of Industry-Based Learning is required to complete this course.

Stage 1
Semester 1
HDD003 Product Design Modelling
HDD004 Product Design Comm 1
HET124 Energy & Motion
HMS111P Engineering Mathematics 1
Semester 2
HDD005 Product Design Comm 2
HES1125 Mechanics of Structures
HET182 Electronic Systems
HMS112P Engineering Mathematics 2

Stage 2
Semester 1
HDPD211 Product Design 3
HES2120 Structural Mechanics
HES1230 Materials and Processes
Semester 2
HDPD221 Product Design 4
HES2310 Machine Dynamics 1
HES2290 Manufacturing Technology 1
HES2230 Engineering Materials

Stage 3
Semester 1
HDPD311 Product Design 5
HES3334 Thermofluid Systems
HES3380 Engineering Management 2
HES3350 Machine Design
Semester 2
HDPD321 Product Design 6
HES4250 Design for Manufacture
HES4280 Manufacturing Technology 2

Stage 4
Semester 1
HES3300 Industry-Based Learning (IBL)
Semester 2
HES4300 Industry-Based Learning (IBL)

Stage 5
Semester 1
HDPD511 Product Design 7
HDPD512 Professional Project
HES5210 Industrial Systems
XXXXX Approved elective
HDPD521  Product Design 8
HDPD522  Professional Project
HES5885  Engineering Management 3
XXXXX  Approved elective

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), and a study score of at least 20 in Mathematical Methods, and in one of Biology, Chemistry, Information Technology: Information Systems, Physics, Psychology or Specialist Mathematics.
All applicants must participate in a pre-selection program and, if selected, attend an interview in December. For further details, refer to the VTAC guide.
2003 ENTER: Individual offer.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34121(HESCS), 34123 (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/hed/scholarships/vcschol.htm
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

R050  Bachelor of Engineering (Robotics and Mechatronics)

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 bionics 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.

Campus
Hawthorn

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
Graduate membership of The Institution of Engineers, Australia.

Course duration
Four years full-time. An optional and additional year of Industry-Based Learning (IBL) may also be available. Students who omit the IBL year must undertake at least twelve weeks relevant industry experience in order to graduate.

Course subjects

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Semester 1</th>
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<tbody>
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<tr>
<td>HES1230</td>
<td>Materials &amp; Processes</td>
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<tr>
<td>HET124</td>
<td>Energy and Motion</td>
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<td>HMS111</td>
<td>Engineering Mathematics 1</td>
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<td>HES1305</td>
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<td>HES1125</td>
<td>Mechanics of Structures</td>
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<td>HET182</td>
<td>Electronic Systems</td>
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<td>HMS211</td>
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<td>HES2120</td>
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<td>HET210</td>
<td>Electronics</td>
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<td>HIT1051</td>
<td>Software Development 1</td>
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<td>HET225</td>
<td>Electrical Machines</td>
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<td>HET232</td>
<td>Embedded Microcontrollers</td>
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<td>HET312</td>
<td>Control and Automation</td>
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<td>HES3360</td>
<td>Human Factors</td>
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<td>HET343</td>
<td>Mechatronics</td>
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<td>HES4300</td>
<td>Industry-Based Learning</td>
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<td>HET489</td>
<td>Robotic Control</td>
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<td>HET293</td>
<td>Digital Signal &amp; Image Processing</td>
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<td>HIT1031</td>
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<td>HES5290</td>
<td>Advanced Technologies</td>
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<td>Engineering Management 2</td>
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<td>HET567</td>
<td>Design and Development Project 2</td>
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<tr>
<td>HES5250</td>
<td>Robot System Design</td>
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<td>HES5385</td>
<td>Engineering Management 3</td>
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Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2004 VCE prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), and a study score of at least 20 in Mathematical Methods, and in one of Biology,
Chemistry, Information Technology, Information Systems, Physics, Psychology or Specialist Mathematics.

2003 Final Clearly-In ENTER: 84.85

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34581 (HECS), 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.swinburne.edu.au/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

H069 Bachelor of Health Science (Public and Environmental Health)

This course is an accredited course in Victoria for students seeking a career as an environmental health officer. Students study science, engineering and humanities subjects and develop a wide range of biological, technological, legal and administrative skills including planning, designing and implementing programs in community health, environmental protection, food safety, risk analysis and occupational health and safety.

Food safety, disease prevention, environmental hazards management, noise assessment, water quality and health promotion are all environmental health issues affecting community health. Environmental health management is concerned with protecting the environment and the health of people living in it and involves monitoring, assessment, correcting, controlling and education as appropriate.

Aims & Objectives

The course has the following objectives:

- To produce a professional graduate who is able to communicate the role of environmental health management to the community and deploy environmental health principles in adding value to community health and quality of life.
- To develop in students a mastery of the basic theoretical and practical principles of 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 imbue 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 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 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 environmental health management.
- To meet the accreditation requirements for environmental health undergraduate degree programs set by the Australian Institute of Environmental Health.

Career opportunities

When it comes to tracking down a food poisoning outbreak, monitoring swimming pool standards, air or noise pollution, or resolving public health issues after a natural disaster, there is one person who can be relied upon to help – an environmental health officer. The main employers of environmental health officers are commonwealth, state and local government authorities and increasingly, food and waste management industries and private consultancies. 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).

Course subjects

Stage 1

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
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<tbody>
<tr>
<td>HES1700 Environmental Health Management 1</td>
<td>HES2740 Environmental Health Technology</td>
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<tr>
<td>HES1610 Human Biology</td>
<td>HES2636 Microbes in the Environment</td>
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<td>HAS100 Sociology 1 (Introductory Sociology)</td>
<td>HES2705 Water Science</td>
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<tr>
<td>HES1500E Introduction to Chemistry</td>
<td>HES2725 Food Safety 1</td>
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<td>HES1616 Concepts of Biotechnology</td>
<td>HES2735 Communicable Disease Control</td>
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<td>HES1715 Environmental Measurement</td>
<td>HES2705 Water Science</td>
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<td>HMS102 Introduction to Statistics</td>
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Stage 2

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<tr>
<td>HBSH400 Administration and Management</td>
<td>HES3700 Industry-Based Learning</td>
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<tr>
<td>HES2636 Microbes in the Environment</td>
<td>HES3705 Industry-Based Learning</td>
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<td>HES3715 Environmental Health Management</td>
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<tr>
<td>HES2725 Food Safety 1</td>
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<td>HES2735 Communicable Disease Control</td>
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<td>HES2705 Water Science</td>
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Stage 3

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<tr>
<td>HES4705 Research Project</td>
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Stage 4

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<tr>
<td>HES4725 Occupational Health &amp; Safety</td>
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<tr>
<td>HES4715 Health Planning and Promotion</td>
</tr>
<tr>
<td>HES4705 Research Project</td>
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</tbody>
</table>

* This subject may be replaced by a restricted elective approved by course coordinator.
Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2004 VCE Prerequisites: Units 3 and 4 - a study score of at least 25 in English (any), in one of Chemistry, Physics or Biology, and in one of Mathematical Methods or Specialist Mathematics or a study score of at least 30 in Further Mathematics.
2003 ENTER: Individual offer

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34051 (HECS), 34063 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8847 or visit the website at: www.swinburne.edu.au/isu

Z052 Bachelor of Science (Biochemistry)
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 psychology.
The course examines how biochemical knowledge can be applied to a range of industries and medical investigations, and especially emphasises practical skills ranging from the culturing of micro-organisms through to the investigation of complex molecules such as enzymes and DNA. As well as scientific skills, the course develops general skills that are important in the day-to-day operations of the professional biochemist, including computing, team-working, management, problem-solving, knowledge of legal, safety and professional obligations, and communication skills. The course also includes studies of the chemistry that underlies biochemistry and the role of chemistry in society, industry and the environment.

Campus
Hawthorn

Career opportunities
Biochemists work in many areas, including medical research, environmental research, clinical biochemistry, biotechnology, microbiology, food production, agricultural biochemistry, beverage production, fermentation technology, research, clinical biochemistry, biotechnology, microbiology, food production, agricultural biochemistry, beverage production, fermentation technology, research, clinical biochemistry, biotechnology, microbiology, food production, agricultural biochemistry, beverage production, fermentation technology, research, clinical biochemistry, biotechnology, microbiology, food production, agricultural biochemistry, beverage production, fermentation technology, research, clinical biochemistry, biotechnology, microbiology, food production, agricultural biochemistry, beverage production, fermentation technology, research, clinical biochemistry, biotechnology, microbiology, food production, agricultural biochemistry, beverage production, fermentation technology, research, clinical biochemistry, biotechnology, microbiology, food production, agricultural biochemistry, beverage production, fermentation technology, research, clinical biochemistry, biotechnology, microbiology, food production, agricultural biochemistry, beverage production, fermentation technology, research, clinical biochemistry, biotechnology, microbiology, food production, agricultural biochemistry, beverage production, fermentation technology, research, clinical biochemistry, biotechnology, microbiology, food production, agricultural biochemistry, beverage production, fermentation technology, research, clinical biochemistry, biotechnology, microbiology, food production, agricultural biochemistry, beverage production, fermentation technology, research, clinical biochemistry, biotechnology, microbiology, food production, agricultural biochemistry, beverage production, fermentation technology, research, clinical biochemistry, biotechnology, microbiology, food production.

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.

Course subjects

Semester 1

<table>
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<tr>
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<tbody>
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<tr>
<td>HMS101</td>
<td>Foundation Mathematics</td>
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<tr>
<td>HIT2079</td>
<td>Computing for Chemists</td>
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<tr>
<td>HES1610</td>
<td>Human Biology</td>
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Semester 2

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<td>HES1525</td>
<td>Chemistry 2</td>
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<td>HES1555</td>
<td>Consumer Science</td>
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<td>HES1616</td>
<td>Concepts of Biotechnology</td>
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<td>Introduction to Statistics</td>
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Semester 3

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<td>HES2510</td>
<td>Investigative Chemistry Prac 1</td>
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<td>HES2821</td>
<td>Introduction to Biochemistry</td>
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<td>HES2831</td>
<td>The Microbial World</td>
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Semester 4

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<td>HES2515</td>
<td>Investigative Chemistry Prac 2</td>
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<td>HES2826</td>
<td>Biochemistry of Genes and Proteins</td>
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<td>Microbes in the Environment</td>
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Semester 5

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Semester 6

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Semester 7

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<td>Practical &amp; Professional Skills 5</td>
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<td>HES4621</td>
<td>Advanced Biochemistry</td>
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<td>HES4641</td>
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Semester 8

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Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in one of Biology or Chemistry and in one of Mathematical Methods or Specialist Mathematics and English (any).
2003 Final Clearly-In ENTER: 82.55

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34241 (HECS), 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.swinburne.edu.au/hest/scholarships/vcschol.htm
International students should contact the International Student Unit on +61 3 9214 8847 or visit the website at: www.swinburne.edu.au/isu

ESB055 Bachelor of Science (Biotechnology)
This course equips graduates for careers in biochemistry and biotechnology related to the medical, health, agricultural and environmental industries. As sciences that underpin biotechnology, it provides in-depth studies of biochemistry, microbiology and molecular biology and the application of these sciences in biotechnology. The course provides flexible options that allow students within the course to take out major studies in chemistry, computer science, business, or media and communications.

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 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 biochemistry and biotechnology related to the medical, health, agricultural 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 subjects are selected in the elective streams.

Course duration
Three years full-time plus an optional and additional year of Industry-Based Learning.

Structure
The program involves four equally-weighted subjects per semester over three 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 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 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

Up until the end of second year, students with sufficiently high grades in the BSc single degree program will have the opportunity to transfer into one of the double degree programs. Later year transfers will not be feasible as they would prevent completion of the courses within the normal period of candidature.

Course subjects

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
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<td>HIT2079</td>
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<td>HES1616</td>
<td>Concepts of Biotechnology</td>
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<td></td>
<td>HES1555</td>
<td>Consumer Science</td>
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<td>HES1525</td>
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<td>HES1626</td>
<td>Prof Skills for Biotechnologists</td>
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<td>HES2621</td>
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<td>HES2631</td>
<td>The Microbial World</td>
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<td>HES2510</td>
<td>Investigative Chemistry Prac 1</td>
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<td></td>
<td>HES2540</td>
<td>Forensic &amp; Analytical Science</td>
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<td>Semester 4</td>
<td>HES2626</td>
<td>Biochemistry of Genes and Proteins</td>
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<td>HES2636</td>
<td>Microbes in the Environment</td>
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<td>HES2520</td>
<td>Chemistry 3</td>
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</table>

HE52515 | Investigative Chemistry Prac 2
Semester 5
HES5600 | Industry-Based Learning
Semester 6
HES5605 | Industry-Based Learning
Semester 7
HES4621 | Advanced Biochemistry
HES4641 | Practical Biochemistry
HES4520 | Advanced Chemistry 1
HES4510 | Practical and Professional Skills
Semester 8
HES4626 | Biotechnology
HES4646 | Biotechnology Research Project
HES4525 | Advanced Chemistry 2
HES4515 | Project

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

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in one of Biology or Chemistry and in one of Mathematical Methods or Specialist Mathematics and English (any).

2003 Final Clearly-In ENTER: 82.55

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34241 (HECS), 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.swinburne.edu.au/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

Z049 Bachelor of Science (Psychology/Biochemistry)

This course covers both psychology and biochemical structures and processes that underpin and influence human behaviour. Special topics deal with neurological processes and biochemistry of the brain. Psychology studies emphasise vocational skills and knowledge relevant to applied fields. Biochemistry is the study of the structures and processes of living things based on the principles of chemistry and biology. An honours year is also available.

Aims & Objectives

• 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
Medical and biomolecular research, neurological research, community health services, clinics and institutions involved in the assessment and management of persons with neurological problems, clinical psychology, sports psychology.

Professional recognition
The psychology major is accredited by the Australian Psychological Society (APS).

Course duration
Three years full-time plus an optional and additional year of Industry-Based Learning.

Course subjects

**Stage 1**

**Semester 1**
- HES1500 Introduction to Chemistry
- HMA103 Statistics & Research Methods A
- HAY100 Psychology
- HES1610 Human Biology

**Semester 2**
- HES1525 Chemistry 2
- HES1555 Consumer Science
- HAY101 Psychology
- HES1616 Concepts of Biotechnology

**Stage 2**

**Semester 1**
- HAY206 Development Psychology
- HMA278 Design and Measurement 2
- HES2621 Introduction to Biochemistry
- HES2631 The Microbial World

**Semester 2**
- HAY205 Cognition & Human Performance
- HMA279 Design and Measurement 3
- HES2626 Biochemistry of Genes & Proteins
- HES2515 Practical & Prof Skills

**Stage 3**

**Semester 1**
- HES3500 Industry-Based Learning (IBL)

**Semester 2**
- HES3505 Industry-Based Learning (IBL)

**Stage 4**

**Semester 1**
- HAY308 Psychology of Personality
- HAY309 Psychology Measurement
- HES4621 Advanced Biochemistry
- HES4641 Practical Biochemistry

**Semester 2**
- HAY307 Social Psychology
- HES4626 Biotechnology
- HES4646 Biotechnology Research Project
- HAY321 Abnormal Psychology

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

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), in one of Chemistry or Biology, and in one of Mathematical Methods or Specialist Mathematics, or a study score of at least 30 in Further Mathematics.

2003 Final Clearly-In ENTER: 85.35

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34161 (HECS), 34163 (Int. Fee)

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

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

**M056 Bachelor of Technology (Air Transportation Management)**

This Air Transportation Management course provides the necessary preparation for non-flying professional careers in the air transportation industry.

**Campus**
Hawthorn

**Career opportunities**
This 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 plus an optional six months to one year Industry-Based Learning (IBL).

**Course subjects**

**Year 1**

**Semester 1**
- HES1920 General Flying Progress Theory
- HET124 Energy & Motion
- HMS141 Aviation Mathematics
- HES1910 Human Factors & Communication

**Semester 2**
- HES2925 Air Transport Pilot Licence 1
- HES1935 Internal Combustion & Gas Turbine Engines
- HES1945 Aircraft Electrics & Avionics
- HES1910 Human Factors & Communication

**Year 2**

**Semester 1**
- HES2905 Air Transport Pilot Licence 2
- HES1935 Internal Combustion & Gas Turbine Engines
- HES1945 Aircraft Electrics & Avionics
- HES1910 Human Factors & Communication

**Semester 2**
- HES6721 Risk Management Principles
- HES2990 Airport Planning & Management
- HES2940 Aircraft Aerodynamics & Performance
- HES2930 Aircraft Structures
- HES2910 Human Factors & Performance

**Year 3**

**Semester 1**
- HES6721 Risk Management Principles
- HES2990 Airport Planning & Management
- HES2940 Aircraft Aerodynamics & Performance
- HES2930 Aircraft Structures
- HES2910 Human Factors & Performance

- HES3963 Non-Flying Industry-Based Learning
Course subjects

Year 1

Semester 1
- HES1900 General Flying Progress Theory
- HET124 Energy & Motion
- HMS141 Aviation Mathematics
- HES1910 Human Factors & Communication

Semester 2
- HES1905 Commercial Pilot Licence 1
- HES1935 Internal Combustion & Gas Turbine Engines
- HES1945 Aircraft Electrics & Avionics
- HES1915 Occupational Health & Safety

Year 2

Semester 1
- HES2960 Commercial Pilot Licence 2
- HES2940 Aircraft Aerodynamics & Performance
- HES2930 Aircraft Structures
- HES2910 Human Factors & Performance

Semester 2
- HES2905 Air Transport Pilot Licence 1
- HES2945 Aircraft Design & Operations
- HES2935 Aircraft Maintenance
- HES2985 Aviation Business Management

Year 3

Semester 1
- HES4900 Air Transport Pilot Licence 2
- HES4990 Aviation Law
- HES4980 Aviation Project
- HES4980 Aviation Facilities Management & Contemporary Issues

Semester 2
- HES4905 Air Transport Pilot Licence 3
- HES4985 Airspace Management & Air Traffic Services
- HES4915 Crew Resource Management & Instructional Techniques
- XXXXX Elective

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

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), and a study score of at least 20 in Mathematical Methods, and one of Biology, Chemistry, Physics, Specialist Mathematics, Information Technology: Information Systems, or Psychology.

2003 Final Clearly-In ENTER: 80.40

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34421 (HECS), 34423 (Int. Fee)

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

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

M055 Bachelor of Technology (Aviation)
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).

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 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.

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.
DOUBLE DEGREES

ECB050  Bachelor of Engineering (Civil Engineering) /Bachelor of Business

This double degree combines engineering and business subjects, and is designed to increase student knowledge, skills and understanding of civil engineering principles and a fundamental knowledge of business studies.

Campus
Hawthorn

Career opportunities
Refer to entries under Bachelor of Engineering (Civil) and Bachelor of Business.

Professional recognition
Graduate membership of The Institution 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

Course duration
Five years full-time, plus an optional year of Industry Based Learning (IBL) may be available. 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.

Note: Students who omit the IBL year must undertake at least twelve weeks relevant industry experience in order to graduate.

Structure
The program involves four equally-weighted subjects per semester over five years, plus an 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 final year.

Students should refer to www.hed.swin.edu.au/ses/courses/rules.doc for help with the rules of the Business component of the Double Degree.

Year 1
Semester 1
HEF1000  Professional Engineering
HET124  Energy & Motion
HES1125  Mechanics of Structures
HMS111  Engineering Maths 1

Semester 2
HES1105  Civil Engineering Project
HES1230  Materials & Processes
HET182  Electronic Systems
HMS112  Engineering Maths 2

Year 2
Semester 1
HES2131  Topographical Engineering
HES2146  Computer Aided Engineering
HES2120  Structural Mechanics 1
HMS215  Engineering Maths 3C

Semester 2
HES2155  Geomechanics
HES2136  Road Engineering
HES2340  Fluid Mechanics 1

Year 3
Semester 1
HES3300  Industry-Based Learning

Semester 2
HES4300  Industry-Based Learning

Year 4
Semester 1
HES3150  Geotechnical Engineering
HES3111  Urban Civil Design
HES3121  Design of Steel Structures
HBB110  Organisations & Management

Semester 2
HES4126  Structural Engineering
HES4146  Water & Environmental Engineering
HES4136  Transport Engineering
HBC110  Accounting for Success

Year 5
Semester 1
HESS190  Infrastructure Design Project
HESS191  Infrastructure Deterioration Assessment
HBE110  Microeconomics
HBM110  The Marketing Concept

Semester 2
HESS195  Infrastructure Mgmt Project
HESS106  Research Project
HBL111  Law in Global Business
XXXXXX  1st subject of Business Major

Year 6
Semester 1
XXXXXX  2nd subject of Business Major
XXXXXX  3rd subject of Business Major
XXXXXX  4th subject of Business Major
XXXXXX  Elective Business subject

Semester 2
XXXXXX  5th subject of Business Major
XXXXXX  6th subject of Business Major
XXXXXX  Elective Business subject
XXXXXX  Elective Business subject

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

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English [any], a study score of at least 20 in Mathematical Methods, and in one of Biology, Chemistry, Information Technology; Information Systems, Physics, Psychology, or Specialist Mathematics.

2003 Final Clearly-In ENTER: 80.30

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34691 (HECS), 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.swinburne.edu.au/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 9847 or visit the website at: www.swinburne.edu.au/isu
**EMB050  Bachelor of Engineering (Mechanical Engineering) / Bachelor of Business**

This double degree combines engineering and business subjects, and is designed to increase student knowledge, skills and understanding of engineering principles and a fundamental knowledge of business studies.

**Campus**
- Hawthorn

**Career opportunities**
Graduates of this double degree course may select paths from either Engineering or Business, or both discipline areas. Graduates will have an advantage in the market place compared to those with single discipline degrees.

**Professional recognition**
Graduate membership of The Institution 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 Marketing Institute (AMI)
- Institute of Corporate Managers, Secretaries and Administrators

**Course duration**
Five years full-time, plus an optional and additional year of Industry-Based Learning may be available. Students who omit the IBL year must undertake at least twelve weeks relevant industry experience in order to graduate.

**Structure**
The program involves four equally-weighted subjects 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 final year.

Students should refer to www.hed.swin.edu.au/ses/courses/rules.doc for help with the rules of the Business component of the Double Degree.

**Year 1**

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<tr>
<th>Semester 1</th>
<th>Semester 2</th>
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<tr>
<td>HES1300</td>
<td>HES1305</td>
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<tr>
<td>Robotics &amp; Mechatronics Project 1</td>
<td>Robotics &amp; Mechatronics Project 2</td>
</tr>
<tr>
<td>HET124</td>
<td>HES1125</td>
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<tr>
<td>Energy &amp; Motion</td>
<td>Mechanics of Structures</td>
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<tr>
<td>HES1230</td>
<td>HET182</td>
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<tr>
<td>Materials &amp; Processes</td>
<td>Electronic Systems</td>
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<tr>
<td>HMS111</td>
<td>HMS112</td>
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<tr>
<td>Engineering Maths 1</td>
<td>Engineering Maths 2</td>
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**Year 2**

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<tr>
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<td>Engineering Maths 3A</td>
<td>Machine Dynamics 1</td>
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<td>HES2146</td>
<td>HES2340</td>
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<td>Computer Aided Engineering</td>
<td>Fluid Mechanics 1</td>
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<td>Thermodynamics 1</td>
<td>Manufacturing Technology 1</td>
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<td>Structural Mechanics 1</td>
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**Year 3**

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<td>Machine Design</td>
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<td>Human Factors</td>
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<td>HES4330</td>
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<tr>
<td>Control Engineering</td>
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<td>HBH110</td>
<td>HBC110</td>
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<td>Organisations &amp; Management</td>
<td>Accounting for Success</td>
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**Year 4**

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**Year 5**

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<td>Microeconomics</td>
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**Year 6**

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<tr>
<td>4th subject of Business Major</td>
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<tr>
<td>Elective Business subject (2)</td>
<td>Elective Business subject (3)</td>
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**Entry requirements**
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), a study score of at least 20 in Mathematical Methods, and in one of Biology, Chemistry, Information Technology: Information Systems, Physics, Psychology, or Specialist Mathematics.

2003 Final Clearly-In ENTER: 80.50

**Application procedure**
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34611 (HECS), 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.swinburne.edu.au/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu
ERCS050 Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science & Software Engineering)

There is clear synergy between the Bachelor of Engineering (Robotics and Mechatronics) and Bachelor of Science (Computer Science & Software Engineering) courses which, when combined, result in a homogeneous and focused course. Graduates will possess a combination of skills that will allow them to make a valuable contribution to society.

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 are 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.

Campus
Hawthorn

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
Graduate membership of The Institution 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 and additional year of Industry-Based Learning may be available. Students who omit the IBL year must undertake at least twelve weeks relevant industry experience in order to graduate.

Structure
The first year of the program focuses mainly on the basic engineering sciences, mathematics, electronics and computing; subjects which form the foundation of the disciplines of Robotics & Mechatronics and Computer Science and Software Engineering. A unique feature of the first year program is the incorporation of the Robotics & Mechatronics subject which is undertaken in project mode. This subject is designed to stimulate student interest and provide an understanding of the elements that make up the disciplines of Robotics & Mechatronics and Computer Science & Software Engineering.

The following years of the course address various subjects 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 & Mechatronics and Computer Science & 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 subjects 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.

Year 1
Semester 1
HES1300 Robotics & Mechatronics Project 1
HET124 Energy and Motion
HES1230 Materials & Processes
HMS111 Engineering Maths 1

Semester 2
HES1305 Robotics & Mechatronics Project 2
HES1125 Mechanics of Structures
HET182 Electronic Systems
HMS112 Engineering Maths 2

Year 2
Semester 1
HMS211 Engineering Maths 3A
HES2120 Structural Mechanics 1
HET210 Electronics
HIT1051 Software Development 1

Semester 2
HES2310 Machine Dynamics 1
HET225 Electrical Machines
HIT1052 Software Development 2
HET232 Embedded Microcontrollers

Year 3
Semester 1
HES3350 Machine Design
HET312 Control & Automation
HIT2253 Data Structures & Algorithms
HET343 Mechatronics

Semester 2
HIT2020 Data Communications
HET488 Robotic Control
HIT1031 Introduction to Software Engineering

Year 4
Semester 1
HIT2056 Software Project Management
HES3290 Advanced Technologies
HES3360 Human Factors
HES3380 Engineering Management 2
Semester 2
HIT3054 C++ for Java Programmers
HES3250 Robot System Design
HIT2016 Database 1
HIT2149 Analysis Modelling & Design
Year 5
Semester 1
HES552 Design & Development Project 2
HIT3047 Real Time Programming
HIT3102 Intelligent Agents
HIT3058 Software Engineering Project
Semester 2
HIT3058 Software Engineering Project
HIT3041 Advanced Web Development
HES3385 Engineering Management 3
HIT3044 Professional Issues in Information Technology

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in Mathematical Methods and in one of Biology, Chemistry, Information Technology: Information Systems, Physics, Psychology or Specialist Mathematica.
2003 Final Clearly-In ENTER: 90.90

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34991 (HECS), 34993 (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/hed/scholarships/vcschol.htm
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu/scholarships/vcschol.htm

ESBA055 Bachelor of Science (Biotechnology)/Bachelor of Arts (Media & Communications)

This double degree course prepares graduates for careers in the media and communications industries, where their understanding of the sciences associated with biotechnology will allow them to deal critically with technological issues and enhance community understanding.

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 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

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).

Structure
The program involves four equally-weighted subjects per semester over four 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 final year.

To qualify for the award of BSc a student must complete 200 credit points of science subjects; ie. subjects that would normally be regarded as contributing to the science component of a science degree. Therefore a minimum of four elective science subjects; ie. subjects that would normally be regarded as contributing to the academic component of the course may be accelerated in calendar time by undertaking Summer Semester studies.

To qualify for the award of BA a student must complete 200 credit points of arts subjects, ie. subjects that would normally be regarded as contributing to the science component of a science degree. Therefore a minimum of four elective subjects (50 credit points) must be science subjects in order to fill this minimum requirement.

To qualify for the award of BA a student must complete 200 credit points of arts subjects that are selected to fulfil the requirements for the major study in Media and Communications. The School of Social and Behavioural Sciences will specify requirements for the award of the Bachelor of Arts. This may include the specification of other major or minor studies in addition to the major in Media and Communications.

Stage 1
Semester 1
HES1610 Human Biology
HES1520 Chemistry 1
HMS101 Foundation Maths
HALM104 Media Literature Film: Texts and Contexts
Semester 2
HES1616 Concepts of Biotechnology
HES1525 Chemistry 2
HES1626 Prof Skills for Biotechnologists
HAM105 The Media in Australia

Stage 2
Semester 1
HES2621 Introduction to Biochemistry
HES2831 The Microbial World
HES2510 Practical & Prof Skills
XXX00 Arts Media/Comm Subject
Mastery of the basic scientific principles that underpin biotechnology.

The course is designed to develop:

Aims & Objectives

- 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 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.
- 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

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 subjects are selected in the elective streams.

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

Course duration

Four years full-time plus an optional and additional year of Industry-Based Learning (IBL).

Structure

The program involves four equally-weighted subjects per semester over four 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 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.

To qualify for the award of BSc a student must complete 200 credit points of science subjects; ie subjects that would normally be regarded as contributing to the science component of a science degree. Therefore a minimum of four elective subjects (50 credit points) must be science subjects in order to fill this minimum requirement.

To qualify for the award of BBus a student must complete 200 credit points of business subjects that are selected to fulfil the requirements for the business degree.

ESBB055 Bachelor of Science (Biotechnology)/ Bachelor of Business

This double degree allows students to undertake the Bachelor of Science (Biotechnology) course combined with Swinburne’s accredited three year Bachelor of Business degree. It aims to provide a professional education in biotechnology and business that will enable graduates to use scientific research and innovative skills to create new business enterprise or to contribute to existing businesses.

Aims & Objectives

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 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.
- 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

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 subjects are selected in the elective streams.

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

Course duration

Four years full-time plus an optional and additional year of Industry-Based Learning (IBL).

Structure

The program involves four equally-weighted subjects per semester over four 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 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.

To qualify for the award of BSc a student must complete 200 credit points of science subjects; ie subjects that would normally be regarded as contributing to the science component of a science degree. Therefore a minimum of four elective subjects (50 credit points) must be science subjects in order to fill this minimum requirement.

To qualify for the award of BBus a student must complete 200 credit points of business subjects that are selected to fulfil the requirements for the business degree.
Students should refer to www.hed.swin.edu.au/sex/courses/rules.doc for help with the rules of the Business component of the Double Degree.

Stage 1

Semester 1
HE1610 Human Biology
HE1500 Chemistry 1
HMS101 Foundation Maths
HBM110 The Marketing Concept

Semester 2
HE1616 Concepts of Biotechnology
HE1525 Chemistry 2
HE1626 Professional Skills for Biotechnologists
HBM110 Organisations & Management

Stage 2

Semester 1
HES2621 Introduction to Biochemistry
HES2631 The Microbial World
HES2510 Practical & Professionals Skills
HBE110 Microeconomics

Semester 2
HES2626 Biochemistry of Genes and Proteins
HES2636 Microbes in the Environment
HES2520 Chemistry 3
HBC110 Accounting for Success

Stage 3

Semester 1
HES3500 Industry-Based Learning

Semester 2
HES3505 Industry-Based Learning

Stage 4

Semester 1
HES4621 Advanced Biochemistry
HES4641 Practical Biochemistry
HBL111 Law in Global Business
XXXXX 1st subject of Business Major

Semester 2
HES4626 Biotechnology
HES4646 Biotechnology Research Project
XXXXX 2nd subject of Business Major
XXXXX 3rd subject of Business Major

Stage 5

Semester 1
XXXXX 4th subject of Business Major
XXXXX 5th subject of Business Major
XXXXX 1st subject of Business Minor
XXXXX 2nd subject of Business Minor

Semester 2
XXXXX 6th subject of Business Major
XXXXX 3rd subject of Business Minor
XXXXX 4th subject of Business Minor
XXXXX Business Elective subject (1)

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

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in one of Biology or Chemistry and in one of Mathematical Methods or Specialist Mathematics and English (any).

2003 Final Clearly-In ENTER: 82.55

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34241 (HECS), 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.swinburne.edu.au/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

EATB050 Bachelor of Technology (Air Transportation Management) / Bachelor of Business

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
This 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, accreditation by the Australian Institute of Management (pending).

Course duration
Four years full-time plus an optional six months to one year Industry-Based Learning.

Structure
Students must complete thirteen Business subjects and nineteen Air Transportation Management subjects.

Business Subjects
Four Core Business subjects:
HBC110 Accounting for Success
HBE110 Microeconomics
HBL111 Law in Global Business
HBM110 The Marketing Concept

Five subjects taken from the Management Major which consists of:
HBM222 Marketing Planning (core)
HBM341 Business Strategy (core)
HBM225 HRM in Contemporary Organisations
And one of:
HBC222  Management Decision Making, OR
HBC224  Financial Management
And one of the following Stage 3 subjects:
HBB255  International HRM and Diversity, OR
HBB255  HRM and Entrepreneurship, OR
HBB330  Leadership & Organisation Dynamics, OR
HBM330  Product Management, OR
HBM331  Services Marketing & Management
Plus four subjects taken from any Business Minor. The following Business specific minors are available:
• Accounting
• Asian Business
• Business Law
• Economics
• eMarketing
• European Business
• Finance
• Human Resource Management/Organisation Behaviour
• Information Systems
• International Business
• Manufacturing Management
• Marketing
Students should refer to www.hed.swin.edu.au/ses/courses/rules.doc for help with the rules of the Business component of the Double Degree.
Students must have passed prerequisites/corequisites listed for each subject and must check that they have fulfilled these requirements before enrolling. Subject convenors must be consulted if students wish to enrol in a subject for which they do not have the stated requisites.
Not all subjects will be offered in all semesters, but will normally be offered in the same semester each year. This restriction should be taken into consideration when preparing course plans.

Year 1
Semester 1
HES1920  General Flying Progress Theory
HET124  Energy and Motion
HMS141  Aviation Mathematics
HES1910  Human Factors & Communication
Semester 2
HES2925  Air Transport Pilot Licence 1
HES1935  Internal combustion & Gas Turbine Engines
HES1945  Aircraft Electrics & Avionics
HES1915  Occupational Health & Safety

Year 2
Semester 1
HES2980  Airport Planning & Management
HES2940  Aircraft Aerodynamics & Performance
HES2930  Aircraft Structures
HES2910  Human Factors & Performance
Semester 2
HES6721  Risk Management Principles
HES2915  Aviation Operations
HES2986  Aviation Business Management
And one of:
HES2985  Aircraft Maintenance, OR
HES4885  Airspace Management & Air Traffic Services

Year 3
Semester 1
HES3903  Industry-Based Learning
Semester 2
HES3905  Industry-Based Learning

Year 4
Semester 1
HES4990  Aviation Law
HES4980  Aviation Facilities Management & Contemporary Issues
HBC110  Accounting 1
HBE110  Microeconomics
Semester 2
HBL111  Law in Global Business
HBM110  The Marketing Concept
HBB255  HRM in Contemporary Org
And one of:
HES4915  Crew Resource Management & Instrumentation
HES2945  Aircraft Design & Operations

Year 5
Semester 1
HBM222  Marketing Planning
HBC222  Management Decision Making, OR
HBC224  Financial Management
XXXXXX  1st subject of Business Minor
XXXXXX  2nd subject of Business Minor
Semester 2
HBB325  HRM & Entrepreneurship, OR
HBB330  Leadership & Org Dynamics, OR
HBM330  Product Management, OR
HBM331  Services Marketing & Mgmt
HBM341  Business Strategy
XXXXXX  3rd subject of Business Minor
XXXXXX  4th subject of Business Minor

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), a study score of at least 20 in Mathematical Methods and one of Biology, Chemistry, Physics, Specialist Mathematics, Information Technology, Information Systems, Psychology.
2003 Final Clearly-In ENTER: 80.40

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC), VTAC code: 34421 (HECS), 34423 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

EAB050 Bachelor of Technology (Aviation) / Bachelor of Business

This 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 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. 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 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 additionally 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, accreditation by the Australian Institute of Management (pending).

Course duration
Four years full-time.

Structure
Students must complete thirteen business subjects and nineteen aviation subjects.

Business Subjects
Four Core Business subjects:
- HBC110 Accounting for Success
- HBE110 Microeconomics
- HBL111 Law in Global Business
- HBM110 The Marketing Concept

Five subjects taken from the Management Major which consists of:
- HBM222 Marketing Planning (core)
- HBM341 Business Strategy (core)
- HBH225 HRM In Contemporary Organisations

And one of:
- HBC222 Management Decision Making, OR
- HBC224 Financial Management

And one of the Stage 3 subjects listed:
- HBB323 International HRM and Diversity, OR
- HBB325 HRM and Entrepreneurship, OR
- HBB330 Leadership & Organisation Dynamics, OR
- HBM330 Product Management, OR
- HBM331 Services Marketing & Management

Plus four subjects taken from any Business Minor

The following Business specific minors are available:
- Accounting
- Asian Business
- Business Law
- Economics
- eMarketing
- European Business
- Finance
- Human Resource Management/Organisation Behaviour

- Information Systems
- International Business
- Manufacturing Management
- Marketing

Students should refer to www.hed.swin.edu.au/ees/courses/rules.doc for help with the rules of the Business component of this Double Degree.

Students must have passed prerequisites/corequisites listed for each subject and must check that they have fulfilled these requirements before enrolling. Subject convenors must be consulted if students wish to enrol in a subject for which they do not have the stated requisites.

Not all subjects will be offered in all semesters, but will normally be offered in the same semester each year. This restriction should be taken into consideration when preparing course plans.

Year 1
Semester 1
- HES1900 General Flying Progress Theory
- HET124 Energy & Motion
- HMS141 Aviation Mathematics
- HES1910 Human Factors & Communication

Semester 2
- HES1905 Commercial Pilot Licence 1
- HES1935 Internal Combustion & Gas Turbine Engines
- HES1945 Aircraft Electrics & Avionics
- HES1915 Occupational Health & Safety

Year 2
Semester 1
- HES2960 Commercial Pilot Licence 2
- HES2940 Aircraft Aerodynamics & Performance
- HES2930 Aircraft Structures
- HES2910 Human Factors & Performance

Semester 2
- HES2905 Air Transport Pilot Licence 1
- HES2985 Aviation Business Management
- HBC110 Accounting
- HES2935 Aircraft Maintenance, OR
- HES4915 Crew Resource Management & Instructional Techniques, OR
- HES4985 Airspace Management & Air Traffic Services

Year 3
Semester 1
- HES3901 Industry-Based Learning

Year 4
Semester 1
- HES4900 Air Transport Pilot Licence 2
- HES4990 Aviation Law
- HES4980 Aviation Facilities Management & Contemporary Issues
- HBE110 Microeconomics

Semester 2
- HES4905 Air Transport Pilot Licence 3
- HBL111 Law in Global Business
- HBM110 The Marketing Concept
- HBC222 Management Decision Making, OR
- HBC224 Financial Management
Year 5

Semester 1

HBH225 HRM in Contemporary Org
HBM222 Marketing Planning
HBM341 Business Strategy

And one of:

HBH323 International Human Resources Mgmt & Diversity, OR
HBH325 HRM & Entrepreneurship, OR
HBM330 Leadership & Org Dynamics, OR
HBM330 Product Management, OR
HBM331 Services Marketing & Management

Semester 2

XX00XX 1st subject of Business Minor
XX00XX 2nd subject of Business Minor
XX00XX 3rd subject of Business Minor
XX00XX 4th subject of Business Minor

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

2004 VCE prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), a study score of at least 20 in Mathematical Methods, one of Biology, Chemistry, Physics, Specialist Mathematics, Information Technology: Information Systems, or Psychology.

Applicants should ensure they are able to pass the medical requirements of the Civil Aviation Safety Authority (CASA) Class 1 Medical.

Conditions apply with respect to previous flying experience.

2003 Final Clearly-In ENTER: 82.05

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34511 (HECS), 34513 (Int. Fee)

Applicants must also submit an application form, available from the School of Engineering and Science, by the 30 September.

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

HONOURS YEAR

Z069 Bachelor of Health Science (Public and Environmental Health)(Honours)

This program provides an opportunity for selected students, who have achieved a high standard during the environmental health course, to graduate with a degree with honours.

Aims & Objectives
- 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.

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/courseswork). The typical students average weekly workload during semesters is therefore deemed to be 50 hours.

Semester 1

HASP096 Quantitative Research Methods
HASP097 Qualitative Research Methods
HESSXXX Honours Project

Semester 2

HESSXXX Honours Seminars
HESSXXX 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 subjects will be required. International students are also eligible to apply.

Z073 Bachelor of Science (Applied Chemistry)(Honours)

This program provides an opportunity for selected students, who have achieved a high standard during the applied chemistry course, to graduate with a degree with honours. Students undertaking this course will also be prepared for higher degree studies.

Campus
Hawthorn

Course duration
One year full-time.

Structure
In most circumstances, the Honours course is completed in one year of study after completion of a Bachelor of Science, or Bachelor of Science in Applied Chemistry, or an equivalent degree. In this year, students will undertake honours lectures at an advanced level and a research project.

Semester 1

HESS540 Honours lectures
HESS590 Honours project

Semester 2

HESS540 Honours lectures
HESS590 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 Biochemistry Coordinator towards the conclusion of the final year of their course.

Z072 Bachelor of Science (Biochemistry)(Honours)

This program provides an opportunity for selected students, who have achieved a high standard during a biochemistry or biotechnology course, to continue their undergraduate studies to an honours level. Students undertaking this course will also be prepared for higher degree studies.

Campus
Hawthorn
Course duration
One year full-time.

Structure
Two streams are available. In most circumstances, the Honours course is completed in one year of study after completion of a Bachelor of Applied Science or Bachelor of Science in biochemistry, biotechnology, or an equivalent degree. In this year, students will undertake honours lectures at an advanced level and a research project.

An accelerated program, that enables the degree to be obtained in four years in conjunction with their undergraduate degree studies, is also available. In this stream, students will commence an industry-oriented honours research project whilst undertaking their Industry-Based learning (IBL) year, and complete honours lectures and a research project in the final year of the course.

Semester 1
HES5640 Honours Lectures
HES5590 Honours Project

Semester 2
HES5640 Honours Lectures
HES5590 Honours Project

Accelerated program Stage 1 and 2
As per Bachelor of Science (Biochemistry) or (Biotechnology) course.

Stage 3
Semester 1
HES3500 Industry-Based Learning
HES4500 Chemistry 5

Semester 2
HES3515 Industry Oriented Honours Project
HES4505 Chemistry 6

Stage 4
Semester 1
HES5640 Honours Lectures
HES5580 Honours Project
HES4621 Advanced Biochemistry
HES4641 Practical Biochemistry

Semester 2
HES5640 Honours Lectures
HES5580 Honours Project
HES4626 Biochemistry 4

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.

To obtain entry into the accelerated program, students must obtain a weighted average mark of 65% or greater in Stage 2 of their undergraduate course, in addition to the identification of a suitable honours research project.

Application procedure
Application should be made to the Honours in Chemistry and Biochemistry Co-ordinator towards the conclusion of the final year of their course (or at the conclusion of second year for the accelerated program).
School of Information Technology

Information technology is one of the most exciting, expanding and evolving fields. The demand for IT professionals is now increasing with industry experts predicting that there will be a shortage of well trained specialists in the latest innovative technology in the next 3–4 years. By choosing to study IT you have a wonderful opportunity to develop a career that will be both exciting, and useful.

Swinburne is a recognised leader in cutting-edge IT education that meets the needs of industry and business. Our courses focus on providing students with the most highly sought after industry knowledge and skills. This focus ensures that Swinburne IT graduates are amongst the most employable in the nation, as measured by national surveys.

The School of Information Technology offers a wide range of innovative and industry-relevant undergraduate and postgraduate degrees, which span the spectrum from highly technical software engineering, through to the design, implementation and management of business information systems.

The School also has a major role in IT research, where staff are involved in exciting, innovative work in software engineering, human-computer interaction, intelligent systems, electronic commerce and computational science. Our research informs our teaching, and ensures that our students are aware of most recent developments.

Further information
Contact the School of Information Technology on +61 3 9214 5505
Email: itinfo@swin.edu.au
Website: www.it.swin.edu.au/

A066 Bachelor of Information Systems

The Bachelor of Information Systems is concerned with the application of information technology to support organisations in the conduct of their business. It examines the organisational issues, techniques and technology required for the analysis, design and implementation of solutions to business requirements.

Aims & Objectives
- To provide the necessary knowledge and skills in the application of information technology to support organisations in the conduct of their business.
- To examine the technology, techniques, and organisational issues relating to the analysis, design and implementation of solutions to business requirements.

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.

Graduates may choose to specialise in one of the following employment areas:
- Systems analysis: analysis of the information needs of organisations leading to specification of requirements for computer-based information systems.
- Project management: definition and management of the scope and task structure of information systems projects and management of the resources for project implementation.
- Product support: facilitation of the effective use of major computer software products to solve information-processing problems.
- Software development: application of sound principles of design and construction to the development and implementation of computer-based information systems.
- User liaison: provision of software product and information systems methodology expertise to facilitate effective use of information technology for a variety of business and professional applications.

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 may also be available.

Structure
Students take a total of 24 subjects (or equivalent).

Program of study must include:
- Twelve nominated IT subjects
- Four nominated business core subjects
- Four elective business subjects (not stage 1), at least one of which must be Stage 3.
- One or two IT electives, one of which must be at Stage 3.
- Two electives which can be from Humanities, Business, Social Science or IT

In addition to the above, there is a mandatory subject HIT0004 Careers in the Curriculum.

This is a non-charged subject of 1 hour per week with zero credit points, taken in 2nd year.

Note that there are two optional streams. The first stream covers programming in Visual Basic. The second stream covers programming in Java. Students taking the Visual Basic stream may also take Java subjects as electives (and vice-versa).

Recommended areas of business study are:
- Accounting
- Organisation Behaviour
- Marketing
- Economics
- Management

It is possible to take two electives from the Languages, Media or Social Sciences areas.

Stage 1

Semester 1
HIT1025 Introduction to Information Systems
HIT1109 Introduction to Programming (Visual Basic stream), or
HIT1051 Software Development 1 (Java stream)
HIT2016 Database 1
HBC110 Accounting for Success

Semester 2
HIT2006 Business Computing (VB stream), or
HIT1031 Introduction to Software Engineering (Java stream)
HIT2110 Programming for VB.NET (VB stream), or
HIT1052 Software Development 2 (Java stream)
HIT1091 Web Development HBE110 Microeconomics, or
HMB111 Quantitative Analysis B

Stage 2

Semester 1
HIT3049 Systems Analysis & Modelling (VB stream), or
HIT2006 Business Computing (Java stream)
HIT3017 Database 2
HBM110 Organisations & Management
HBM110 The Marketing Concept

Semester 2
HIT0004 Careers in the Curriculum
HIT3185 Data Communications & Networks (either stream), or
HIT2120 Data Communications & Security (Java stream only)
Elective
Elective
Elective

Stage 3
HIT3101 Optional IBL Year
Stage 3 or 4
Semester 1
HIT3126 Information Technology - A Critical Review
Elective
HIT3024 Introduction to Human-Computer Interaction
Elective
HIT3092 Advanced Web Technologies
Elective
HIT3007 Business Computing Applications
Elective
HIT3018 Database 3
Elective
HIT3072 C++ for Programmers
Elective
HIT3084 E-Commerce - A Business Perspective
Elective
HIT3110 Component Based Development - .NET
Elective
HIT3149 Analysis Modelling & Design (Java stream only)
Elective
HIT4071 Research Project
Elective
HBSS200 New Venture Development & Management (non-IT elective)

Note:
- Availability of all electives is subject to timetable constraints and prerequisite requirements.
- Students who have chosen the Visual Basic Stream may take Java subjects HIT1051 and HIT1052 as electives.
- Students who have chosen the Java Stream may take the Visual Basic subject HIT2110 as an elective.

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any). Passes may be accumulated over more than one year.
2003 Final Clearly-In ENTER: 81.25

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34641F(T), 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, 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/hed/scholarships/vcschol.htm
International students should contact the International Student Unit on +61 3 9214 8847 or visit the website at: www.swinburne.edu.au/isu

I050 Bachelor of Information Technology

The Bachelor of Information Technology is concerned with the design, implementation and management of computer systems in all types of organisations. The skills required of an information technology specialist include systems analysis, systems design, programming, data management, information dissemination and interpersonal communications and management.
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.
The program is sponsored by 30 of Australia's top organisations and all students receive a scholarship of approximately $9,000 p.a. during their studies. 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.


Aims & Objectives

- To provide an infrastructure through which students can gain both technical knowledge and interpersonal skills and 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.

Career opportunities
Graduates 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: software developer, systems analyst, project manager, production manager, programmer, client service network consultant, and network coordinator.

Professional recognition
The degree is accredited at professional level towards membership of the Australian Computer Society.

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.

Structure
This course includes four normal semesters, two summer semesters and two twenty-week periods of Industry-Based Learning. This provides a course which is essentially a four-year course completed in three calendar years.

Electives
It is recommended that students follow a sequence of business or management related studies from the areas of Accounting and Finance, Human Resource Management, Marketing, Management Science, or Social and Behavioural Science. Students may be permitted to take non-computing subjects from any area within Swinburne.

Stage 1
Semester 1
HBC110 Accounting for Success
HBSH100 Behaviour and Communications in Organisations
HIT1025 Introduction to Information Systems
HIT1151 Software Development 1A
HIT2016 Database 1
Semester 2
- HIT1031 Introduction to Software Engineering
- HIT1091 Web Development
- HIT1152 Software Development 2A
- HIT2005 Information Technology Infrastructure
- HIT2006 Business Computing

Summer Semester
- HBSS2000 Organisation Behaviour
- HIT2013 COBOL Programming
- HIT3017 Database 2

Stage 2
Semester 1
- HIT2100 Industry-Based Learning (20 weeks)

Semester 2
- HIT3149 Analysis Modelling & Design
- HIT3018 Database 3
- HIT3185 Data Communications & Networks
  Elective

Elective

Stage 3
Semester 1
- HIT3007 Business Computing Applications
- HIT3034 Information Systems Project
- HIT3186 Information Technology - A Critical Review
  Elective

Elective

Semester 2
- HIT2100 Industry-Based Learning (20 weeks)

Summer Semester
- HIT3044 Professional Issues in Information Technology

Non-IT Electives
Students must take one IT elective. Availability of electives is subject to resource and time constraints. Students must have the appropriate prerequisites for the subject. Other electives may be chosen, subject to the approval of the Program Manager.
- HAH100 Introduction to Philosophy
- HAH103 Critical Thinking
- HBC220 Financial Information Systems
- HBC222 Management Decision Making
- HBE110 Microeconomics
- HBE220 Macroeconomics
- HBH330 Organisation Behaviour: Dynamics of Group and Organisational Behaviour
- HBL111 Law in Global Business
- HBL220 Contract Law
- HBM110 The Marketing Concept
- HBM220 Market Behaviour
- HBSG200 New Venture Development & Management
- HMS133 Maths for Computing

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.

2004 VCE prerequisites: Units 3 & 4 - Mathematics (any) and a study score of at least 25 in English (any) or equivalent.

2003 Round 1 Fringe ENTER: 87.60

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34311(HDCS)

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

In addition to the application to VTAC, applicants must also apply directly to Swinburne.

J060 Bachelor of Multimedia
(Multimedia Software Development)

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 internet 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.

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
Hawthorn

Career opportunities
Graduates 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.

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

Structure
Total student contact hours, including lectures, classes, tutorials, flexible learning and laboratory and field sessions will vary in different semesters. Students select four IT electives during the program. Availability of electives is subject to timetabling and resource constraints.

Stage 1
Semester 1
- HDMD101 Design for Multimedia 1
- HET113 The Internet & WWW 1
- HIT1015 Computer Systems
- HIT1051 Software Development 1
Entry requirements

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

2004 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in each of English (any) and Mathematics (any).

Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34091(HECS), 34093 (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/hed/scholarships/vcsschol.htm

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

Z063Y Bachelor of Science (Computer Science and Software Engineering)

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 subjects 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 and in an optional supervised industry-based learning year. The course uses Java as the first programming language, recognising the role of this 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 professional.
- Knowledge and experience in human-computer interaction, web-based systems, database systems and data communications.

Campus

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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).

Course duration
Three years full-time. An optional and additional year of Industry-Based Learning is also available.

Course subjects

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<td>HIT1015</td>
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<td>HIT2016</td>
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| Semester 2 |
| HIT1015 | Introduction to Information Systems |
| HIT1031 | Introduction to Software Engineering |
| HIT1052 | Software Development 2 |
| HMS133 | Mathematics for Computing |

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<td>HIT2092</td>
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<tr>
<td>HIT2253</td>
<td>Data Structures And Algorithms</td>
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| Semester 2 |
| HIT2114 | Operating Systems (Linux) |
| HIT1210 | Data Communications & Security |
| HIT3049 | Analysis Modelling & Design |
| HIT3054 | C++ for Java Programmers |

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<th>Stage 4</th>
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<td>HIT3017</td>
<td>Database 2</td>
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<tr>
<td>HIT3058</td>
<td>Software Engineering Project</td>
</tr>
<tr>
<td>HIT3102</td>
<td>Intelligent Agents</td>
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| Semester 2 |
| HIT3044 | Professional Issues in Information Technology |
| HIT3058 | Software Engineering Project |

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<td>HIT3063</td>
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<td>HIT3084</td>
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<td>HIT3087</td>
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Electives
Students may select five elective subjects in their final year, of which three must be IT electives. The availability of electives is subject to timetabling and resource constraints. IT electives to be offered may include the following:

- HIT3110 Component Based Development. NET
- HIT3136 Information Technology - A Critical Review
- HIT3138 Intelligent Systems
- HIT3140 Multimedia for WWW
- HIT3142 Object Oriented Modelling
- HIT3157 Large Scale System Design
- HIT3165 Windows Programming. NET
- HIT3197 Advanced .NET Programming
- HIT4071 Research Project
- HIT4189 Usability Engineering
- HBSG200 New Venture Development & Management - Non-IT Elective

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

2004 VCE Prerequisites: Units 3 & 4 - A study score of at least 25 in English (any) and in one of Mathematical Methods or Specialist Mathematics. A bonus is awarded to applicants who have successfully completed Units 3 & 4 Physics, Information Technology: Information Systems and/or Specialist Mathematics.

2003 Final Clearly-In ENTER: 81.65

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34431(HECS), 34433 (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/hed/scholarships/vcsschol.htm

International students should contact the International Student Unit on +61 3 9214 8847 or visit the website at: www.swinburne.edu.au/isu

Z160Y Bachelor of Science (Computing)

The Bachelor of Science (Computing) is a two year course, available to students who have completed an appropriate IT/Computing associate diploma, or a two year diploma at a TAFE institution or equivalent. Pathways programs such as this have become extremely popular over the past few years as an alternative method for entry into a degree course.

The course reflects the emerging prominence of the object-oriented approach to software development and has an emphasis on multi-media software development for the web. It offers an integrated approach to the analysis, design and implementation of computer systems which assists students to embrace the whole software development lifecycle. It provides students with the knowledge, skills and attitudes to make them valuable members of any software development team, where those skills are built upon a science base which includes topics such as database, artificial intelligence and data communications.

The course uses Java as the first programming language, recognising this language's role in the development of web-based systems. Students then develop skills in the C++ programming language.

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.
- 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 the social, legal and ethical issues confronting the software engineering professional.
- Knowledge and experience in human-computer interaction, knowledge-based systems, database systems and data communications.
Campus
Hawthorn

Career opportunities
Graduates can seek employment in areas such as: computer programming, Internet systems development, multimedia software development, systems analysis and design, database administration, and computer network support.

Professional recognition
This course is accredited at professional level towards membership of the Australian Computer Society (ACS).

Course duration
Two years full-time.

Structure
Four subjects will generally be taken during each academic semester, with a total of around 12 hours per week contact time (including lectures, classes, tutorials and laboratory sessions). A typical student’s average weekly workload during a semester is expected to be 50 hours. Students may choose two elective subjects in the final year of the course, enabling them to explore particular interests. The acquired skills and knowledge are consolidated in a project subject in the final year.

Depending on TAFE subjects and results, students may obtain up to four exemptions.

Stage 1
Semester 1
- HIT1051 Software Development 1
- HIT1091 Web Development
- HIT2016 Database 1
- HIT2024 Introduction to Human-Computer Interaction

Semester 2
- HIT0004 Careers in the Curriculum
- HIT2092 Advanced Web Technologies
- HIT1031 Introduction to Software Engineering (Java stream, or
- HIT1249 Systems Analysis and Modelling (Visual Basic stream)
- HIT1052 Software Development 2 (Java stream, or
- HIT1210 Programming in VB .NET (VB stream)
- HIT2120 Data Communications & Security (Java stream, or
- HIT3185 Data Communications & Networks (VB stream)

Stage 2
Semester 1
- HIT2056 Software Project Management
- HIT3017 Database 2
- HIT3044 Professional Issues in Information Technology
  Elective

Semester 2
- HIT3061 Software Team Project
- HIT3149 Analysis Modelling & Design (JAVA stream, or
- HIT3110 Component Based Development .NET, or
  Elective
  Elective

Electives
Availability of electives is subject to timetabling and resource constraints. Prerequisite requirements must be adhered to. Electives may include the following:
- HIT3018 Database 3
- HIT3201 Distributed Object Technology
- HIT3047 Real Time Programming
- HIT3050 Evolutionary & Neural Computing
- HIT3057 Software Testing & Reliability

Note: Students who choose the Visual Basic stream may take the Java subject HIT1052 as an elective. Students who choose the Java stream may take the Visual Basic subject HIT2110 as an elective.

Entry requirements
Applicants must have completed an appropriate TAFE Information Technology/ Computing associate diploma, two year diploma or equivalent with an average of at least 65%. The course may be in business, science or engineering, and must have its major emphasis in IT/Computing.

2003 ENTER: Individual offer.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34501(HECS)
For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 9847 or visit the website at: www.swinburne.edu.au/isu

Z161Y Bachelor of Science (Information Technology)

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

Professional recognition
Recognition of the course at Professional Level (the highest level) with the Australian Computer Society.

Course duration
One year full-time (2-3 semesters).

Structure
The program consists of 8 – 10 subjects, each of 12.5 Credit Points, taken over two or three semesters. Four subjects will be taken in each normal semester, and two may be taken in the shorter summer semester. Students who have completed a diploma with a strong major in software development or ICT will generally be required to complete 8 subjects over two normal semesters. Students who have completed a diploma in information systems or in systems analysis will generally be required to complete 10 subjects.

Students must take the following if not already covered in previous studies:
- HIT3037 Programming in Java
- HIT2016 Database 1
- HIT2024 Introduction to HCI
- HIT2056 Software Project Management
- HIT2120 Data Communications & Security

Available electives: HIT3110 Component Based Development .NET, or
Elective
Elective
Electives
- HIT3018 Database 3
- HIT3201 Distributed Object Technology
- HIT3047 Real Time Programming
- HIT3050 Evolutionary & Neural Computing
- HIT3057 Software Testing & Reliability

Note: Students who choose the Visual Basic stream may take the Java subject HIT1052 as an elective. Students who choose the Java stream may take the Visual Basic subject HIT2110 as an elective.
Course subjects

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<tr>
<th>Code</th>
<th>Course</th>
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<tbody>
<tr>
<td>HIT3061</td>
<td>Software Team Project</td>
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<tr>
<td>HIT3044</td>
<td>Professional Issues in Information Technology</td>
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<tr>
<td>HIT1091</td>
<td>Web Development</td>
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</table>

At least 75 credit points must be taken at Level 3.

Entry requirements

An appropriate diploma or equivalent, in an information technology field, from a polytechnic, college or equivalent at an acceptable level of achievement. Students with equivalent qualifications and/or knowledge from Australia or other countries will also be considered for admission. Applicants will also be expected to have satisfied Swinburne’s English language requirements.

Application procedure

International students should contact the International Student Unit on +61 3 9214 8847 or visit the website at: www.swinburne.edu.au/isu

ZO44 Bachelor of Software Engineering

The Bachelor of Software Engineering (BSE) is an exceptionally innovative and challenging engineering course that provides graduates with substantial advanced skills in software engineering. The course allows students to situate that knowledge soundly within an appreciation of the broader, traditional engineering disciplines. It provides students with the knowledge and practice base characterising the graduate engineer.

The course focuses on the object-oriented approach to software development, accepted by industry as a key technology for the future. It 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. There is also a focus on applications involving multi-media, and on web-based systems, with an emphasis on the design of effective human-computer interaction.

The selection of electives allows students to explore specialist areas of computer science/software engineering at an advanced level. The incorporation of an engineering minor ensures that the students are also able to enhance their engineering knowledge in core engineering disciplines.

A range of options in the final year of the course allows students to study advanced subjects in areas such as 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 and in an optional supervised Industry-Based Learning year.

Graduates will be well equipped to meet the predicted growth in industry demand for professionals in information technology, made possible by an explosion of digital media content, a transition from professional to mass consumer markets, and international trading of new information products on a scale comparable to that in traditional manufactured goods. Graduates will have extensive skills in software development, particularly relating to medium and large scale projects. They will also have experience in working on team projects and will have well-developed oral and written communication skills.

Aims & Objectives

Graduates of this course will possess:

- Knowledge of the fundamentals of Mathematics, Computer Science and Physics, which constitute the academic underpinnings of the Software Engineering discipline.
- Knowledge of the methods (the management principles underpinning analysis, design, implementation and maintenance), techniques (approaches and notations) and tools (software engineering environments) of contemporary Software Engineering.
- Skills in situating knowledge obtained within the core engineering disciplines.
- Advanced skills in management of resources and technology, as required of an engineering professional.
- 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.
- High-level skills 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 professional.
- Knowledge and experience in human-computer interaction, knowledge-based systems, database systems and data communications.

Campus

Hawthorn

Career opportunities

Graduates will typically find employment in organisations engaged in medium to large-scale software development. The course is orientated towards applications in areas such as aerospace, medicine and defence, where software plays a major role, often of a safety-critical nature. Initially graduates are employed in technical areas such as programming and systems analysis and design, with good opportunities available for progression into project leadership and management positions.

Professional recognition

The degree has accreditation with The Institution of Engineers, Australia (IEAust) and graduates are also eligible for the professional level of membership of the Australian Computer Society (ACS).

Course duration

Four years full-time plus either one year Industry-Based Learning (IBL) or twelve weeks of relevant industry experience.

Structure

Total student contact hours, including lectures, classes, tutorials and laboratory sessions, will be approximately twelve to sixteen hours per week during the academic semesters. In each practical subject, students will be expected to spend three or four hours per week in unsupervised laboratories or using a home computer in addition to formal class time.

Students who omit the year of Industry-Based Learning (IBL) must take at least twelve weeks of relevant industry experience prior to graduation.

Stage 1

Semester 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>HIT1015</td>
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<tr>
<td>HIT1151</td>
<td>Software Development 1A</td>
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<td>Semester 2</td>
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<tr>
<td>HIT1031</td>
<td>HIT2114</td>
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<td>HIT1152</td>
<td>HIT3014</td>
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<td>HET192</td>
<td>HIT3044</td>
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<tr>
<td>HMS112</td>
<td>HIT4058</td>
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<tr>
<td></td>
<td>IT Elective or Engineering Minor Stream</td>
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<table>
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<td>HIT2120</td>
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<td>HIT2253</td>
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<table>
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<td>HIT3044</td>
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<td>HIT4058</td>
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**Stage 3**

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<th>Stage 4</th>
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**Stage 5**

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<td>HIT4058</td>
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</table>

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>HIT3044</td>
<td>HIT3044</td>
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<tr>
<td>HIT4058</td>
<td>HIT4058</td>
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</tbody>
</table>

**Notes:**
- Students take 2 subjects in the Engineering Minor Stream in Stage 5.
- Students may choose to study HIT3044 Professional Issues in Information Technology in Semester 1 in place of an IT elective, in which case they will take an additional IT elective in Semester 2.

### Engineering Minor Streams

Engineering Minor Streams are currently offered in Digital Electronics, Telecommunications and Robotics. Subjects studied are:

#### Digital Electronics
- HET202 Digital Electronics
- HET232 Embedded Microcontrollers
- HET378 Integrated Circuit Design
- HET329 Digital Signal and Image Processing, or
- HET416 Computer Systems Engineering

#### Telecommunications
- HET314 Communication Principles
- HET315 Communications Information Theory
- HET336 Network Engineering
- HET364 Unix for Telecommunications, or
- HET329 Digital Signal and Image Processing

Note: Students choosing this stream may be permitted to study an additional telecommunication subject in final year, replacing one of the IT electives.

#### Robotics
- HET312 Control & Automation
- HET489 Robotic Control
- HET343 Mechatronics
- HESS250 Robotic System Design

#### Electives

Availability of electives is subject to timetabling and resource constraints. IT electives to be offered may include the following:

- HIT3018 Database 3
- HIT3021 Distributed Object Technology
- HIT3142 Object Oriented Modelling
- HIT3050 Evolutionary and Neural Computing
- HIT3063 Unix Systems Programming
- HIT3084 E-Commerce: A Business Perspective
- HIT3087 Advanced Java
- HIT3136 Information Technology - A Critical Review
- HIT3138 Intelligent Systems
- HIT3142 Object Oriented Modelling
- HIT3165 Windows Programming .NET
- HIT3197 Advanced .NET Programming
- HIT4071 Research Project
- HIT4187 Usability Engineering

### Entry requirements

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

2004 VCE Prerequisites: Units 1 & 2 - Physics. Units 3 & 4 - a study score of at least 25 in English (any) and in one of Specialist Mathematics or Mathematical Methods. A bonus is awarded to applicants who have successfully completed Units 3 and 4 Physics, Information Technology: Information Systems and/or Specialist Mathematics.

2003 Final Clearly-In ENTER: 81.00.

### Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34961(HECS), 34963 (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/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu
DOUBLE DEGREE

A067 Bachelor of Information Systems / Bachelor of Business

The Bachelor of Information Systems/Bachelor of Business double degree offers students a program in information systems with specialist studies in business practices. Students select Information Systems subjects to develop specialist skills in the analysis and design of computer based information systems and the management of information technology. The Business discipline covers the areas of accounting, economics, business law, organisation behaviour/human resource management and quantitative analysis.

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 technology to solve business problems.

Career opportunities

This double degree opens up many employment opportunities, both in the public and private sectors. Graduates currently find employment in organisations that utilise information technology to support traditional business applications. Graduates will generally have an advantage in the market place compared to those with single discipline degrees.

The Information Systems Discipline provides graduates with the opportunity to specialise in a wide range of professional occupations, including:

- Systems analysis: analysis of the information needs of organisations leading to specification of requirements for computer-based information systems.
- Project management: definition and management of the scope and task structure of information systems projects and management of the resources for project implementation.
- Product support: facilitation of the effective use of major computer software products to solve information-processing problems.
- Software development: application of sound principles of design and construction to the development and implementation of computer-based information systems.
- User liaison: provision of software product and information systems methodology expertise to facilitate effective use of information technology for a variety of business and professional applications.

The Business discipline provides graduates with the opportunity to specialise in a wide range of professional occupations, including:

- Accounting: public accountancy, finance business consulting, general management.
- Business Law: property officer, accountant, trust officer, administrator, company legal officer.
- Business Modelling: market analyst, business consultant.
- Economics: business management, management consultancy, economic research, international trade, financial analyst.
- Finance: investment advice, corporate treasury, money dealing, share broking, portfolio management.
- Manufacturing Management: service departments including marketing, human resources, management accounting within industry/processing settings such as food and beverages, fibres, minerals, or manufacture or consumer goods including motor vehicles, white goods or pharmaceuticals.
- Marketing: public relations, advertising, product/brand management, market research, direct marketing, international marketing.
- Organisational Behaviour/Human Resource Management: administration, human resources, training management, quality coordinator, customer service.

Professional recognition

The course is accredited at professional level towards membership of the Australian Computer Society (ACS) and, with appropriate choice of business subjects, membership requirements of the Australian Society of Certified Practising Accountants (ASCPA).

Course duration

Four years full-time plus one year optional Industry-Based Learning or eight years part-time.

Structure

Students take a total of thirty-two subjects (or equivalent) consisting of:

- Twelve nominated IT core subjects
- Six nominated Business core subjects
- Six Business subjects forming a major
- Two to four IT electives, of which one must be at Level 3
- Four to six electives which can be from Business, Humanities or Social Sciences.

In addition to the above, there is a mandatory subject, HIT0004 Careers in the Curriculum. This is a non-charged subject of one hour per week with zero credit points, taken in third year.

Note that there are two optional streams. The first stream covers programming in Visual Basic. The second stream covers programming in Java. Students taking the Visual Basic stream may also take Java subjects as electives (and vice-versa).

Electives

Students must meet the prerequisite requirements of the elective they select. Availability of all electives is subject to timetabling and resource constraints. Students must complete a minimum of one and a maximum of three IT electives. The other electives must include at least one major (six post-core subjects in a business discipline). The available business disciplines are:

- Accounting
- Business Law
- Economics
- Finance
- Human Resource Management/Organisation Behaviour
- Manufacturing Management
- Marketing

The remaining six electives may be taken from IT, Business, Arts or Social Sciences, with at most two being IT subjects. Arts and Social Science electives could include:

- Australian studies
- Cultural studies
- Italian
- Japanese
- Literature
- Media studies
- Political studies
- Psychology
- Philosophy and Cultural Inquiry

Stage 1

Semester 1

- HIT1109 Introduction to Programming (Visual Basic stream), or
- HIT1051 Software Development 1 (Java stream)
- HIT1025 Introduction to Information Systems
- HIT2016 Database 1
- HBC110 Accounting for Success

Semester 2

- HIT2110 Programming in VB.NET (VB stream), or
- HIT1052 Software Development 2 (Java stream)
- HIT2006 Business Computing (VB stream), or
- HIT1031 Introduction to Software Engineering (Java Stream)
- HIT1091 Web Development
- HBM110 The Marketing Concept

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### Stage 2

#### Semester 1
- HIT3049 Systems Analysis & Modelling (VB stream), or
- HIT2006 Business Computing (Java stream)
- HIT3017 Database 2
- HBE110 Microeconomics
- HBH110 Organisations & Management

#### Semester 2
- HIT3185 Data Communications & Networks (either stream), or
- HIT2120 Data Communications & Security (Java stream only)
- HBL111 Law in Global Business
- HMB111 Quantitative Analysis

### Stage 3

#### Semester 1
- HIT0004 Careers in the Curriculum
- HIT3136 Information Technology - A Critical Review

#### Semester 2
- HIT3034 Information Systems Project
- HIT3044 Professional Issues in Information Technology

### Stage 4

Optional year of Industry-Based Learning (IBL)

### Stage 5

#### Semester 1
- Elective
- Elective
- Elective

#### Semester 2
- Elective
- Elective
- Elective
- Elective

### IT Electives
Possible electives include the following:
- HIT2005 IT Infrastructure
- HIT2024 Introduction to Human-Computer Interaction
- HIT2092 Advanced Web Technologies
- HIT3007 Business Computing Applications
- HIT3018 Database 3
- HIT3072 C++ for Programmers
- HIT3084 E-Commerce - A Business Perspective
- HIT3110 Component Based Development - NET
- HIT3149 Analysis Modelling & Design (Java stream only)
- HIT4071 Research Project
- HBSG200 New Venture Development & Management (non-IT elective)

### Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34561(HECS), 34563 (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/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

### HONOURS YEAR

#### A068 Bachelor of Information Systems (Honours)

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.

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.

The Honours course is a recognised point of entry into postgraduate research studies, see PhD scholarships at www.it.swin.edu.au/centres/scholarships.htm.

### 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.

### Structure

Honours students enrol in an equivalent of eight subjects: four coursework subjects and an equivalent of four Honours thesis subjects. The course consists of components with a breakdown of workload as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Credit Points</th>
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</thead>
<tbody>
<tr>
<td>HIT4000 Honours Research Project (50 credit points)</td>
<td>50</td>
</tr>
<tr>
<td>Coursework (50 credit points)</td>
<td></td>
</tr>
<tr>
<td>HIT4010 Research Methods (12.5 credit points)</td>
<td>12.5</td>
</tr>
<tr>
<td>Three electives (12.5 credit points per subject)</td>
<td></td>
</tr>
</tbody>
</table>

At least two honours subjects must be advanced postgraduate level (or equivalent) or one of the Honours Reading Subjects HIT4020 and HIT4021. At most, one of the three honours subjects can be an advanced undergraduate level subject. These subjects are chosen in collaboration with the supervisor and approved by the honours program manager.

#### Semester 1
- HIT4000 Honours Research Project
- HIT4010 Research Methods

#### Semester 2
- HIT4000 Honours Research Project

### Entry requirements

A Bachelor's (pass) degree from Swinburne University of Technology or another recognised university (or equivalent). 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.
Application procedure

The application form is available for downloading at www.it.swin.edu.au/centres/honours.htm

1051 Bachelor of Information Technology (Honours)

The 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.

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.

The honours course is a recognised point of entry into postgraduate research studies, see PhD scholarships at www.it.swin.edu.au/centres/scholarships.htm

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.

Structure

Honours students enrol in an equivalent of eight subjects: four coursework subjects and an equivalent of four Honours thesis subjects. The course consists of components with 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 subjects (12.5 credit points per subject).

At least two honours subjects must be advanced postgraduate level (or equivalent) or one of the Honours Reading Subjects HIT4020 and HIT4021. At most, one of the three honours subjects can be an advanced undergraduate level subject. These subjects are chosen in collaboration with the supervisor and approved by the honours program manager.

Semester 1

<table>
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<td>Honours Research Project</td>
</tr>
<tr>
<td>Hit4010</td>
<td>Research Methods</td>
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<tr>
<td>Elective 1</td>
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<tr>
<td>Elective 2</td>
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Semester 2

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Hit4000</td>
<td>Honours Research Project</td>
</tr>
<tr>
<td>Elective 3</td>
<td></td>
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</tbody>
</table>

Entry requirements

A Bachelor of Information Technology (pass) degree from Swinburne University of Technology or another recognised university (or equivalent). 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.

Application procedure

The application form is available for downloading at www.it.swin.edu.au/centres/honours.htm

Z065Y Bachelor of Science (Computer Science)(Honours)

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.

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.

The honours course is a recognised point of entry into postgraduate research studies, see PhD scholarships at www.it.swin.edu.au/centres/scholarships.htm

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.

Structure

Honours students enrol in an equivalent of eight subjects: four coursework subjects and an equivalent of four Honours thesis subjects. The course consists of components with 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 subjects (12.5 credit points per subject)

At least two honours subjects must be advanced postgraduate level (or equivalent) or one of the Honours Reading Subjects HIT4020 and HIT4021. At most, one of the three honours subjects can be an advanced undergraduate level subject. These subjects are chosen in collaboration with the supervisor and approved by the honours program manager.

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<td>Elective 1</td>
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<td>Elective 2</td>
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Semester 2

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</thead>
<tbody>
<tr>
<td>Hit4000</td>
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</tr>
<tr>
<td>Elective 3</td>
<td></td>
</tr>
</tbody>
</table>

Entry requirements

A Bachelors (pass) degree from Swinburne University of Technology or another recognised university (or equivalent). 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.

Application procedure

The application form is available for downloading at www.it.swin.edu.au/centres/honours.htm
School of Social and Behavioural Sciences

The School of Social and Behavioural Sciences is grouped into five discipline areas: Media and Communications; Psychology; Politics; Sociology; and Philosophy and Cultural Inquiry.

Swinburne Arts, Humanities and Social Science graduates are well equipped to find work in areas where employers place a high premium on generic and problem solving skills and independent ‘critical thinking’.

The experience of past students has been that, even if they are not always directly employed in a related area of study (such as media, psychology or social policy), the knowledge acquired during a course has had many useful applications for them, both professionally and personally.

Importantly the Arts, Humanities and Social Sciences contribute to an understanding of the world, society, the individual and their place in it. Students with such an understanding can add more to the ‘bottom line’ by contributing social and sustainability perspectives.

Further information

Contact the School of Social and Behavioural Sciences on +61 3 9214 5209
Email: sbsadmin@swin.edu.au
Website: www.swinburne.edu.au/sbs/

N055 Bachelor of Arts

In the Bachelor of Arts the emphasis is on the study of culture with a view to acquiring a better understanding of the conceptual influences which have shaped our contemporary world view, so as to enable us to respond more insightfully and effectively to the challenges that currently confront us in the course of our personal and professional lives. To advance this goal, studies in the Bachelor of Arts draw on themes from philosophy and the history of ideas, from literature and from classical and popular culture, including the ‘new media’.

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.

Campus

Hawthorn

Career opportunities

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.

Structure

The Bachelor of Arts is a three year full-time or six year part-time course requiring the successful completion of 24 subjects (300 credit points). All subjects in the degree are normally worth 12.5 credit points. A full-time load consists of eight subjects per year (four per semester) and four subjects per year (two per semester) is a part-time load. Students are required to complete a mandatory subject, and a combination of majors, minors and electives.

Mandatory subject

HMA104 Statistics and Research Methods B, Or
HMA103 Statistics and Research Methods A (for students completing a Psychology major or minor)

Major

A major is an approved grouping of eight subjects in an area of study. It consists of two Stage 1 subjects (eg: HAH100) and six post-Stage 1 subjects. At least three subjects must be taken at Stage 3 (eg: HAH310). The remaining post-Stage 1 subjects may be taken at Stage 2 or 3. Students wishing to undertake a Psychology major are required to complete ten subjects (refer to the relevant area of study section). Students who wish to complete a Business major must complete an approved grouping of seven subjects with at least two at Stage 3.

Minor

A minor is an approved grouping of five subjects, consisting of one subject at Stage 1 and four post-Stage 1 subjects and at least one of which is normally at Stage 3. Students wishing to undertake a Psychology minor are required to complete six subjects (refer to relevant area of study section).

Elective

An elective is a subject that is not taken as part of a major or minor. Electives are chosen from any of the subjects offered by the School of Social & Behavioural Sciences, and subject to approval, from other Schools.

In addition to completing the mandatory subject, students must choose one of the following options:

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

NOTE: At least one major MUST be Arts specific. Students may complete a major or a minor in Business, but not both.

Course requirements and restrictions

The following course requirements and restrictions apply:

- Students must complete a minimum of six Stage 1 Arts/Social Science subjects.
- A maximum of ten Stage 1 subjects can be completed in the degree.
- Students must complete a minimum of six Stage 3 subjects.
- A subject can only be counted once as part of a major, minor or elective.
- Students are not permitted to enrol in subjects where they have completed other subjects that are deemed to be equivalent, e.g. dual coded subjects HAH210/HAH310.
- Equivalent subjects cannot be used for credit at a level other than that at which the student has enrolled, e.g. if a student has enrolled in a subject coded as a Stage 2 subject (HAH210), it cannot be counted as a Stage 3 subject.
- Students commencing in 2003 are permitted to complete one Business major or one Business minor as part of their course.
- A maximum of seven Business subjects for a major may be completed.

NOTE: Students completing either a Business major or minor are not permitted to complete any further subjects outside the School of Social and Behavioural Sciences.

- Students, other than those completing a Business major, may complete a maximum of five subjects (excluding HMA103, HMA104, HMA278 and HMA279) outside the School of Social and Behavioural Sciences.

Further information

Contact the School of Social and Behavioural Sciences on +61 3 9214 5209
Email: sbsadmin@swin.edu.au
Website: www.swinburne.edu.au/sbs/
The study of the political economy of media and telecommunications: an exploration of the various ways in which we make sense of film and media materials (TV, radio, print, new media). The study of the political economy of media and telecommunications: an exploration of the various ways in which we make sense of film and media materials (TV, radio, print, new media). The study of the political economy of media and telecommunications: an exploration of the various ways in which we make sense of film and media materials (TV, radio, print, new media).

Prerequisites/Corequisites
Students must ensure they have met prerequisite/corequisite requirements listed for each subject before enrolling.

Majors/Minors
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 and/or minors from Arts, Social Science or Business areas of study.

Arts majors/minors:
- Australian Studies
- Cultural Studies
- Electronic Society
- Italian Studies
- Japanese
- Literature
- Media Studies
- Philosophy & Cultural Inquiry

Social Science majors/minors:
- Politics
- Psychology
- Sociology

Business majors/minors:
- Accounting
- Asian Business*
- Business Law*
- Economics*
- eMarketing*
- European Business*
- Finance
- Human Resource Management/Organisation Behaviour
- Information Systems
- International Business
- Management
- Manufacturing Management
- Marketing
* Available as a minor only.

Please refer to Bachelor of Business for details.

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification. 2004 VCE prerequisites: Units 3 and 4 -- a study score of at least 25 in English (any). 2003 Final Clearly-In ENTER: 86.85

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34321(F/T), 34323 (Int. Fee)

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

N053 Bachelor of Arts (Media and Communications)

Media Studies can incorporate a wide range of academic and production subjects. At Swinburne, they fall into three overlapping areas:
- The maximum number of subjects that may be completed for the degree course is twenty-six.
- Hands-on subjects: an emphasis on publishing, radio production and workplace experience (these are available only after successful completion of the appropriate prerequisites).

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 as well as a specialised appreciation of how it operates.

Aims & Objectives
This course will enable students to understand how the media works, to be able to recognise the place it occupies within the broader social context, to be skilled at thinking for themselves, and to 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.

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 subjects (300 credit points). All subjects in the degree are normally worth 12.5 credit points. A full-time load consists of eight subjects per year (four per semester) and four subjects (two per semester) is a part-time load. Students are required to complete the Media and Communications component, and a combination of major/minor and electives.

Mandatory subject
HMA104 Statistics and Research Methods B, Or
HMA103 Statistics and Research Methods A (for students completing a Psychology major or minor)

The Media and Communications component is an approved grouping of ten Media subjects. It consists of two Stage 1 subjects and eight post-Stage 1 subjects. At least four subjects must be taken at Stage 3.

Major
A major is an approved grouping of eight subjects in an area of study. It consists of two Stage 1 subjects (eg: HAML104) and six post-Stage 1 subjects. At least three subjects must be taken at Stage 3 (eg: HAML312). The remaining post-Stage 1 subjects may be taken at Stage 2 or 3. Students wishing to undertake a Psychology major are required to complete ten subjects (refer to the relevant area of study section). Students who wish to complete a Business major must complete an approved grouping of seven subjects with at least two at Stage 3.

Minor
A minor is an approved grouping of five subjects, consisting of one subject at Stage 1 and four post-Stage 1 subjects, at least one of which is normally at Stage 3.

Elective
An elective is a subject that is not taken as part of a major or minor. Electives are chosen from any of the subjects offered by the School of Social & Behavioural Sciences and, subject to approval, from other Schools.

In addition to completing the mandatory subject and Media and Communications component, students must choose one of the following options:

Option 1 – One major and five electives
Option 2 – Two minors and three electives

Note: Students may complete a major or minor in Business, but not both.

Course requirements and restrictions
The following course requirements and restrictions apply:
The Media and Communications component consists of the following subjects:

**Course subjects**
- Marketing
- Manufacturing Management
- Management
- International Business
- Human Resource Management/Organisation Behaviour
- Finance
- European Business
- eMarketing
- Economics
- Business Law
- Asian Business
- Accounting
- Sociology
- Philosophy & Cultural Inquiry
- Japanese Studies
- Literature
- Politics
- Psychology
- Electronic Society
- Cultural Studies

**Majors/Minors**
To qualify for the award of the Bachelor of Arts (Media and Communications) degree, students must complete the Media and Communication component subjects, a mandatory subject, a major or two minors, and electives.

**Arts majors/minors**
- Australian Studies
- Cultural Studies
- Electronic Society
- Italian Studies
- Japanese
- Literature
- Philosophy & Cultural Inquiry

**Social Science majors/minors**
- Politics
- Psychology
- Sociology

**Business majors/minors**
- Accounting
- Asian Business
- Business Law
- Economics
- eMarketing
- European Business
- Finance
- Human Resource Management/Organisation Behaviour
- Information Systems
- International Business
- Management
- Manufacturing Management
- Marketing

# Available as a minor only. Refer to Bachelor of Business for details

**Stage 1**
- HALM104 Media Literature Film: Texts and Contexts *
- HAM105 The Media in Australia *
- HAM113 Professional Communication Practice

And eight of the following subjects with at least four subjects at Stage 3.

**Stage 2**
- HALM200 Reading, Writing and Criticism
- HALM201 Media Voices, Media Style: The Process of Journalism
- HALM206 Issues in the Electronic Media
- HAM210 Popular Culture
- HAM211 New Media: The Telecommunications Revolution
- HASM201 eSociety: Sociology of the Electronic Age

The following subject may be taken at Stage 2 or Stage 3, but not both:
- HAPM228/HAPM328 Making News and Making Policy: The Media and Politics

**Stage 3**
- HALM312 Cinema Studies
- HALM316 Electronic Writing
- HALM317 Media/Literature Project
- HAM313 Radio Production and Criticism A
- HAM314 Professional Attachment Program (this subject is available to selected students only)
- HAM315 Information Society: A Global Perspective
- HAM316 Radio Production and Criticism B

* These subjects must be completed as part of the Media and Communications component unless the student is also completing an electronic society or literature major.

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

- 2004 VCE prerequisites: Units 3 and 4 – a study score of at least 25 in English (any).
- 2003 Final Clearly-In ENTER: 90.70

**Application procedure**
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34071(F/T), 34073 (Int. Fee)

*Note: Applicants wishing to study Media Studies should consider listing as preferences both specialist and general degree programs offering Media Studies as a major at Swinburne eg. Bachelor of Arts, Bachelor of Social Science. For further information, visit the VTAC website at: www.vtac.edu.au

**N051 Bachelor of Arts (Psychology and Psychophysiology)**

This course is unique to Swinburne and offers students an undergraduate degree with majors in Psychology and Psychophysiology.

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 physiological responses to stress, neuropsychological processes in sleep, dreaming, memory and cognition, and brain disorders. Psychophysiology also looks at the use of computers and instrumentation relevant to 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 have a unique blend of skills. The combination of psychological knowledge with understanding of the underlying physiological processes...
associated with stress, memory and psychiatric disorders, for example, gives entry to a wide range of jobs. Areas of employment include community health services as well as clinics and institutions involved in the assessment and management of neurological and psychophysiological problems. Graduates can also take up careers in sports psychology, ergonomics and areas of clinical psychology concerned with the physiological effects of emotional and mental states.

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.

Structure
Students complete a three year course of study in Psychology together with a three year program in Psychophysiology involving studies in Psychophysiology, Biology, Neuroendocrinology and the Neurophysiology of Mental Disorders.

Year 1
Semester 1
HET102 Introductory Physiology
HAY100 Psychology 100
HMA103 Statistics and Research Methods A
Elective (chosen from Arts, Social Science or Science subjects)
Semester 2
HET133 Human Physiology
HET148 Technology and Data Acquisition
HAY101 Psychology 101
Elective (chosen from Arts, Social Science or Science subjects)

Year 2
Semester 1
HET227 Neuropsychology
HET219 Neurological Monitoring
HMA278 Design and Measurement 2
HAY206 Developmental Psychology
Semester 2
HET226 Sensory Systems
HET231 Perception and Motor Systems
HAY205 Cognition and Human Performance
HMA279 Design and Measurement 3
Year 3
Semester 1
HETS27 Sleep & Attention
HETS26 Higher Cortical Function
HAY308 Psychology of Personality
HAY309 Psychological Measurement
Semester 2
HET331 Psychophysiology
HET320 Psychophysiology Project
HAY307 Social Psychology
HAY321 Abnormal Psychology

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

2004 VCE prerequisites: Units 3 and 4 – a study score of at least 25 in English (any) and in one of mathematical methods, specialist mathematics, further mathematics, physics, chemistry, biology or psychology.

2003 Final Clearly-In ENTER: 86.20

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34461 (HECS) 34463 (Int. Fee)

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

ARTS MAJORS/MINORS

Australian Studies
Australian Studies examines Australian society and its cultures from several different perspectives. It is an interdisciplinary major with core subjects 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 enthusiasms as they develop over the three years.

Career opportunities
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.

Structure
An Australian Studies major must include two Stage 1 subjects, and six post-Stage 1 subjects. At least three subjects must be taken at Stage 3. The remaining post-Stage 1 subjects may be taken at Stage 2 or 3.

Subjects available in the Australian Studies major or minor are as follows:

Stage 1
HAM105 The Media in Australia
HAP100 Australian Politics
HASP101 Sociology 1B (Social Institutions and Social Change)

Stage 2
HAL209 Australian Writing and Cultural Change
HAM210 Popular Culture
HASP202 Social Theory

The following subjects may be taken at Stage 2 or Stage 3 but not both:
HAM105/HAM107/HAM209 Formal Logic
HAM201/HAM202/HAM301/HAM302 Writing and Cultural Change

Stage 3
HALM312 Cinema Studies
HASP304 Sociology and Social Policy
HASP306 Quantitative Research Methods
HASP307 Qualitative Research Methods

# Compulsory subjects in the major.

Cultural Studies
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 subjects from Philosophy & Cultural Inquiry and the choice of a diversity of subjects 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 subjects pertaining to practical cultural issues.
Subjects comprising the major come from Philosophy & Cultural Inquiry, Media Studies, Literature, Politics, and Psychology. 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.

Career opportunities

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.

Structure

A Cultural Studies major must include two Stage 1 subjects, and six post Stage 1 subjects. At least three subjects must be taken at Stage 3. The remaining post Stage 1 subjects may be taken at Stage 2 or 3.

Subjects available in the Cultural Studies major or minor are as follows:

Stage 1

- HAH100 Introduction to Philosophy
- HAH101 History of Ideas
- HALM104 Media Literature Film: Texts and Contexts

Stage 2

- HAL209 Cultural Writing and Cultural Change
- HALM200 Reading, Writing and Criticism
- HAM210 Popular Culture
- HASM201 eSociety: Sociology of the Electronic Age
- HASP202 Social Theory

The following subjects may be taken as Stage 2 or Stage 3 subjects, but not both:

- HAH209/HAH309 Philosophy of Culture
- HAH210/HAH310 Philosophy, Media, Culture
- HAH223/HAH323 Environmental Philosophy
- HAH224/HAH324 Natural Philosophy and The Sciences
- HAH225/HAH325 Philosophy, Politics, and Society
- HAH226/HAH326 Knowledge, Reason, and Society: Contemporary Issues and Perspectives

Stage 3

- HAL309 Renaissance Literary Culture
- HALM312 Cinema Studies
- HALM316 Electronic Writing
- HAY310 Social and Personal Relationships (cannot be undertaken if HAY307 has been completed)

# Compulsory subjects in the major.

Electronic Society

We are living in a networked society: electronic telecommunications 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 virtual congregations, so-called ‘virtual communities’ that have no unified, geographical location, yet cohere in the ‘cyberspace’ of the electronic network. Changing notions 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.

Career opportunities

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.

Structure

A major in Electronic Society consists of two Stage 1 subjects and six post Stage 1 subjects. Three subjects must be taken at Stage 3. The remaining post Stage 1 subjects may be taken at Stage 2 or 3.

Subjects available in the Electronic Society major or minor are as follows:

Stage 1

- HAM105 The Media in Australia
- HAS100 Sociology 1A

Stage 2

- HAM206 Issues in Electronic Media
- HAM211 New Media: The Telecommunications Revolution
- HAY202 Human Information Processing (cannot be undertaken if HAY206 has been completed)

The following subjects may be taken at Stage 2 or Stage 3 but not both:

- HAH210/HAH310 Philosophy, Media, Culture
- HAH225/HAH325 Philosophy, Politics, and Society
- HAPM226/HAPM326 Making News and Making Policy
- HAP228/HAP328 Globalisation: Transformations in World Politics, Economy and Culture

Stage 3

- HAM315 Information Society: A Global Perspective

Italian Studies

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, commercial and political 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 or 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.

Career opportunities

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, management, public relations, travel and tourism, social work, journalism and teaching.

Structure

The Italian major is sequential in nature. Students must successfully complete all language subjects in one stage before progressing to the next stage. Students are
required to complete 8 subjects 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 HAA284 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 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 Subjects**
- HAA119 Post-War Italy
- HAA289 Comparative European Politics
- HAA377 International Business in the Italian Context

# Subjects 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 subjects listed in the major.

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

**Japanese**

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

**Career opportunities**

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

**Structure**

The Japanese major is sequential in nature. Students must successfully complete all subjects 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 subjects 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.

The Japanese major consists of the following:

**Beginners Stream**

**Stage 1**
- HAJ107 Introductory Japanese 1A#
- HAJ108 Written Japanese 1B#
- HAJ109 Spoken Japanese 1B#

**Stage 2**
- HAJ215 Intermediate Japanese 2A#
- HAJ217 Written Japanese 2B#
- HAJ218 Spoken Japanese 2B#

**Stage 3**
- HAJ318 Written Japanese 3A#
- HAJ319 Spoken Japanese 3A#
- HAJ323 Written Japanese 3B
- HAJ324 Spoken Japanese 3B

**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 2B#
- HAJ233 Advanced Written Japanese 2B#
- HAJ234 Advanced Spoken Japanese 3B#

**Stage 3**
- HAJ331 Advanced Written Business Japanese#
- HAJ332 Advanced Spoken Business Japanese#
- HAJ333 Advanced Business Readings and Communications

**Cultural Subjects**
- HAJ102 Introduction to Japan - A Cultural Overview
- HAJ202 Communications in Japanese

# Subjects required for a Japanese major in either the Beginners or Advanced stream. A minor in Japanese will consist of six Stage 1 and Stage 2 subjects listed in the major.

Please note: As students are not required to complete a Stage 3 subject in the Japanese minor and only two Stage 3 subjects for a major, students taking this minor must ensure they complete a minimum of six Stage 3 subjects in the degree to satisfy course requirements.
Literature

Traditionally, Literature has involved the close reading and evaluation of valued writings. But it also involves closer attention to what writing is, and how it comes to be valued. Literary works do not exist in a vacuum, but rather are produced and understood in the context of a literary culture - a collective body of assumptions about the world, the written word, creativity, authority and representation. An understanding of the concept of literary culture is central to Literature at Swinburne and to any informed understanding about the current state of art and communication in the Age of Information. One of the most fascinating challenges facing literary studies is the shift from a culture based on, and formed by the book, to a ‘wired’ society increasingly dominated by electronic media, where an encyclopedia can be stored on a compact disk. Far from being obsolete in this new information age, the study of literary culture is central to an understanding of the transition from the page to the screen. Literature at Swinburne is in touch with these developments, and provides useful links with subjects such as Media Studies. The study of Literature is principally concerned with how we relate to and make sense of the world through writing. The Literature major at Swinburne is designed to provide students with the opportunity to consider literary works from a variety of historical periods, ranging from the Renaissance to the Cyberculture of the twentieth century. Students also consider issues such as the changing nature of literary culture as we move into an ‘Age of Information’.

Career opportunities

A Literature major provides students with a range of skills and experiences relevant to any profession that requires the ability to construct and evaluate arguments clearly, and to think laterally, flexibly and independently. Apart from careers in journalism, advertising and literature, Literature also equips graduates to take up positions in the social services, where sensitivities to cultural difference and the ability to communicate clearly and effectively are paramount. There is also an emerging market in creative writing for interactive multimedia, and software developers are increasingly on the lookout for writers with both literary skills and familiarity with the new media. The Literature major provides students with the opportunity to gain an introductory grounding in the theory and practice of new writing technologies, such as hypertext.

Structure

A Literature major must include two Stage 1 subjects, and six post Stage 1 subjects. At least three subjects must be taken at Stage 3. The remaining post Stage 1 subjects may be taken at Stage 2 or 3.

Subjects available in the Literature major or minor are as follows:

**Stage 1**

- HALM104 Media Literature Film: Texts and Contexts
- HAL103 Writing Fiction

**Stage 2**

- HAL209 Australian Writing and Cultural Change
- HALM200 Reading, Writing and Criticism
- HALM201 Media Voices, Media Style: The Process of Journalism
- HALM206 Issues in Electronic Media

**Stage 3**

- HAL309 Renaissance Literary Culture
- HALM312 Cinema Studies
- HALM315 Electronic Writing
- HALM317 Media/Literature Project

Media Studies

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 media and radio) and who share the belief that the student best equipped to face the vagaries of the workplace is the one who has a general as well as a specialised appreciation of how it operates. 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 subjects. 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 subjects in which the emphasis is on publishing, radio production and workplace experience** (these are available only after successful completion of the appropriate prerequisites).

Career opportunities

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 professionally and personally.

Structure

A Media Studies major must include two Stage 1 subjects and six post Stage 1 subjects. At least three subjects must be taken at Stage 3. The remaining post Stage 1 subjects may be taken at Stage 2 or Stage 3.

Subjects offered in the Media Studies major or minor are as follows:

**Stage 1**

- HALM104 Media Literature Film: Texts and Contexts*
- HAM105 The Media in Australia*
- HAM113 Professional Communications Practice

* Subjects must be completed as part of Media Studies major unless the student is also completing an Electronic Society or Literature major.

**Stage 2**

- HALM200 Reading, Writing and Criticism
- HALM201 Media Voices, Media Style: The Process of Journalism
- HALM206 Issues in Electronic Media
- HAM210 Popular Culture
- HAM211 New Media: The Telecommunications Revolution
- HASM201 eSociety: Sociology of the Electronic Age

The following subject 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**

- HALM312 Cinema Studies
- HALM315 Electronic Writing
- HAM105 The Media in Australia
- HAM113 Professional Communications Practice
- HAM313 Radio Production and Criticism A
- HAM315 Information Society: A Global Perspective

**Philosophy and Cultural Inquiry**

The subjects 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...
students to 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 School of Social and Behavioural Sciences and across the University.

### Career opportunities

Given 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 their professional as well as their personal development.

### Structure

A Philosophy and Cultural Inquiry major must include two Stage 1 subjects, and six post Stage 1 subjects. At least three subjects must be taken at Stage 3. The remaining post Stage 1 subjects may be taken at Stage 2 or 3.

Subjects available in the Philosophy & Cultural Inquiry major or minor are as follows:

**Stage 1**

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject 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 subjects can be taken as Stage 2 or Stage 3, but not both:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAH209/HAH309</td>
<td>Philosophy of Culture</td>
</tr>
<tr>
<td>HAH210/HAH310</td>
<td>Philosophy, Media, Culture</td>
</tr>
<tr>
<td>HAH219/HAH319</td>
<td>Philosophical Psychology</td>
</tr>
<tr>
<td>HAH222/HAH322</td>
<td>Practical Ethics</td>
</tr>
<tr>
<td>HAH223/HAH323</td>
<td>Environmental Philosophy</td>
</tr>
<tr>
<td>HAH224/HAH324</td>
<td>Natural Philosophy and the Sciences</td>
</tr>
<tr>
<td>HAH225/HAH325</td>
<td>Philosophy, Politics, and Society</td>
</tr>
<tr>
<td>HAH226/HAH326</td>
<td>Knowledge Reason, and Society: Contemporary Issues and Perspectives</td>
</tr>
</tbody>
</table>

Note: All post-Stage 1 Philosophy subjects may be studied as either Stage 2 or Stage 3 subjects. Students must study at least three subjects at Stage 3 to meet the requirements of the major.

### N056 Bachelor of Social Science

Student's of Swinburne’s Social Science degree acquire knowledge and skills in a variety of study areas which improve their ability to explain human behaviour and to devise policies to ameliorate social conditions. They also acquire a range of analytical skills, learning to combine knowledge with reason. The course nourishes their intellectual interests and develops their practical skills, fostering the lifelong process of personal development. Course activities also develop generic skills such as public speaking, interviewing, planning group projects and organising seminars. These activities and skills help prepare students for management and leadership positions. Course activities also develop skills such as independent thinking, conceptual analysis and theory development. Students learn to write clearly and effectively, plan essays and research projects, attend to detail, and manage their time.

### Campus

Hawthorn

### Career opportunities

Students learn to apply their knowledge to practical problems and this, together with their mastery of generic skills, makes them valuable to employers. Swinburne Social Science graduates are well equipped to find work in:

- Policy analysis and development
- Research
- Community development
- Administration
- Public relations
- Market research

And, with further study:

- Psychology
- Technical communication
- Social work
- Librarianship
- Teaching

### 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.

### Structure

The Bachelor of Social Science is a three year full-time or six year part-time course requiring the successful completion of 24 subjects (300 credit points). All subjects in the degree are normally worth 12.5 credit points. A full-time load consists of eight subjects per year (four per semester) and four subjects per year (two per semester) is a part-time load. Students are required to complete the mandatory subject, two majors, a minor and/or electives.

#### Mandatory subject

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMA104</td>
<td>Statistics and Research Methods B, Or</td>
</tr>
<tr>
<td>HMA103</td>
<td>Statistics and Research Methods A (for students completing a Psychology major or minor)</td>
</tr>
</tbody>
</table>

#### Major

A major is an approved grouping of eight subjects in an area of study. It consists of two Stage 1 subjects (eg: HAS100 and HAS101) and six post-Stage 1 subjects. At least three subjects must be taken at Stage 3 (eg: HAS304, HAS318 and HAS303). The remaining post-Stage 1 subjects may be taken at Stage 2 or 3. Students wishing to undertake a Psychology major are required to complete ten subjects (refer to the relevant area-of-study section). Students who wish to complete a Business major must complete an approved grouping of seven subjects with at least two at Stage 3.

#### Minor

A minor is an approved grouping of five subjects, in an area of study. It consists of one subject at Stage 1 and four post-Stage 1 subjects and at least one of which is normally at Stage 3.

#### Elective

An elective is a subject that is not taken as part of a major or minor. Electives are chosen from any of the subjects offered by the School of Social & Behavioural Sciences, and subject to approval, from other Schools.

In addition to completing the mandatory subject, students must choose one of the following options:

- Option 1 – Two majors and seven electives
- Option 2 – Two majors, one minor, and two electives
- Option 3 – One major, two minors, and five electives

**NOTE:** At least one major MUST be Social Science specific. The other major (or minor(s)) may be from the Bachelor of Arts area of study. Students may complete a major or a minor in Business, but not both.

### Course requirements and restrictions

The following course requirements and restrictions apply:

- Students must complete a minimum of six Stage 1 Social Science/Arts subjects.
A maximum of ten Stage 1 subjects can be completed in the degree.

- Students must complete a minimum of six Stage 3 subjects.
- A subject can only be counted once as part of a major, minor or elective.
- Students are not permitted to enrol in subjects where they have completed other subjects that are deemed to be equivalent, e.g. dual coded subjects such as HAP221/HAP321.
- Equivalent subjects cannot be used for credit at a level other than that for which the student has enrolled, e.g. if a subject has been enrolled in a subject coded as a Stage 2 subject (HAP221), it cannot be counted as a Stage 3 subject (HAP321).
- Students commencing in 2003 are permitted to complete one Business major or one Business minor as part of their course structure.
- A maximum of seven Business subjects for a major may be completed.

NOTE: Students completing either a Business major or minor are not permitted to complete any further subjects outside the School of Social and Behavioural Sciences.

- Students, other than those completing a Business major, may complete a maximum of five subjects (excluding HMA103, HMA104, HMA278 and HMA279) outside the School of Social and Behavioural Sciences.
- The minimum number of subjects that must be completed for the degree course is twenty-four.
- The maximum number of subjects that may be completed for the degree course is twenty-six.

**Prerequisites/Corequisites**

Students must ensure they have met prerequisite/corequisite requirements listed for each subject before enrolling.

**Majors/Minors**

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 and/or minors from Arts, Social Science or Business areas of study.

- **Social Science majors/minors**: Politics, Psychology, Sociology

  Students may choose a second major and minor from the Social Science, Arts or Business areas of study.

- **Arts majors/minors**: Australian Studies, Cultural Studies, Electronic Society, Italian Studies, Japanese, Literature, Media Studies, Philosophy & Cultural Inquiry


  # Available as a minor only.

**Entry requirements**

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

2004 VCE prerequisites: Units 3 and 4 – a study score of at least 25 in English (any).

2003 Final Clearly-In ENTER: 81.65

**Application procedure**

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34221 (HECS), 34223 (Int. Fee)

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

**NO63 Bachelor of Social Science (Psychology)**

Students of Swinburne’s Social Science degree acquire knowledge and skills in a variety of study areas which improve their ability to explain human behaviour and to devise policies to ameliorate social conditions. They also acquire a range of ‘analytical skills’ – skills which are a key part of the lifelong process of personal development and which are highly valued by employers. Course activities develop skills such as public speaking, group discussions, interviewing, planning group projects and organising seminars. These activities and skills help prepare students for management and leadership positions. Course activities also develop skills such as independent thinking, conceptual analysis, theory development, writing clearly and effectively, planning essays and research projects, attention to detail and time management.

Social Science students learn to use ideas and information stored in libraries and electronic databases, acquire computer skills, carry out research projects and evaluate and develop policies. They develop a strong sense of personal integrity and an awareness of the role of ethics in private and public life, and their university experience fosters motivation and adaptability.

All of these generic skills enhance students’ abilities to solve problems and to make decisions, irrespective of their specific field of study. While many degree courses provide some chance to develop generic skills, a Social Science degree usually provides particular opportunities for students to further their development in these areas, especially in research and policy development. Consequently Swinburne Social Science graduates are well equipped to find work in areas where employers put a high premium on generic skills. These areas include:

- Policy analysis and development
- Research
- Community development
- Administration
- Public relations
- Publishing
- Media

**Campus**

Hawthorn

**Career opportunities**

Graduates in psychology are highly sought after by a wide range of organisations to work in human services as research officers, human resource managers, marketing and advertising personnel. 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.

**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 subjects (300 credit points). All subjects in the degree are normally worth 12.5 credit points. A full-time
load consists of eight subjects per year (four per semester) and four subjects per year (two per semester) is a part-time load. Students are required to complete the mandatory subject, the Psychology component and a combination of major/minors and electives.

Mandatory subject
HMA103 Statistics and Research Methods A

Psychology component
The Psychology component is an approved grouping of twelve subjects. It consists of ten mandatory subjects and two approved electives.

Major
A major is an approved grouping of eight subjects in an area of study. It consists of two Stage 1 subjects (eg: HAS100) and six post-Stage 1 subjects. At least three subjects must be taken at Stage 3 (eg: HAS303). The remaining post-Stage 1 subjects may be taken at Stage 2 or 3. Students who wish to complete a Business major must complete an approved grouping of seven subjects with at least two at Stage 3.

Minor
A minor is an approved grouping of five subjects, consisting of one subject at Stage 1 and four post-Stage 1 subjects, at least one of which is normally at Stage 3.

Elective
An elective is a subject that is not taken as part of a major or minor. Electives are chosen from any of the subjects offered by the School of Social & Behavioural Sciences, and subject to approval, from other Schools. In addition to completing the mandatory subject and Psychology component, students must choose one of the following options:

Option 1 – One major and three electives
Option 2 – Two minors and one elective

Note: Students may complete a major or minor in Business, but not both.

Course requirements and restrictions
The following course requirements and restrictions apply:

- Students must complete a minimum of six Stage 1 Social Science/Arts subjects.
- A maximum of ten Stage 1 subjects can be completed in the degree.
- Students must complete a minimum of six Stage 3 subjects.
- A subject can only be counted once as part of a major, minor or elective.
- Students are not permitted to enrol in subjects where they have completed other subjects that are deemed to be equivalent, e.g. dual coded subjects HAP221/HAP222.
- Equivalent subjects 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 subject coded as a Stage 2 subject (eg HAP221), it cannot be counted as a Stage 3 subject (eg HAP321).
- Students commencing in 2003 are permitted to complete one Business major or one Business minor as part of their course. A maximum of seven Business subjects for a major may be completed.

Note: Students completing either a Business major or minor are not permitted to complete any further subjects outside the School of Social and Behavioural Sciences.

- Students, other than those completing a Business major, may complete a maximum of five subjects (excluding HMA103, HMA104, HMA278 and HMA279) outside the School of Social and Behavioural Sciences.
- The maximum number of subjects that may be completed for the degree course is twenty-six.

Prerequisites/Corequisites
Students must ensure they have met prerequisite/corequisite requirements listed for each subject before enrolling.

Majors/Minors
To qualify for the award of the Bachelor of Social Science (Psychology) degree, students must complete a Psychology component and one major or minor, 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 & Cultural Inquiry

Please refer to Bachelor of Arts for details.

Business majors/minors
- Accounting
- Asian Business#
- Business Law#
- Economics#
- eMarketing#
- European Business#
- Finance
- Human Resource Management/Organisation Behaviour
- Information Systems
- International Business
- Management
- Manufacturing Management
- Marketing

# Available as a minor only. Please refer to Bachelor of Business for details.

Course subjects
The Psychology component of the course consists of the following subjects:

Stage 1
HAY100 Psychology 100
HAY101 Psychology 101

Stage 2
HAY205 Cognition and Human Performance
HAY206 Developmental Psychology
HMA278 Design and Measurement 2
HMA279 Design and Measurement 3

Stage 3
HAY307 Social Psychology
HAY308 Psychology of Personality
HAY309 Psychological Measurement
HAY321 Abnormal Psychology

And two of the following subjects:
HAH103 Critical Thinking
HAH219/HAH319 Philosophical Psychology
HAS296 The Family, Sex and Society
HAS298 Sociology of Deviance and Social Control
HASP307 Qualitative Research Methods

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2004 VCE prerequisites: Units 3 and 4 – a study score of at least 25 in English (any). 2003 Round 1 Clear In ENTER: 86.10
HAP231/HAP331 Dictators, Democrats and Dynasties: Comparative Politics
HAPM226/HAPM326 Making News and Making Policy: The Media and Politics
HASP200/HASP300 Public Policy in Australia

Swinburne University of Technology | Undergraduate Course Handbook 2004

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34341/F/T, 34343 (Int. Fee)
Note: Applicants wishing to study Psychology should consider listing as preferences both specialist and general degree programs offering Psychology as a major. These include the Bachelor of Social Science, the Bachelor of Arts, the Bachelor of Science (Psychology/Biochemistry), and the Bachelor of Arts (Psychology/Physiology).
For further information, visit the VTAC website at: www.vtac.edu.au

SOCIAL SCIENCE MAJORS/MINORS

Politics
Politics is the study of the institutions of government, of the power of government, and of how it is used and abused. It is concerned with the different types of government, such as dictatorship and democracy, monarchy and republic, with how and why governments make the decisions they do, and with the consequences these decisions have. It is also concerned with the influence that social movements, political parties, and interest groups have on the decision making process. An understanding of politics is important, as government decisions affect all members of society.
Whether it is a matter of setting economic directions, addressing the issues of a multicultural society, or dealing with questions of war and peace, the political process decides who wins and who loses. Because governments impact on so many areas of our lives, an understanding of politics is essential in many professions – in business, in the media, in law, and in human services.
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.
Some students majoring in Politics will have the opportunity to gain work experience through the Politics internship program.

Career opportunities
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.

Structure
A Politics major must include two Stage 1 subjects, and six post Stage 1 subjects. At least three subjects must be taken at Stage 3. The remaining post Stage 1 subjects may be taken at Stage 2 or 3.
Subjects available in the Politics major or minor are as follows:

Stage 1
HAP100 Australian Politics
HAP117 International Politics

Stage 2
HASP202 Social Theory
HASP221/HASP231 Modern Australia
HAP226/HAP238 Globalisation: Transformations in World Politics, Economy and Culture
HAP229/HAP239 Politics in Pacific Asia
HAP231/HAP331 Dictators, Democrats and Dynasties: Comparative Politics
HAPM226/HASP326 Making News and Making Policy: The Media and Politics
HASP200/HASP300 Public Policy in Australia
HASP201/HASP301 Work in Australia

Stage 3
HASP303 Research Report
HASP304 Sociology and Social Policy
HASP306 Quantitative Research Methods
HASP307 Qualitative Research Methods
HASP332 Internship in Political Research (25 credit points – subject convenor’s approval required prior to enrolment)

Psychology
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 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.

Career opportunities
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.

Structure
The ten subjects listed below must be completed to satisfy the requirements of a Psychology major. In addition, students are required to complete the mandatory subject HMA103.
It should be noted that the undergraduate psychology major is sequential in nature; completion of the prescribed subjects 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
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

A Psychology minor consists of the following six subjects:
HAY100 Psychology 100
HAY101 Psychology 101
HAY206 Developmental Psychology
HMA278 Design and Measurement 2
HMA279 Design and Measurement 3
HAY307 Social Psychology
HAY321 Abnormal Psychology
Sociology

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. It also provides an understanding of research design and research skills. Students learn about different ways of finding out about aspects of the social world, ranging from participant observation and focus groups through 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 work experience through the Sociology internship program.

Career opportunities

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.

Structure

A Sociology major must include two Stage 1 subjects, and six post Stage 1 subjects. At least three subjects must be taken at Stage 3. The remaining post Stage 1 subjects may be taken at either Stage 2 or 3. Students majoring in Sociology must take either HASP306 or HASP307 (they may take both if they want). Subjects available in the Sociology major or minor are as follows:

Stage 1

- HAS100 Sociology 1A (Introductory Sociology)
- HAS101 Sociology 1B (Social Institutions and Social Change)

Stage 2

- HAS296 The Family, Sex and Society
- HAS298 Sociology of Deviance and Social Control
- HASM201 eSociety: Sociology of the Electronic Age
- HASP202 Social Theory

The following subjects 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 Genome: Biotechnology and Society
- HAS316 Migration and Ethnicity
- HASP304 Sociology and Social Policy
- HASP306 Quantitative Research Methods
- HASP307 Qualitative Research Methods
- HASP303 Research Report
- HASP308 Internship in Social Research (25 credit points - Subject Convenor’s approval required prior to enrolment)

# Students undertaking a Sociology major must complete at least one of these subjects.

HONOURS YEAR

N052 Bachelor of Arts (Honours)

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.

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 subjects, 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:

- First Class Honours (H1) 85%-100%
- Second Class Honours Division A (H2A) 75%-84%
- Second Class Honours Division B (H2B) 65%-74%
- Third Class Honours (H3) 50%-64%

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)

Languages strand

Available to students who have majored in Italian or Japanese.

- HAA440 Languages Seminar A (Italian)
HAA441  Languages Seminar B (Italian)
HAA442  Honours Thesis A (Italian)
HAA443  Honours Thesis B (Italian)
HAJ440  Languages Seminar A (Japanese)
HAJ441  Languages Seminar B (Japanese)
HAJ442  Honours Thesis A (Japanese)
HAJ443  Honours Thesis B (Japanese)

**Media Studies and 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  Honours Thesis A (Media and Cultural Studies)
HAC443  Honours Thesis B (Media and Cultural Studies)

**Psychology strand**
Available to students who have majored in Psychology.
HAY453  Advanced Quantitative Methods
HAY454  Psychological Assessment
HAY457  Ethics and Professional Issues
HAY459  Honours Thesis A (Psychology)
HAY480  Honours Thesis B (Psychology)

Plus one elective chosen from:
HAY455  Applied Social Psychology (subject to availability)
HAY458  Counselling Psychology
HET738  Neuropsychology Methods

**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  Honours Thesis A (Social Science)
HAF443  Honours Thesis B (Social Science)

Technology and Society Stream:
Each year the Australian Centre for Emerging Technologies and Society (ACETS) offers a special project stream in the Social Science strand. The project involves coordinated research and thesis work in the field of emerging technologies and society. It is closely integrated with the Swinburne National Technology and Society Monitor.

**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 School of Social and Behavioural 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 subjects 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 School of Social and Behavioural Sciences.
Swinburne, Lilydale Division

The Lilydale campus of Swinburne University was officially opened in 1987 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 Swinburne, 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. Swinburne, 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
Contact Swinburne Lilydale on +61 3 9215 7000
Email: ldinfo@swin.edu.au
Website: www.ld.swin.edu.au

L055 Bachelor of Business

The Bachelor of Business 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 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 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 is given to the process of learning and thinking involved, as well as course content. A student's choice of subject combinations may be expanded by allowing significant selections from other degree streams.

Aims & Objectives
The Bachelor of Business is planned 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.
- Specialise in the field of their chosen profession.
- Study combinations of subjects 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 team work.
- 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 sales and marketing, tourism, accountancy, human resources, management and financial advice.

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.

Structure
Students undertake a total of twenty-four subjects, each of 12.5 credit points, consisting of core subjects, majors and minors. Students are required to complete at least four subjects at Stage 3 and no more than ten subjects at Stage 1. Satisfactory completion of the course will require the inclusion of either:

- One major and one minor, OR
- Two majors.

At least one major must be taken from the business streams of:

- Accounting
- Economics
- Economics/Finance
- Human Resource Management
- Information Systems
- Management
- Marketing
- Tourism

In addition, students may select majors and minors from any other course offered by Swinburne, Lilydale, such as:

- Computing
- eBusiness
- Information Technology
- Interactive Multimedia
- Media
- Psychology
- Social Statistics
- Sociology

Some combinations, for example both Psychology and Accounting with professional recognition, will not be possible within the twenty-four subject structure.

A major consists of six subjects post-Stage 1, with at least two subjects at Stage 3. For professional recognition in Psychology, students must take subjects as specified.

A minor consists of four subjects post-Stage 1 with at least one subject at Stage 3.

Refer to the Lilydale Specialisation section in this handbook for details of majors and minors.

Course subjects
Students are required to complete four core subjects in the first year:

- LCI101 Information Methods
- LCL100 Learning and Communication Behaviour
- LCT100 Science, Technology and Society
- LCR100 Statistics and Research Methods

Students are also required to complete four of the following six core business subjects:

- LAI100 Information Systems Fundamentals
- LBC100 Accounting 1
- LBE100 Microeconomics
- LBM100 Marketing Concepts
- LBL100 Introduction to Commercial Law
- LTE100 Introduction to Management (taken in second year)

In addition students must complete prerequisite subjects for chosen majors and minors. Please refer to the individual specialisations listed above for details of majors and minors.

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

2004 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any).

2003 Final Clearly-In ENTER: 88.00

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 35101(F/T), 35251(P/T), 35103 (Int. Fee)

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

International students should contact the International Student Unit on +61 3 9214 9947 or visit the website at: www.swinburne.edu.au/isu
L054 Bachelor of Business (Accounting)

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.

Students wishing to undertake more intensive accounting studies than those included in an accounting major (generally six accounting units post Stage 1) or an accounting minor (generally four accounting units post Stage 1) should enrol in Bachelor of Business (Accounting) degree.

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 will automatically become 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 subjects, 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.

Structure

The degree comprises 24 subjects, each of 12.5 credit points. Students are required to complete four Swinburne Lilydale core subjects together with fourteen other subjects needed to gain professional recognition. Students may be able to take minor course of study from other specialisations available at Lilydale campus.

Core subjects

- LCI101 Information Methods (C, P)
- LCR100 Statistics and Research Methods (C, P)
- LCL100 Learning and Communication Behaviour (C)
- LCT100 Science Technology and Society (C)

Accounting subjects

Stage 1

- LBC100 Accounting 1 (P)

Stage 2

- LBC200 Computer Accounting Systems (P)
- LBC201 Corporate Accounting (P)
- LBC202 Management Accounting 1 (P)
- LBC203 Computer Cost Accounting Systems (P)
- LBC204 Financial Management 1 (P)

Stage 3

- LBC300 Accounting Theory (P)
- LBC301 Taxation (P)
- LBC302 Auditing (P)
- LBC304 Personal Investment Issues (E)
- LBC306 Strategic Financial Management (E)

Other subjects

- LBE100 Microeconomics (P)
- LBE200 Macroeconomics (P)

L053 Bachelor of Business (eCommerce)

The Bachelor of Business in eCommerce addresses the needs of business people, and others, working in an environment influenced by the widespread application of new technologies. The program reflects a need for new business models and strategies to better cope with the complexity, paradoxes and new ways of thinking in a globally networked business environment.

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.
- Generic business, marketing and management skills, including their application in an eCommerce 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, Prahran

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 human resources with the relevant knowledge, application capabilities and attitudes for successful performance in an eCommerce environment.

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
Structure
The first two years of the Bachelor's degree incorporates TAFE components. The student workload over the first two years totals around 1200 hours (including both attendance and out-of-class study). Exit points are available after completing the first year with a Diploma of Business (eCommerce) and after second year, with an Advanced Diploma of Business (eCommerce).

The third year of the Bachelor's degree draws upon the earlier years of study and strengthens the conceptual and theoretical frameworks applied. The student workload during the third year totals around 360 hours study time (including attendance and out-of-class study, individual or team).

Year 1 (Diploma)
Note: LEB100 to LEB107 comprise TAFE modules.
LEB100 Accounting and Finance
LEB101 The Marketing Concept
LEB102 eCommerce Management 1
LEB103 Computing/Multimedia 1
LEB104 Communication
LEB105 eCommerce Fundamentals
LEB106 Business Law
LEB107 Cultural Diversity and Ethics for eCommerce Professional Practice
LEB108 Issues in eCommerce 1

Year 2 (Advanced Diploma)
Note: LEB200 to LEB206 comprises TAFE modules.
LEB200 Economics and Finance
LEB201 eMarketing and CRM
LEB202 eCommerce Management 2
LEB203 Computing/Multimedia 2
LEB204 eCommerce Management 3
LEB205 Issues in eCommerce 2
LEB206 eCommerce Project
LEB207 Social and Sustainability Issues for Professional Practice

Year 3 (Degree)
LEB300 Managing the Transition to eBusiness
LEB301 Information Methods and Technical Communication
LEB302 Business Information Systems and Technology for Managers
LEB303 eCommerce Due Diligence, Negotiations, Deals and Mergers: Lab 1
LEB304 Entrepreneurship and Innovation for Competitive Advantage: Lab 2
LEB305 Managing Strategic Cost and eCommerce Performance: Lab 3
LEB306 eCommerce Product Management
LEB307 Managing People in an eCommerce Environment

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

2004 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any).
2003 Final Clearly-In ENTER: 59.75 (Lilydale), 64.40 (Prahran)

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC codes: Lilydale: 35241(F/T), 35243 (Int. Fee); Prahran: 36011(F/T), 36013 (Int. Fee)

For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

L056A Bachelor of Business (Tourism and Management)
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 subjects 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.

Tourism stream provides a more industry-specific focus for the understandings provided in the business subjects, and uses an interdisciplinary approach which views tourism as a form of human behaviour as well as a business interest. All subjects 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 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, 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.

Structure
The degree consists of 24 subjects, each of 12.5 credit points, including core subjects, majors, minors and electives. Students are required to complete at least four subjects at Stage 3 and no more than ten subjects at Stage 1.

A major consists of six subjects post Stage 1 in an appropriate discipline, with at least two subjects at Stage 3. For professional recognition in Accounting or Psychology, students must take subjects as specified.

A minor consists of four subjects post Stage 1 in an appropriate discipline, with at least one subject at Stage 3.

For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

L056A Bachelor of Business (Tourism and Management)
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 subjects 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.

Tourism stream provides a more industry-specific focus for the understandings provided in the business subjects, and uses an interdisciplinary approach which views tourism as a form of human behaviour as well as a business interest. All subjects 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 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, 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.

Structure
The degree consists of 24 subjects, each of 12.5 credit points, including core subjects, majors, minors and electives. Students are required to complete at least four subjects at Stage 3 and no more than ten subjects at Stage 1.

A major consists of six subjects post Stage 1 in an appropriate discipline, with at least two subjects at Stage 3. For professional recognition in Accounting or Psychology, students must take subjects as specified.

A minor consists of four subjects post Stage 1 in an appropriate discipline, with at least one subject at Stage 3.

For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

Swinburne University of Technology | Undergraduate Course Handbook 2004
Aims & Objectives

An honours year is available to students with a minimum of credit average, allowing significant selections across other degree streams. Attention will be given to the process of learning and thinking involved as well as professional and vocational pursuits. In the implementation of these principles, a foundation for lifelong learning and specialisation as a preparation for future professional recognition will not be possible in the 24 unit structure. Some combinations, for example, both psychology and accounting with 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.

Career opportunities

The Psychology major, combined with appropriate subjects, 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 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.

Structure

Students undertake a total of twenty-four subjects each of 12.5 credit points, consisting of core subjects, majors and minors. Students are required to complete at least four subjects at Stage 3 and no more than ten subjects 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.

At least one major must be taken from either:

- eCulture and Media
- Psychology, OR
- Sociology.

In addition students may select majors in:

- Accounting
- Computing
- Economics
- Economics/Finance
- Human Resource Management
- Information Systems
- Information Technology
- Interactive Multimedia/Management
- Marketing Tourism

Some combinations, for example, both psychology and accounting with professional recognition, will not be possible in the 24 unit structure. Minors are offered in:

- Accounting
• Business Computing
• Economics
• Economics/Finance
• Human Resource Management
• Information Systems
• Information Technology
• Management
• Marketing
• eCulture and Media
• Psychology
• Social Statistics
• Sociology
• Tourism

A major consists of six subjects post-Stage 1, with at least two subjects at Stage 3.

For professional recognition in Accounting or Psychology, students must take subjects as specified.

A minor comprises four subjects post-Stage 1, with at least one subject at Stage 3.

Students are required to complete four core subjects in first year. Some combinations of majors may require a variation to these requirements. In addition students must complete prerequisite subjects for chosen majors and minors.

Refer to the Lilydale Specialisation section in this handbook for details of majors and minors.

### Course subjects
The four core subjects are:

- **LCT101** Information Methods
- **LCL100** Learning and Communication Behaviour
- **LCT100** Science, Technology and Society
- **LCR100** Statistics and Research Methods

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

2004 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any).

2003 Final Clearly-In ENTER: 60.10

### 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

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

### L064 Bachelor of Technology (Information Systems)

The Bachelor of Technology (Information Systems) provides a learning experience for individuals seeking entry to the management and development of modern information solutions for enterprise. Students will experience the vitality of information provision and supporting technologies for business and community enterprises. An emphasis is on the effective use of information and IT within an organisation and the development of systems for solving business problems.

There is an emphasis on team project work throughout the degree, which enables students to develop the technical and communication skills necessary to ensure that they are of immediate benefit to employers after completing the course. Some projects involve the development of small systems for clients external to the University.

This course will be offered in a flexible learning format. By using computers, students will increasingly undertake parts of their study independently. The computer will be a means of instruction, communication and computation that can be used at home, on campus or at one of the University’s study centres.

Students are encouraged to provide their own desktop or notebook PC-compatible computer, together with a modem for communication to the University’s machines and the Internet, from their homes. This will lead to a reduction in the time spent in formal instruction on campus.

### Campus
Lilydale

### Career opportunities
The Information Systems major can lead to career opportunities within the scope of the management of information technology implementations, and the design and analysis of IT solutions.

### Professional recognition
Application will be made to the Australian Computing Society for professional accreditation where appropriate.

### Course duration
Three years full-time or six years part-time. An additional period of Industry-Based Learning (IBL), for either 6 or 12 months, may be undertaken by full-time students on a competitive basis, after the completion of their second year, provided they achieve the required standards.

### Structure
The course consists of a total of 24 subjects, or 300 credit points, including core subjects, majors, minors and electives. Students are required to complete at least four subjects at Stage 3 and no more than ten subjects at Stage 1.

Satisfactory completion of the course will require the inclusion of Information Systems Core major and Information Systems co-minor. A major consists of six subjects post Stage 1, with at least two subjects at Stage 3.

A minor consists of four subjects post-Stage 1, with at least one subject at Stage 3, except in the case of Psychology.

In addition, students may select major and/or minor studies from any other discipline, offered by Swinburne University of Technology, Lilydale.

### Course subjects
Students are required to complete the four Lilydale core subjects:

- **LCT101** Information Methods
- **LCL100** Learning and Communication Behaviour
- **LCT100** Science, Technology and Society
- **LCR100** Statistics and Research Methods

Students are also required to complete the following four subjects:

- **LAC100** Computing Fundamentals
- **LAI100** Information Systems Fundamentals
- **LST100** Software and Multimedia Concepts
- **LSM100** Texts and Contexts

For other subjects, refer to the Information Systems Core major and Information Systems co-minor listed under the Lilydale Specialisation section in this handbook.

### Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification. Alternatively, applicants with a Certificate IV or a Diploma (credit grade average) may be able to enter the degree level with ‘advanced standing’.

2004 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any).

2003 Final Clearly-In ENTER: 61.20

### 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

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu
**L063 Bachelor of Technology (Information Technology & Software Engineering)**

The Bachelor of Technology (Information Technology & Software Engineering) provides a learning experience for individuals seeking entry to the IT industry, particularly careers in programming, systems analysis and design computing and project management.

There is an emphasis on team project work throughout the degree, which enables students to develop the technical and communication skills necessary to ensure that they are of immediate benefit to employers after completing the course. Some projects involve the development of small systems for clients external to the University.

This course will be offered in a flexible learning format. By using computers, students will increasingly undertake parts of their study independently. The computer will be a means of instruction, communication and computation that can be used at home, on campus or at one of the University’s study centres.

Students are encouraged to provide their own desktop or notebook PC-compatible computer, together with a modem for communication to the University’s machines and the Internet, from their homes. This will lead to a reduction in the time spent in formal instruction on campus.

**Campus**

Lilydale

**Career opportunities**

Employment in the IT industry, particularly careers in programming, systems analysis and design computing and project management.

**Professional recognition**

Application will be made to the Australian Computing Society for professional accreditation where appropriate.

**Course duration**

Three years full-time or six years part-time. An additional period of Industry-Based Learning (IBL), for either 6 or 12 months, may be undertaken by full-time students on a competitive basis, after the completion of their second year, provided they achieve the required standards.

**Structure**

The course consists of a total of 24 subjects, or 300 credit points, including core subjects, majors, minors and electives. Students are required to complete at least four subjects at Stage 3 and no more than ten subjects at Stage 1.

Satisfactory completion of the course will require the inclusion of Information Technology Core-major and Software Engineering Co-minor. A major consists of six subjects post Stage 1, with at least two subjects at Stage 3.

A minor consists of four subjects post Stage 1, with at least one subject at Stage 3, except in the case of Psychology.

In addition, students may select major and/or minor studies from any other discipline, offered by Swinburne University of Technology, Lilydale.

**Course subjects**

Students are required to complete the four Lilydale core subjects:

- **LCT100** Information Methods
- **LAI100** Learning and Communication Behaviour
- **LCT100** Science, Technology and Society
- **LCR100** Statistics and Research Methods

Students are also required to complete the following subjects:

- **LAC100** Computing Fundamentals
- **LAS100** Software and Multimedia Concepts
- **LAI100** Information Systems Fundamentals

For other subjects, refer to the Information Technology Core-major and Software Engineering Co-minor listed under the Lilydale Specialisation section in this handbook.

**Entry requirements**

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification. Alternatively, applicants with a Certificate IV (credit grade average) or a Diploma may be able to enter the degree level with ‘advanced standing’.

2004 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any).

2003 Final Clearly-In ENTER: 62.20

**Application procedure**

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 35271(F/T), 35301(P/T), 35273 (Int. Fee)

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

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

**L059 Bachelor of Technology (Interactive Multimedia)**

The Bachelor of Technology (Interactive Multimedia) integrates information technologies, telecommunications and multimedia concepts. Increasingly, interactive multimedia is becoming a dominant mode of delivering information and entertainment and is escalating in its use within business, government and educational institutions to create, promote and sell products and provide graphic information about services.

There is an emphasis on team project work throughout the degree, which enables students to develop the technical and communication skills necessary to ensure that they are of immediate benefit to employers after completing the course. Some projects involve the development of small systems for clients external to the University.

This course will be offered in a flexible learning format. By using computers, students will increasingly undertake parts of their study independently. The computer will be a means of instruction, communication and computation that can be used at home, on campus or at one of the University’s study centres.

Students are encouraged to provide their own desktop or notebook PC-compatible computer, together with a modem for communication to the University’s machines and the Internet, from their homes. This will lead to a reduction in the time spent in formal instruction on campus.

**Campus**

Lilydale

**Career opportunities**

This course will lead to employment in the interactive multimedia industry, or in industries which are making increasing use of interactive multimedia products for a variety of purposes, such as tourism and training management.

**Professional recognition**

Application will be made to the Australian Computing Society for professional accreditation where appropriate.

**Course duration**

Three years full-time or six years part-time. An additional period of Industry-Based Learning (IBL), for either 6 or 12 months, may be undertaken by full-time students on a competitive basis, after the completion of their second year, provided they achieve the required standards.

**Structure**

The course consists of a total of 24 subjects, or 300 credit points, including core subjects, majors, minors and electives. Students are required to complete at least four subjects at Stage 3 and no more than ten subjects at Stage 1.

Satisfactory completion of the course will require the inclusion of Interactive Multimedia Core-major and eCulture and Communication Co-minor. A major consists of six subjects post Stage 1, with at least two subjects at Stage 3.

A minor consists of four subjects post Stage 1, with at least one subject at Stage 3, except in the case of Psychology.

In addition, students may select major and/or minor studies from any other discipline, offered by Swinburne University of Technology, Lilydale.

**Core subjects**

- **LCT100** Information Methods
- **LAI100** Learning and Communication Behaviour
- **LCT100** Science, Technology and Society

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Institute (AMI).
Graduates are eligible for associate membership of the Australian Marketing
Professionals and are recognized for their expertise in international marketing.
Career opportunities are available in a wide range of interesting and challenging
fields including: business-to-business marketing, market research, advertising and
promotion, retailing, market planning, product and service marketing, tourism and
human resource management.

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as
an interstate or international Year 12 qualification. Alternatively, applicants with a
Certificate IV (credit grade average) or a Diploma may be able to enter the degree
level with ‘advanced standing’.

2004 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any).
2003 Final Clearly-In ENTER: 60.80

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre
(VTAC), VTAC code: 35261(F/T), 35311(P/T), 35263 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214
8847 or visit the website at: www.swinburne.edu.au/isu

DUAL QUALIFICATIONS

L057 Bachelor of Business / Advanced Diploma of Business (Marketing)

This dual award provides an opportunity for students to combine specific sales and
marketing competencies with the theoretical knowledge, communications skills
and an advanced understanding of integrated business methods required for sound
management in all areas of modern business.

Students will undertake concurrent studies in all marketing areas at both
theoretical and practical levels, and have the opportunity to relate these to
complementary business areas by undertaking majors, minors or electives in a
variety of related business management areas, including tourism, financial
management, economics, business computing and human resource management.

Subjects in the Marketing Major within the Bachelor of Business are taken in
conjunction with subjects in the Advanced Diploma of Business (Marketing) offered
by Swinburne TAFE. Initial TAFE-only studies are increasingly complemented by
degree studies over the first two years, with the last two years being undertaken
only at the degree level.

Students may withdraw at various exit points, namely with an Advanced
Certificate in Sales Management after one year, an Advanced Diploma of Business
(Accounting) after two years, or both Advanced Diploma of Business (Marketing)
and Bachelor of Business after four years study.

Campus
Lilydale

Career opportunities
The combined course is clearly directed to achieving practical vocational outcomes.
Marketing is the fastest growing sector of management study and practical
application within industry. The package offered by the dual award prepares
graduates with both grassroots and conceptual competencies along with enhanced
industry orientation by means of practically-oriented projects at all levels of study.
Career opportunities are available in a wide range of interesting and challenging
fields including: business-to-business marketing, market research, advertising and
promotion, retailing, market planning, product and service marketing, tourism and
international marketing.

Professional recognition
Graduates are eligible for associate membership of the Australian Marketing
Institute (AMI).

Course duration
Four years full-time. However, students may be able to reduce their time
commitment by early completion of TAFE modules and expedited degree modules
eg. Summer Semester study.

Structure
Cross-credit arrangements ensure that appropriate credits and exemptions are
given in each award for studies completed at each stage. Students are therefore
required to undertake the TAFE modules in the Advanced Diploma of Business
(Accounting) plus the following twelve Higher Education subjects:

Year 2
Semester 1
LCR100 Statistics and Research Methods
Semester 2
Subject for minor

Year 3
Semester 1
LBC100 Accounting 1
LSQ201 Survey Research Methods
Plus Subject for minor
Semester 2
LCI101 Information Methods
LCT100 Science Technology and Society
Plus Subject for minor

Year 4
Semester 1
LBM300 Microeconomics
LBE100 Product Management
Semester 2
LBM301 Services Marketing and Management

L072 Bachelor of Business (Accounting) / Advanced Diploma of Accounting

This dual award course provides an opportunity for students, not only to gain
specialist accounting training at a theoretical and practical level, but also to
undertake minors in a variety of related areas including economics, finance and
human resource management. Subjects in the Bachelor of Business (Accounting)
are taken in conjunction with subjects in the Advanced Diploma of Business
(Accounting) offered by Swinburne TAFE. Initial TAFE-only studies are increasingly
complemented by degree studies over the first two years with the last two years
being undertaken at the degree level only.

Campus
Lilydale

Career opportunities
Major studies in accounting combined with other appropriate business subjects
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
Completion of the degree within the dual award framework will enable students to apply for membership of either the Australian Society of Certified Accountants or the Institute of Chartered Accountants in Australia.

Course duration
Four years full-time. However, students may be able to reduce their time commitment by early completion of TAFE modules and expedited degree modules eg. Summer Semester study.

Structure
Students undertake both an Advanced Diploma of Business (Accounting) as well as a Business (Accounting) degree over four years of full-time study.

Course subjects
In addition to the TAFE subjects in the Advanced Diploma of Business (Accounting), students will be required to undertake the following Higher Education subjects:

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<tr>
<th>Year</th>
<th>Semester 1</th>
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<tr>
<td></td>
<td>Year 1</td>
<td>Year 2</td>
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<tr>
<td></td>
<td>LBM100  Marketing Concepts</td>
<td>LCT101  Information Methods</td>
</tr>
<tr>
<td></td>
<td>LBC101  Accounting Fundamentals</td>
<td>LBE100  Microeconomics</td>
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<tr>
<td></td>
<td>LBC201  Corporate Accounting</td>
<td>LBC202  Management Accounting 1</td>
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<tr>
<td></td>
<td>LBC203  Computer Cost Accounting Systems</td>
<td>LBC204  Financial Management 1</td>
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<tr>
<td>Year 3</td>
<td>Semester 1</td>
<td>Year 3</td>
</tr>
<tr>
<td></td>
<td>LBC301  Accounting Theory</td>
<td>LBE200  Macroeconomics</td>
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<tr>
<td></td>
<td>LBC302  Auditing</td>
<td>LBE200  Company Law</td>
</tr>
<tr>
<td></td>
<td>LBC300  Accounting Theory</td>
<td>LBL100  Introduction to Commercial Law</td>
</tr>
<tr>
<td></td>
<td>LBC301  Taxation</td>
<td>LTT101  Science, Technology and Society</td>
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<tr>
<td></td>
<td>Plus Elective or subject for minor</td>
<td>LTT201  Tourist Destination Management</td>
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<td></td>
<td></td>
<td>LTT204  Regional Issues in Tourism</td>
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<td></td>
<td>Year 4</td>
<td>Semester 1</td>
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<tr>
<td></td>
<td>LBC302  Auditing</td>
<td>Semester 2</td>
</tr>
<tr>
<td></td>
<td>Plus Elective or subject for minor</td>
<td>LBB100  Marketing Behaviour</td>
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<tr>
<td></td>
<td></td>
<td>LTE201  Human Resource Management</td>
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<tr>
<td></td>
<td></td>
<td>LTE202  Tourism Enterprise Development</td>
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<td></td>
<td></td>
<td>LBC101  Accounting Fundamentals</td>
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<td></td>
<td>LBE200  Marketing Behaviour</td>
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<td>LTE201  Human Resource Management</td>
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<td></td>
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<td>LTE202  Tourism Enterprise Development</td>
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<td>Semester 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LBB100  Introduction to Commercial Law</td>
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<tr>
<td></td>
<td></td>
<td>LTT 300  Tourism Channels and Travel Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LTE 302  Leadership and Management</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.
2004 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any).
Note: This course is not available to students who have completed Advanced Diploma of Business (Accounting)
2003 Final Clearly-In ENTER: 66.00

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 35041F(T), 35043 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

L070 Bachelor of Business (Tourism and Management) / Diploma of Hospitality Management

In this course, students undertake both a Diploma of Hospitality Management and a degree in Business (Tourism and Management). The dual award provides an opportunity for students to combine specific customer-related competencies and hospitality industry experience with the knowledge, skills and understandings required for sound management in the broader tourism system. Students undertake concurrent studies at theoretical and practical levels in the hospitality, tourism and management areas, and have the opportunity to relate these to other business areas such as marketing, financial management, and human resource management.

The course is clearly directed to vocational outcomes. Hospitality is the most rapidly growing subsector within the growing tourism industry. The package offered by the dual award prepares graduates with grassroots competencies and an industry orientation supported by deep theoretical and practical understandings of tourism management as a business activity and of tourism as a form of human behaviour.

Career opportunities
This dual award prepares students for a range of tourism and tourism related industries from enterprise marketing to small/medium sized business management.

Course duration
Four years full-time. However, students may be able to reduce their time commitment by early completion of TAFE modules.

Structure
Subjects in the Bachelor of Business (Tourism and Management) are taken in conjunction with subjects in the Diploma of Hospitality Management offered by Swinburne TAFE. Students may withdraw at various exit points with a Certificate IV in Hospitality Supervision or a Diploma of Hospitality Management. Cross-credit arrangements ensure that credits and exemptions are given in each award for studies completed at each stage. Students are therefore required to undertake TAFE modules in the Diploma of Hospitality Management plus the following sixteen Higher Education subjects:

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<tr>
<th>Year</th>
<th>Semester 1</th>
<th>Semester 2</th>
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<tr>
<td></td>
<td>Year 1</td>
<td>Year 2</td>
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<tr>
<td></td>
<td>LCR100  Statistics and Research Methods</td>
<td>LTE100  Introduction to Management</td>
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<tr>
<td></td>
<td>LTE101  Science, Technology and Society</td>
<td>Year 3</td>
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<tr>
<td></td>
<td>LTT101  Science, Technology and Society</td>
<td>Semester 1</td>
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<tr>
<td></td>
<td>LTT 201  Tourist Destination Management</td>
<td>Semester 2</td>
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<td></td>
<td>LTE204  Regional Issues in Tourism</td>
<td>LBB100  Accounting Fundamentals</td>
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<tr>
<td></td>
<td></td>
<td>LBE200  Marketing Behaviour</td>
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<tr>
<td></td>
<td></td>
<td>LTE201  Human Resource Management</td>
</tr>
<tr>
<td></td>
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<td>LTE202  Tourism Enterprise Development</td>
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<td>LBB100  Introduction to Commercial Law</td>
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<tr>
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<td></td>
<td>LTT 300  Tourism Channels and Travel Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LTE 302  Leadership and Management</td>
</tr>
</tbody>
</table>
Semester 2
LTE301 Strategic Planning & Project management
LTT302 Planning and Management in Ecotourism
LTE300 Organisational Change & Development

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an international or internal Year 12 qualification.
2004 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any).
Applicants who do not satisfy the above requirements may be selected after consideration of their employment and educational background.

This course is not available to students who have completed the Diploma of Hospitality Management
2003 Final Clearly-In ENTER: 59.20

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 35651(F/T), 35653 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8847 or visit the website at: www.swin.edu.au/isu

DOUBLE DEGREE
L067 Bachelor of Business / Bachelor of Social Science

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 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 subjects 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.

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 Australian Society of Certified Practising Accountants or the Institute of Chartered Accountants in Australia, the Psychology program is accredited by the Australian Psychological Society (APS), and the Information Technology specialisation is recognised by the Australian Computer Society as a Professional Level course (provisional). Graduates are eligible for associate membership. After four years of relevant experience, a graduate can apply for full membership. Students seeking professional recognition may not be able to complete a double degree without undertaking extra subjects.

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 subjects during the summer semester.

Structure
To complete the double degree, students need to successfully complete 32 subjects consisting of core subjects, other compulsory subjects, and one of the following combinations:

- Two majors and two minors.
- Three majors and one minor.

Core subjects
LCI101 Information Methods
LCL100 Learning and Communications Behaviour
LCT100 Science, Technology and Society
LOR100 Statistics and Research Methods

Core Business subjects
Four of the five subjects listed below:
LAI100 Information Systems Fundamentals
LBC100 Accounting 1
LBE100 Microeconomics
LBM100 Marketing Concepts
LBL100 Introduction to Commercial Law
LTE100 Introduction to Management

Business major
At least one major of the following:
- Accounting*
- Marketing
- Economics
- Economics/Finance
- Human Resource Management
- Management Information Systems
- Tourism

Social Science major
At least one major of the following:
- eCulture & Media Studies
- Psychology*
- Sociology

Additional majors and/or minors
One or two additional majors and/or minors from the above plus:
- Information Technology
- Tourism
- Social Statistics
- Computing
- Business Computing and eBusiness
- Interactive Multimedia
- Economics/Finance

Electives as required.
Students must ensure that they complete at least 10 and no more than 12 first stage subjects, and at least 6 third stage subjects.
Refer to the Lilydale Specialisation section in this handbook for details of majors and minors.

* 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.

Swinburne University of Technology | Undergraduate Course Handbook 2004
Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.

2004 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any). Consideration will be given to the full range of an applicant’s VCE studies and results, to the level of performance in CATs, and to the student profile.

2003 ENTER: Individual Offer

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 35141F(T), 35231P(Y), 35184 (Int. Fee)

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

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

LILYDALE SPECIALISATIONS

Accounting
Accounting is the basic language of business. The accounting subjects 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 subjects 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. Subjects cover a range of areas from accounting as a business computer information system, to developing information to assist the marketing, purchasing, production and administrative 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, subjects 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 subjects in tax, auditing, financial reporting and personal investment can be studied.

Some accounting subjects 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.

Career opportunities
Students with accounting majors or minors find rewarding work in industry, commerce, the public sector, the finance industry or business consulting.

Accounting minor
This combination is illustrative. Other combinations or subject choices are possible provided prerequisites are met.

Stage 1
LBC100 Accounting 1

Stage 2
LBC202 Management Accounting 1
LBC203 Computer Cost Accounting Systems
LBC204 Financial Management 1

Stage 3
LBC306 Strategic Financial Management

Business Computing and eBusiness

Business Computing and eBusiness minor

Stage 1
LAI100 Information Systems Fundamentals
LAS100 Software and Application Development Concepts

Stage 2
LAI230 Management Support Systems
Plus two of:
LAI210 Database Concepts and Modelling
LAI240 Electronic Communications and Application
LA280 Human-Computer Interaction
LAM870 Multimedia Tools and Concepts

Stage 3
LAI350 eCommerce and Business Computing Applications

Computing

Career opportunities
The Computing major, combined with other appropriate subjects, can lead to career opportunities within the scope of most entry level positions in the information technology field, including positions such as programmer, programmer analyst, software engineer and systems engineer.

Computing major

Stage 1
LAC100 Computing Fundamentals
LAS100 Software and Application Development Concepts

Stage 2
LAC200 Programming
LAC220 Systems Programming & Architectures
LAS200 Systems Analysis & Design

Plus one other Stage 2 Information Technology, Systems and Multimedia subject.

Stage 3
LAC200 Advanced Programming and Systems Project (25pts)

Computing minor (general)

Stage 1
LAC100 Computing Fundamentals
LAS100 Software and Application Development Concepts

Stage 2
LAC200 Programming
LAI240 Electronic Communications and Applications

Stage 3
LAC200 Advanced Programming and Systems Project (25pts)
Computing (co-minor Applied Science (IT))

Stage 1
LAC100 Computing Fundamentals

Stage 2
LAI240 Electronic Communications and Applications
LAC220 Systems Programming and Architectures

Stage 3
LAS310 IT Strategies and Project Management

Plus one Stage 2 or Stage 3 Information Technology, Systems and Multimedia subject

Economics
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.

Career opportunities
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.

Economics major
This combination is recommended. Other combinations or subject choices may be negotiated.

Stage 1
LBE100 Microeconomics

Stages 2 and 3
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
LBE302 Economic Development

Economics minor
This combination is recommended. Other combinations or subject choices may be negotiated.

Stage 1
LBE100 Microeconomics

Stages 2 and 3
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
LBE302 Economic Development

Economics / Finance
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 financial markets, both at a domestic and international level. It will lead to a better understanding and appreciation of the issues involved in making financial decisions for an organisation.

Career opportunities
Economics/Finance is one of the fastest growing employment areas with opportunities in banking, insurance, stockbroking, funds management, futures broking, and superannuation. Finance graduates who undertake further study may also qualify as Certified Financial Planners.

Economics/Finance major
This combination is recommended. Other combinations or subject choices may be negotiated.

Stage 1
LBC100 Accounting 1
LBE100 Microeconomics

Stage 2
LBE200 Macroeconomics
LBC204 Financial Management 1
LBE204 Financial Markets and Institutions

Stage 3
LBC304 Personal Investment Issues
LBE301 International Trade and Finance
LBC306 Strategic Financial Management

Economics/Finance minor
This combination is recommended. Other combinations or subject choices may be negotiated.

Stage 1
LBC100 Accounting 1
LBE100 Microeconomics

Stage 2
LBE200 Macroeconomics
LBC204 Financial Management 1

Stage 3
LBC304 Personal Investment Issues
LBE301 International Trade and Finance

eCulture and Media Studies
Media Studies at Swinburne offers a broad range of subjects 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.

Career opportunities
Students who have graduated from 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, public relations, advertising and telecommunications research and marketing. Many students have found that, though 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.

Structure
Students undertaking the Bachelor of Social Science can choose from ten subjects in eCulture and Media Studies, but only six post Stage 1 subjects are required for completion of the Media Studies major. Minimum requirements for the major in...
Media Studies are one Stage 1 subject, three Stage 2 subjects and three Stage 3 subjects.

**eCulture and Media Studies Major**

**Stage 1**
- LSM100 Text and Contexts

**Stage 2**
- LSM200 eCulture
- LSM201 Writing for the Media
- LSM203 New Media

**Stage 3**
- LSM301 Electronic Writing
- LSM302 Information Society
- LSM304 Cyberscreen Studies

**eCulture Minor**

**Stage 1**
- LSM100 Texts and Contexts

**Stage 2**
- LSM200 eCulture
- LSM204 Cinema Studies

**Stage 3**
- LSM302 Information Society
- LSM304 Cyberscreen Studies

**eMedia Minor**

**Stage 1**
- LSM100 Texts and Contexts

**Stage 2**
- LSM201 Writing for the Media

**Stage 3**
- LSM301 Electronic Writing
- LSM304 Cyberscreen Studies
- LZZ301 Work Integrated Learning Project

**Media Minor**

**Stage 1**
- LSM100 Texts and Contexts

**Stage 2**
- LSM201 Writing for the Media
- LSM203 New Media

**Stage 3**
- LSM302 Information Society

Plus one elective from eCulture and Media Studies discipline

**Enterprise Management**

Then this specialisation is only available in Bachelor of Business (Tourism and Enterprise Management).

**Career opportunities**

The Enterprise Management major combines management subjects with financial management and tourism. Thus, it can lead to a management position with responsibilities for managing budgets. It also emphasises the development of strategic and entrepreneurial skills with a focus on tourism.

**Enterprise Management major**

**Stage 2**
- LTE200 Organisations and Management
- LTE201 Human Resource Management
- LTE202 Organisational Behaviour
- LBC204 Financial Management 1

**Stage 3**
- LTE300 Organisational Change and Development
- LTE301 Strategic Planning and Project Management
- LTE302 Leadership and Management

**Enterprise Management minor**

**Stage 2**
- LTE200 Organisations and Management
- LTE201 Human Resource Management
- LTE202 Organisational Behaviour

**Stage 3**
- LTE301 Strategic Planning and Project Management

**Human Resource Management**

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.

**Career opportunities**

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.

**HRM major**

This combination is recommended. Other combinations or subject choices may be negotiated.

**Stage 1**
- LTE100 Introduction to Management

**Stage 2**
- LTE200 Organisations & Management
- LTE201 Human Resource Management
- LTE202 Organisational Behaviour

**Stage 3**
- LSS300 Organisations and Society
- Plus any two of:
  - LTE300 Organisational Change and Development
  - LTE301 Strategic Planning & Project Management
  - LZZ301 Work Integrated Learning Project

**HRM minor**

This combination is recommended. Other combinations or subject choices may be negotiated.

**Stage 1**
- LTE100 Introduction to Management

**Stage 2**
- LTE200 Organisations & Management
- LTE201 Human Resource Management
- LTE202 Organisational Behaviour

**Stage 3**
- LSS300 Organisations and Society

**Information Systems**

The study of Information Systems and supporting technology is vital for any student entering the business world. The emphasis is on the effective use of information and information technology within an organisation and the development of systems for solving business problems.
Career opportunities
The Information Systems major, combined with other appropriate subjects, can lead to career opportunities within the scope of the management of information technology implementations, and the design and analysis of IT solutions. Information systems includes the development of management oriented systems support and executive information systems.

Information Systems Major

Stage 1
- LAI100 Information Systems Fundamentals
- LAS100 Software and Application Development Concepts

Stage 2
- LAI210 Database Concepts and Modelling
- LAI230 Management Support Systems
- LAI260 Human-Computer Interaction

Stage 3
- LAI350 eCommerce and Business Computing Applications
- Plus one of:
  - LAM270 Multimedia Tools and Concepts
  - LAI240 Electronic Communications and Applications

Information Systems minor

Stage 1
- LAI100 Information Systems Fundamentals
- LAS100 Software and Applications Development Concepts

Stage 2
- LAI230 Management Support Systems
- LAI260 Human-Computer Interaction

Stage 3
- LAI350 eCommerce and Business Computing Applications
- Plus one of:
  - LAM270 Multimedia Tools and Concepts
  - LAI240 Electronic Communications and Applications

Information Systems (BTech only)

The study of Information Systems and supporting technology is vital for any student entering the business world. The emphasis is on the effective use of information and information technology within an organisation and the development of systems for solving business problems.

Career opportunities
The Information Systems major, combined with other appropriate subjects, can lead to career opportunities within the scope of the management of information technology implementations, and the design and analysis of IT solutions. Information systems includes the development of management oriented systems support and executive information systems.

Information Systems Core Major and Core Co-minor

Stage 1
- LAI100 Information Systems Fundamentals
- LAS100 Software and Application Development Concepts

Stage 2
- LAI210 Database Concepts and Modelling
- LAI230 Management Support Systems
- LAI260 Human-Computer Interaction

Stage 3
- LAI350 eCommerce and Business Computing Applications
- Plus one of:
  - LAM270 Multimedia Tools and Concepts
  - LAI240 Electronic Communications and Applications

Details of Information Systems Co-minor

Stage 1
- LSM100 Texts and Contexts
- LAC100 Computing Fundamentals

Stage 2
- LAI240 Electronic Communications and Applications
- LAM270 Multimedia Tools and Concepts

Stage 3
- LAI300 Professional Reading & Writing in Technology & Culture
- LAI320 Database Management Systems
- LZZ301 Work Integrated Learning Project

Stage 3
- LAI350 eCommerce and Business Computing Applications
- LAS310 IT Strategies and Project Management

Details of Information Systems Co-minor

Stage 1
- LSM100 Texts and Contexts
- LAC100 Computing Fundamentals

Stage 2
- LAI240 Electronic Communications and Applications
- LAM270 Multimedia Tools and Concepts

Stage 3
- LAI300 Professional Reading & Writing in Technology & Culture
- LAI320 Database Management Systems
- LZZ301 Work Integrated Learning Project

Information Technology

The major in Information Technology provides the foundation for graduates to aspire to become leaders in Australia’s information technology industry. The course incorporates state of the art skills in information technology, systems development and management as well as a balance of existing approaches necessary to apply computing in the modern organisation environment.

Career opportunities
Appropriate combinations of subjects can lead to career opportunities within the scope of software development, systems analysis and design, database development, systems administration and computer network administration.

Information Technology major

Stage 1
- LAS100 Software and Application Development Concepts
- LAC100 Computing Fundamentals

Stage 2
- LAI210 Database Concepts and Modelling
- LAI230 Management Support Systems
- LAI260 Human-Computer Interaction

Stage 3
- LAC300 IT Professional & Ethical Issues
- Plus two of:
  - LAC220 Systems Programming and Architectures
  - LAC310 Advanced Programming and Systems Project
  - LAI320 Database Management Systems
  - LAC320 Software Engineering and CASE
  - LZZ301 Work Integrated Learning Project (or equivalent)

Information Technology Minor

Stage 1
- LAS100 Software and Application Development Concepts

Stage 2
- LAI210 Database Concepts and Modelling
- LAS200 Systems Analysis and Design

Stage 3
- LAI300 IT Professional & Ethical Issues
- Plus one elective from level 2 or 3 Information Technology, Systems and Multimedia Discipline.
Information Technology and Software Engineering (BTech only)

An Information Technology major provides the foundation for graduates to aspire to become leaders in Australia’s information technology industry. The course incorporates state of the art skills in information technology, systems development and management as well as a balance of existing approaches necessary to apply computing in the modern organisation environment.

Career opportunities

Appropriate combinations of subjects can lead to career opportunities within the scope of software development, systems analysis and design, database development, systems administration and computer network administration.

Information Technology Core major and Core Co-minor

Stage 1

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>LAC100</td>
<td>Computing Fundamentals</td>
</tr>
<tr>
<td>LA100</td>
<td>Information Systems Fundamentals</td>
</tr>
<tr>
<td>LAS100</td>
<td>Software and Application Development Concepts</td>
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</table>

Stage 2

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<tr>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>LAC200</td>
<td>Programming</td>
</tr>
<tr>
<td>LAC220</td>
<td>Systems Programming and Architectures</td>
</tr>
<tr>
<td>LAU10</td>
<td>Database Concepts and Modelling</td>
</tr>
<tr>
<td>LAS200</td>
<td>Systems Analysis and Design</td>
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</table>

Stage 3

<table>
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<tr>
<th>Course</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>LAC300</td>
<td>IT Professional and Ethical Issues</td>
</tr>
<tr>
<td>LAS310</td>
<td>IT Strategies and Project Management</td>
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</table>

Software Engineering Co-minor

Stage 2

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>LAU240</td>
<td>Electronic Communications and Applications</td>
</tr>
<tr>
<td>LAU260</td>
<td>Human-Computer Interaction</td>
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Stage 3

<table>
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<tr>
<th>Course</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>LAC320</td>
<td>Advanced Programming and Systems Project (25pts)</td>
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</tbody>
</table>

Interactive Multimedia

Interactive multimedia is becoming a dominant mode of delivering information and entertainment and is increasingly being used by businesses, government and educational institutions to create, promote and sell products, to provide graphic information about services and to provide training. The Bachelor of Technology (Interactive Multimedia) provides students with practical and theoretical skills for developing interactive multimedia.

Career opportunities

The Bachelor of Technology (Interactive Multimedia) will lead to employment in the interactive multimedia industry, or in industries which are making increasing use of interactive multimedia products for a variety of purposes, such as tourism and training management.

Interactive Multimedia Core Major and Core Co-minor

Stage 1

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<thead>
<tr>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>LAS100</td>
<td>Software and Application Development Concepts</td>
</tr>
<tr>
<td>LSM100</td>
<td>Texts and Contexts</td>
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</table>

Stage 2

<table>
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<tr>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>LAU260</td>
<td>Human-Computer Interaction</td>
</tr>
<tr>
<td>LAM270</td>
<td>Multimedia Tools and Concepts</td>
</tr>
<tr>
<td>LSM200</td>
<td>eCulture</td>
</tr>
<tr>
<td>LAM290</td>
<td>Multimedia &amp; Web Design</td>
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Stage 3

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<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>LAU300</td>
<td>Professional Reading &amp; Writing in Technology &amp; Culture</td>
</tr>
<tr>
<td>LSM201</td>
<td>Electronic Writing, OR</td>
</tr>
<tr>
<td>LAM300</td>
<td>Interactive Multimedia Project (25 Credit Points)</td>
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Interactive Multimedia Development minor

Stage 1

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<th>Course</th>
<th>Description</th>
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<tbody>
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<td>Software and Application Development Concepts</td>
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<tr>
<td>LSM100</td>
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Stage 2

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<tbody>
<tr>
<td>LAU260</td>
<td>Human-Computer Interaction</td>
</tr>
<tr>
<td>LAM270</td>
<td>Multimedia Tools and Concepts</td>
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<tr>
<td>LAM290</td>
<td>Multimedia &amp; Web Design</td>
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Stage 3

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<tr>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>LAU350</td>
<td>eCommerce and Business Computing Applications, OR</td>
</tr>
<tr>
<td>LAU300</td>
<td>Professional Reading &amp; Writing in Technology &amp; Culture</td>
</tr>
</tbody>
</table>

Interactive Multimedia (BTech only)

Interactive multimedia is becoming a dominant mode of delivering information and entertainment and is increasingly being used by businesses, government and educational institutions to create, promote and sell products, to provide graphic information about services and to provide training. The Bachelor of Technology (Interactive Multimedia) provides students with practical and theoretical skills for developing interactive multimedia.

Career opportunities

The Bachelor of Technology (Interactive Multimedia) will lead to employment in the interactive multimedia industry, or in industries which are making increasing use of interactive multimedia products for a variety of purposes, such as tourism and training management.

Interactive Multimedia Core Major and Core Co-minor

Stage 1

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>LAS100</td>
<td>Software and Application Development Concepts</td>
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<td>LSM100</td>
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Stage 2

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Stage 3

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<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>LAU300</td>
<td>IT Professional and Ethical Issues</td>
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eCulture and Communication Co-minor

Stage 1

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<thead>
<tr>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>LAC100</td>
<td>Computing Fundamentals</td>
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Stage 2

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<tr>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>LAU240</td>
<td>Electronic Communications and Applications</td>
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<tr>
<td>LSM203</td>
<td>New Media</td>
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Stage 3

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>LAU300</td>
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</table>

Management

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 ebusiness 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.
Career opportunities
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.

Management major
This combination is recommended.

Stage 1
LTE100 Introduction to Management

Stage 2
LTE200 Organisations & Management
LTE201 Human Resource Management
LTE202 Organisational Behaviour

Stage 3
Any three of:
LTE300 Organisational Change and Development
LTE301 Strategic Planning & Project Management
LTE302 Leadership and Management
LSM302 Information Society: Promises and Policies
LZZ301 Work Integrated Learning Project

Details of minor
This combination is recommended.

Stage 1
LTE100 Introduction to Management

Stage 2
LTE200 Organisations & Management
LTE201 Human Resource Management

Stage 3
Any Two of:
LTE300 Organisational Change and Development
LTE301 Strategic Planning & Project Management
LSM302 Information Society: Promises and Policies

Management
(BBus – Tourism and Management only)
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 eBusiness and eCommerce 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.

Career opportunities
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.

Management Major

Stage 1
LTE100 Introduction to Management

Stage 2
LTE200 Organisations & Management
LTE201 Human Resource Management
LTE202 Organisational Behaviour

Stage 3
LTE300 Organisational Change and Development
LTE301 Strategic Planning & Project Management

LTE302 Leadership and Management

Management Minor

Stage 1
LTE100 Introduction to Management

Stage 2
LTE200 Organisations & Management
LTE201 Human Resource Management
LTE202 Organisational Behaviour

Stage 3
LTE301 Strategic Planning & Project Management

Marketing
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.

Career opportunities
Opportunities are available in a wide range of fields such as sales and marketing, tourism, accountancy, human resources, information technology and general management.

Marketing minor
This combination is mandatory. Other combinations or subject choices may be negotiated.

Stage 1
LBM100 Marketing Concepts

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
Elective:
LBL201 Marketing Law

Marketing minor
This combination is recommended. Other combinations or subject choices may be negotiated.

Stage 1
LBM100 Marketing Concepts
Stage 2
LBM200 Marketing Behaviour
LBM201 Marketing Planning
LBM202 Marketing Communications

Stage 3
One of:
LBM300 Product Management, OR
LBM301 Services Marketing and Management

Psychology
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 3 attention is also given to vocational skills and knowledge relevant to applied fields.

Career opportunities
The Psychology major, combined with appropriate subjects 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.

Structure
It should be noted that the undergraduate psychology program is sequential in nature; completion of the prescribed subjects at one stage of the program is a prerequisite for study at the next level. All subjects offered in this program are semester subjects. Thus a student must complete both Stage 1 psychology subjects before enrolling in any Stage 2 psychology subjects, and must complete all Stage 2 psychology subjects before enrolling in any Stage 3 subjects. Details of these prerequisite arrangements are shown in entries for all psychology subjects.

Students should note that each psychology subject is worth one semester subject. Thus a student must complete both Stage 1 psychology prerequisite for study at the next level. All subjects offered in this program are semester subjects. Therefore, completion of the prescribed subjects at one stage of the program is a prerequisite for study at the next level. All subjects offered in this program are semester subjects. Thus a student must complete both Stage 1 psychology subjects before enrolling in any Stage 2 psychology subjects, and must complete all Stage 2 psychology subjects before enrolling in any Stage 3 subjects. Details of these prerequisite arrangements are shown in entries for all psychology subjects.

Psychology for Professional Recognition
Stage 1
LSY100 Psychology 100
LSY101 Psychology 101
LCR100 Statistics and Research Methods

Stage 2
LSY200 Cognition and Human Performance
LSY201 Developmental Psychology
LSQ200 Design and Measurement 2
LSQ200 Design and Measurement 3

Stage 3
LSY300 The Psychology of Personality
LSY301 Psychological Measurement
LSY304 Abnormal Psychology
LSY307 Social Psychology

Psychology Major
Stage 1
LSY100 Psychology 100
LSY101 Psychology 101
LCR100 Statistics and Research Methods

Stage 2
LSY200 Cognition and Human Performance
LSY201 Developmental Psychology
LSQ200 Design and Measurement 2
LSQ200 Design and Measurement 3

Stage 3
Two of (providing prerequisites/co-requisites are met):
LSY300 The Psychology of Personality
LSY301 Psychological Measurement
LSY304 Abnormal Psychology
LSY307 Social Psychology

For professional recognition students will be required to complete all Stage 3 subjects.

Psychology Minor
Stage 1
LSY100 Psychology 100
LSY101 Psychology 101
LCR100 Statistics and Research Methods

Stage 2
LSY200 Cognition and Human Performance
LSY201 Developmental Psychology
LSQ200 Design and Measurement 2

Stage 3
LSY304 Abnormal Psychology

Social Statistics
This selection of subjects 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.

Career opportunities
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.

Structure
To qualify for the minor students must complete the subjects as outlined below. However, if you are undertaking studies in Psychology for professional accreditation you will need to undertake all of the subjects in Social Statistics to qualify for the minor.

Social Statistics Minor
Stage 1
LCR100 Statistics and Research Methods

Stage 2
Two or three of:
LSQ200 Design and Measurement 2
LSQ201 Survey Research Methods
LSQ202 Qualitative Research

Stage 3
One or two of:
LSQ200 Design and Measurement 3
LSQ201 Research Project

Sociology
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 focused on both conceptual and applied skills including problem identification, statistics, research methods, the formation of lifelong learning skills, policy design and implementation. What differentiates the teaching of sociology from other social sciences is the emphasis on both theoretical and practical skills.
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 the 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.

Career opportunities

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
LSS303 Sociology and Social Policy

Sociology Minor

Stage 1

LSS100 Introduction to Sociology

Stage 2

Two or three of:
LSS200 Difference, Deviance and Conformity
LSS201 Sociological Perspectives
LSS202 Ethnicity, Culture and Diversity Management: Australia in the Global Context

Stage 3

One or two of:
LSS300 Organisations and Society
LSS302 Research Approaches
LSS303 Sociology and Social Policy

Tourism

The tourism stream provides a more industry-specific focus for the understandings provided in the business subjects, and uses an interdisciplinary approach which views tourism as a form of human behaviour as well as a business interest. All subjects will encourage the development of important generic skills in presentation, problem solving, communication and life long learning.

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 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 Eco-tourism

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

Tourism (BBus – Tourism and Management only)

The tourism stream provides a more industry-specific focus for the understandings provided in the business subjects, and uses an interdisciplinary approach which views tourism as a form of human behaviour as well as a business interest. All subjects will encourage the development of important generic skills in presentation, problem solving, communication and life long learning.

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 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 Eco-tourism

Tourism Minor

Stage 1

LTT100 Introduction to Tourism

Stage 2

Plus three of:
L076 Bachelor of Applied Science (Honours)

The Honours course at Swinburne’s Lilydale campus builds on the multi-disciplinary nature of the undergraduate programs currently offered at Lilydale. The program provides students with skills in research methodology in preparation for higher degrees, as well as the opportunity to undertake work integrated learning projects in industry, government and the community, as the basis of their Honours thesis. Students may work on either individual or team projects. Cooperative learning and teamwork are integral to the learning environment of Swinburne, Lilydale.

Aims & Objectives
The honours program 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 enhance their research skills.

Campus
Lilydale

Career opportunities
Graduates with an Honours degree in Applied Science will have enhanced employment opportunities in their chosen specialisation and discipline area: marketing, management, accounting. In addition they will have the advantage of having multidisciplinary research skills and intensive team work experience. Students will be well prepared for professional employment in which conceptual, organisational and research skills are in demand. The honours course is also a recognised point of entry into postgraduate research studies.

Course duration
One year full-time.

Structure
The course comprises three subjects taken in a sequential teaching framework.

Semester 1
LHD400 Honours Research Methods (25 credit points)
LHD401 Honours Research Practice (25 credit points)

Semester 2
LHD402B Research Project (50 credit points)

Entry requirements
A degree from a recognised tertiary institution, in a course acceptable to the selection committee, with results of better than a credit average in Stage 2 and Stage 3 subjects, or a distinction average in Stage 2 and three subjects of a relevant discipline or its equivalent.

Application procedure
Applications should be made directly to Swinburne, Lilydale.

L078 Bachelor of Social Science (Honours)

The Honours program 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 enhance their research skills.

Aims & Objectives
The Honours program 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 enhance their research skills.

Campus
Lilydale

Career opportunities
Graduates with an Honours degree in Social Science will have enhanced employment opportunities in their chosen specialisation and discipline area: sociology, media, social research. In addition they will have the advantage of having multidisciplinary research skills and intensive team work experience. Students will be well prepared for professional employment in which conceptual and organisational and research skills are in demand. The honours course is also a recognised point of entry into postgraduate research studies.

L077 Bachelor of Business (Honours)

The Honours course at Swinburne’s Lilydale campus builds on the multi-disciplinary nature of the undergraduate programs currently offered at Lilydale. The program provides students with skills in research methodology in preparation for higher degrees, as well as the opportunity to undertake work integrated learning projects in industry, government and the community, as the basis of their Honours thesis.

Aims & Objectives
The Honours program 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 enhance their research skills.

Campus
Lilydale

Career opportunities
Graduates with an Honours degree in Business will have enhanced employment opportunities in their chosen specialisation and discipline area: marketing, management, accounting. In addition they will have the advantage of having multidisciplinary research skills and intensive team work experience. Students will be well prepared for professional employment in which conceptual and organisational and research skills are in demand. The honours course is also a recognised point of entry into postgraduate research studies.

L076 Bachelor of Applied Science (Honours)

The Honours course at Swinburne’s Lilydale campus builds on the multi-disciplinary nature of the undergraduate programs currently offered at Lilydale. The program provides students with skills in research methodology in preparation for higher degrees, as well as the opportunity to undertake work integrated learning projects in industry, government and the community, as the basis of their Honours thesis. Students may work on either individual or team projects. Cooperative learning and teamwork are integral to the learning environment of Swinburne, Lilydale.

Aims & Objectives
The honours program 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 enhance their research skills.

Campus
Lilydale

Career opportunities
Graduates with an Honours degree in Applied Science will have enhanced employment opportunities in their chosen specialisation and discipline area: marketing, management, accounting. In addition they will have the advantage of having multidisciplinary research skills and intensive team work experience. Students will be well prepared for professional employment in which conceptual, organisational and research skills are in demand. The honours course is also a recognised point of entry into postgraduate research studies.

Course duration
One year full-time.

Structure
The course comprises three subjects taken in a sequential teaching framework.

Semester 1
LHD400 Honours Research Methods (25 credit points)
LHD401 Honours Research Practice (25 credit points)

Semester 2
LHD402B Research Project (50 credit points)

Entry requirements
A degree from a recognised tertiary institution, in a course acceptable to the selection committee, with results of better than a credit average in Stage 2 and Stage 3 subjects, or a distinction average in Stage 2 and three subjects of a relevant discipline or its equivalent.

Application procedure
Applications should be made directly to Swinburne, Lilydale.
Course duration
One year full-time.

Structure
The course comprises three subjects taken in a sequential teaching framework.

**Semester 1**
- LHO400 Honours Research Methods (25 credit point)
- LHO401 Honours Research Practice (25 credit points)

**Semester 2**
- LHO402C Research Project (50 credit points)

Entry requirements
A degree from a recognised tertiary institution, in a course acceptable to the selection committee, with results of better than a credit average in Stage 2 and Stage 3 subjects, or a distinction average in Stage 2 and three subjects of a relevant discipline or its equivalent.

Application procedure
Applications should be made to Swinburne, Lilydale.

**National Institute of Circus Arts (NICA)**

The National Institute of Circus Arts (NICA) has been established as a centre of teaching excellence for professional training in the circus arts. Training is undertaken at NICA's purpose-built facility on the Prahran campus of Swinburne University of Technology in Melbourne.

Further information
Contact National Institute for Circus Arts (NICA) on:
Telephone: (03) 9214 6975
Facsimile: (03) 9214 6574
Email: nica@swin.edu.au
Website: nica.swin.edu.au/

**DCA10 Bachelor of Circus Arts**

The Bachelor degree curriculum has been developed following extensive consultation with both national and international circus and physical theatre industries. Circus is a global phenomenon and this is reflected in our trainers. Drawn from a variety of international and local backgrounds NICA trainers bring a wealth of expertise and knowledge that they are eager to pass on to the next generation of circus performers.

Aims & Objectives
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. Recent participants in our pilot projects and degree program have moved on to work with local and international companies eg. Cirque du Soleil, Circus Oz, Legs on the Wall, Circus Royale, Rock’n’Roll Circus, street festivals, and corporate work both across Australia and internationally.

Professional recognition
The course is committed to industry development, and is supported by the Circus Federation of Australia and the National Circus and Physical Theatre Association.

Course duration
Three years full-time.

Structure
The training program is structured as a three-year vocational degree course, with exit points at Certificate IV (after successfully completing Year 1) and Diploma (after successfully completing Year 2) and Bachelor of Circus Arts (after successfully completing Year 3).

The Certificate IV and Diploma of Circus Arts, together with the five enhancement subjects, equal Years 1 and 2 of the Degree in Circus Arts and will be equivalent to 200 credit points.

To receive the Diploma of Circus Arts, students must complete all core modules of the Certificate IV and the Diploma including two of the five specialist skill modules.

Admission into Year 3 of the program is by articulation or advanced standing only. Students who have satisfactorily completed Years 1 and 2, that is the Diploma of Circus Arts plus the five enhancement subjects, will proceed into Year 3 of the degree.

Year 3 of the course will operate under a student workload model based on 100 credit points for a full-time academic year.
Year 1 (Certificate IV)

Core modules
Anatomy and Physiology in Injury Prevention and Management
Basic First Aid
Cardiopulmonary Resuscitation
Communication in a Circus Workplace
Occupational Health & Safety and Security Procedures
Rigging 1
Conditioning through Basic Circus Skills 1
Dance and Movement 1
Introduction to Specialisation
Participation in Production 1
Performance Studies
Industry Based Practice

Enhancement modules
Critical Analysis 1
History of Circus

Year 2 (Diploma)

Core modules
Equipment
Make-up Application
Rigging 2
Voice Production
Conditioning Through Basic Circus Skills 2
Dance and Movement 2
Development and Presentation of an Act
Participation in Production 2
Performance Studies 2

Select two of the following specialty skills:
- Specialty Skills 1 – Advanced Ground Acrobatics
- Specialty Skills 2 – Advanced Acrobatics in Ground to Air Routines
- Specialty Skills 3 – Aerial Skills
- Specialty Skills 4 – Manipulation Skills
- Specialty Skills 5 – Comedy

Enhancement modules
Circus Culture
Critical Analysis 2
Skills for Small Business

Year 3 (Degree)

Semester 1
HDCA301 Circus and Arts Business Management Theory
HDCA302 Pre-production and Planning

Semester 2
HDCA303 The Production

Entry requirements
Entry is available to creative, talented and physical young people with backgrounds in:

- Performing Arts
- Physical Theatre
- Youth Circus
- Dance
- Acrobatic sports
- Gymnastics

Indigenous people are strongly encouraged to apply. For further information, contact Reece Kinsey, Swinburne’s Indigenous recruitment and support officer on (03) 9214 6824.

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: nica.swin.edu.au/
Subject Details

All subject descriptions are contained in this chapter. All subjects 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 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 subjects. Students are advised not to purchase textbooks or recommended readings until classes commence, unless they have consulted the lecture in charge of the subject.

HAA119 Post-War Italy

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
- Teaching methods: Lectures and Tutorial
- Assessment: Class presentation 25%, Class participation 10%, Class assignment 25%, Exam 40%
A subject in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Arts and Bachelor of Social Science.

Aims & Objectives

The aim of the subject is to explore 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.

Content

The subject will explore in a chronological as well as thematic way the history of events that have shaped Italy into a modern industrial nation since the Second World War. The subject will begin tracing the turbulent political period following the defeat of fascism in 1943 through to the eve of the 21st century. The significant events that will be touched on include:
- 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 1980s.

On the thematic side of the subject:
- 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 will be covered.

References


HAA181 Italy and Its Language 1

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil
- Teaching methods: Lecture and Tutorial
- Assessment: Two class tests 30%, Civilisation examination 15%, Attendance 10%, Language homework 10%, Final examination 35%
A subject in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

This subject is a practical introduction to the Italian language and culture for beginners. The subject 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 *Ci Siamo*, a language learning course which develops 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.

Textbook


References


HAA182 Italy and Its Language 2

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HAA181 or approved equivalent
- Teaching methods: Lecture and Tutorial
- Assessment: One class test 20%, Oral test 10%, Final language examination 45%, Language homework 10%, Civilisation examination 15%
A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

The subject extends the work carried out in HAA181. The program is designed to enhance the students’ communicative competence in Italian and reach a level where they are proficient to deal with a wide variety of everyday situations. The course also provides a historical perspective of the society and culture of modern Italy.

Content

The program is based on the text *Ci Siamo*, a language learning course which develops aural and oral 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.

Textbook


References


HAA184 Advanced Italian 1A

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: VCE Italian or equivalent
- Teaching methods: Lecture and Tutorial
- Assessment: Two language class tests 50%, Contemporary Italian presentation 5%, Contemporary Italian examination 20%, Civilisation examination 15%, Homework 10%
A subject in the Bachelor of Business / Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

This subject builds 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 introduces students to an appreciation of Italian society and culture by exposing them to the contemporary Italian language and a general contemporary cultural component.
The subject aims to provide students with a solid knowledge of the Italian language in Italy's contemporary culture. With the aid of audiovisuals, the students will be introduced to the appropriate registers and conventions required to interact successfully within the Italian cultural and business environments.

Content

The subject 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.

Aims & Objectives

The subject aims to provide students with a solid knowledge of the Italian language in Italy's contemporary culture. With the aid of audiovisuals, the students will be introduced to the appropriate registers and conventions required to interact successfully within the Italian cultural and business environments.

Content

The subject 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.

Aims & Objectives

The subject aims to provide students with a solid knowledge of the Italian language in Italy's contemporary culture. With the aid of audiovisuals, the students will be introduced to the appropriate registers and conventions required to interact successfully within the Italian cultural and business environments.

Content

The subject 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.

Aims & Objectives

The subject aims to provide students with a solid knowledge of the Italian language in Italy's contemporary culture. With the aid of audiovisuals, the students will be introduced to the appropriate registers and conventions required to interact successfully within the Italian cultural and business environments.

Content

The subject 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.

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Content

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Content

The subject 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.

Aims & Objectives

The subject aims to provide students with a solid knowledge of the Italian language in Italy's contemporary culture. With the aid of audiovisuals, the students will be introduced to the appropriate registers and conventions required to interact successfully within the Italian cultural and business environments.
HAA284  Advanced Italian 2A  
12.5 Credit Points  • 1 Semester  • 4 Hours per Week  • Hawthorn  • Prerequisite: HAA185  • Teaching methods: Lecture and Tutorial  • Assessment: Language test 15%, Homework 10% Literature and applied language test 30%, Oral presentation and report 20%, Final exam 25%  
A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.  

Aims & Objectives  
The subject 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.  

Content  
The subject aims to consolidate and deepen students’ proficiency through advanced grammatical exercises. The students’ active and passive vocabulary and grammatical structures are augmented by means of authentic materials in different linguistic registers and in different forms.  

References  
Il Nuovo Dizionario Garzanti, Garzanti, Italy (1088 pages).  

HAA285  Introductory Business Italian 2B  
12.5 Credit Points  • 1 Semester  • 3 Hours per Week  • Hawthorn  • Prerequisite: HAA284  • Teaching methods: Lecture and Tutorial  • Assessment: Final exam, Class assignments  
A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.  

Aims & Objectives  
The subject aims to provide students with a solid knowledge of the Italian language in Italy’s contemporary culture. With the aid of audiovisuals, the students will be introduced to the appropriate registers and conventions required to interact successfully within the Italian cultural and business environments.  

Content  
The subject provides background information on the Italian economy and its role within the European Union. The language tutorials develop the appropriate language required in Italian business communications.  

Reference  

HAA286  Advanced Italian 2C  
12.5 Credit Points  • 1 Semester  • 4 Hours per Week  • Hawthorn  • Prerequisite: HAA284  • Teaching methods: Lecture and Tutorial  • Assessment: Grammar test 15%, Final grammar exam 25%, Homework 10%, Test on language extension and literature 40%, Presentation 10%  
A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.  

Aims & Objectives  
The first part of the program relates to grammar and aims to consolidate and deepen students’ proficiency through advanced grammatical exercises, authentic texts, films and television programs in Italian.  
The second part of the program focuses on different language theories by exposing students to authentic materials from different periods, in different linguistic registers and in different forms.  

Content  
The subject consists of grammar revision, conversation and language extension work emphasising a variety of linguistic registers and specific languages using different texts and theories.  

Textbooks  
Il Nuovo Dizionario Garzanti, Garzanti, Italy (1088 pages).  

HAA289  Comparative European Politics  
12.5 Credit Points  • 1 Semester  • 2 Hours per Week  • Hawthorn  • Prerequisite: Nil  • Teaching methods: Lectures and Tutorial  • Assessment: Essay 20% Presentation 20% Class participation 10% Final exam 50%  
A subject in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.  

Aims & Objectives  
This subject aims to explore a comparison between the four major European nations (Germany, France and Britain and Italy) in their march towards European Union. The subject content will examine the issues, the politics and policies adapted and the points of reference of the countries mentioned in how they confront the issues of the 21st century.  

Content  
The subject will explore in a chronological as well as thematic basis the key events which shaped these European countries into a modern industrial nation since the Second World War. The subject 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.  

Reference  

HAA377  International Business in the Italian Context  
12.5 Credit Points  • 1 Semester  • 2 Hours per Week  • Hawthorn  • Prerequisite: At least two stage 2 subjects  • Teaching methods: Seminar  • Assessment: Class presentation 20% Assignment 20% Class participation 10% Final exam 50%  
A subject in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.  

Aims & Objectives  
The main aim of this subject 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 subject 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  
HAA381 Italian 3X

12.5 Credit Points  •  1 Semester  •  3 Hours per Week  •  Hawthorn  •  Prerequisite: HAA283 or HAA286  •  Teaching methods: Lecture and Tutorial  •  Assessment: Grammar test 20%, Final examination 40%, 3 reports (x 10%) 30%, Online forum 10%

A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
The subject aims to develop students' proficiency in Italian language and culture. Students will deepen their understanding of contemporary Italian society and gain insights into the Italian business world. The subject provides a foundation for further study in Italy or Latina American studies.

Content
The subject consists of grammar revision, conversation and language extension. The subject will focus on the Italian business world and contemporary Italian society. The subject will cover a wide range of authentic materials and business-related texts.

Textbooks
- Il Garzanti: Dizionario Italiano, ISBNB844006019.

References

HAA387 Advanced Business Italian

12.5 Credit Points  •  1 Semester  •  3 Hours per Week  •  Hawthorn  •  Prerequisite: HAA283 or HAA286  •  Teaching methods: Lecture and Tutorial  •  Assessment: Class test 20%, Final examination 40%, Three written reports (x 10%) 30%, Attendance and participation 10%

A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
The subject aims to develop students' proficiency in Italian business language and Italian's business environment. 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.

Content
The subject provides a wide range of authentic materials and business-related texts.

Textbook

Reference

HAA388 Contemporary Italy

12.5 Credit Points  •  1 Semester  •  3 Hours per Week  •  Hawthorn  •  Prerequisite: HAA283 or HAA286  •  Teaching methods: Lecture and Tutorial  •  Assessment: Four fortnightly reports (x 10%) 40%, Seminar presentation and written report 20%, Final examination 30%, Attendance and participation 10%

A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
The aim of the subject 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 analysing and discussing contemporary Italian society and they will be exposed to specific types of Italian sectorial language, e.g. socio-economic and environmental phraseology, 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 to and participate in all classes. It is expected that all lectures, class discussions and seminar presentations will be conducted in Italian.

Content
The subject concentrates on aspects of Italian society (the family, women, youth), politics and economy. 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.

Textbook

HAA440 Italian Seminar A

25 Credit Points  •  1 Semester  •  2 Hours per Week (plus up to 3 hours in supplementary subject)  •  Hawthorn  •  Prerequisite: Nil  •  Teaching methods: Seminars, lectures  •  Assessment: Presentation, Written assignment, Research Methodology assessment

A subject 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
Forthnightly 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, HASP306 Quantitative Research Methods or HASP307 Qualitative Research Methods, according to research proposal.

Recommended reading
Texts will be selected from the following, according to student’s research proposal:
Moretti, N., Caro Diario (Film), 1997.
Troisi, M., Il Postino (Film), 1994.

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 seminars) • Hawthorn • Prerequisite: HAA440 • Teaching methods: Seminar discussions and language instructions • Assessment: Presentation in Italian, Major assignment

A subject 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
Forthnightly 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.

Recommended reading
Texts will be selected from the following, according to student’s research proposal:
Bellecchi, M., L’ Ora di Religione, (Film), 2002.
De Carlo, A., Macro, Bompiani, Milano, 1984.
Mazzantini, M., Non ti Muovere, Mondadori, Milano, 2002.
Moravia, A., La Noia, Bompiani, Milano, 1966.
Moretti, N., La Stanza del Figlio, (Film), 2002.
Salvatore, G., Io Non ho Paura, (Film), 2003.

HAA442 Italian Thesis A
25 Credit Points • 1 Semester • 1 Hour per Week (consultation with supervisor) • Hawthorn • Prerequisite: Nil • Teaching methods: Consultation with supervisor • Assessment: Evidence that student is working systematically on a thesis (12,000–15,000 words if written in English, 10,000–2,000 words if written in Italian). Work is not assessed until completion of Thesis B.

A subject 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 consultation 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.

Recommended reading
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 • Teaching methods: Consultation with supervisor • Assessment: Thesis (12,000–15,000 written in English or 10,000–12,000 written in Italian (continued from Thesis A)).

A subject 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.

Recommended reading
Discipline specific reading as advised by the thesis supervisor.

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 • Teaching methods: Seminars • Assessment: 2 Essays

A subject in the Bachelor of Arts (Honours) Media and Cultural Studies Strand

Aims & Objectives
The aim of this subject 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, 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, hermeneuticist, post-structuralist, Marxist and neo-Marxist theories of culture will be looked at. The dialectic of representation, of recognition and labour will be examined from these different theoretical frameworks. The main theorists whose work will be considered are Jameson, Harvey, Barthes, Saussure, Peirce, Levi-Strauss, Ricoeur, Lacan, Althusser, Zizek, Bakhitin, Derrida, Bourdieu, Foucault, Gramsci, Lukacs, Adorno, Benjamin, and Habermas. In the final week, postmodern science will examined as a cultural phenomenon.

Recommended reading
The subject 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 Eurocentricism, theories and critiques of nationalism, critiques of ‘orientalism’, subaltern studies, theories of the global system of states, 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.

Recommended reading

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.

Recommended reading
 Discipline specific reading as advised by thesis supervisor.

HAC443 Media and Cultural Studies Thesis B

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, meta-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:
1. 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.
2. Other Studies: A student is required to attend a number of other class sessions in one other subject 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.

Recommended reading

Swinburne University of Technology | Undergraduate Course Handbook 2004
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.

Recommended reading

Discipline specific reading as advised by the thesis supervisor.

HAF441 Social Science Seminar B

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.

Content

Provides instruction and support for students in completing their research and in the organisation and communication of research findings. Provides a forum for the discussion of research results. Issues discussed include practical problems in gathering and interpreting evidence and data, analysis and interpretation of data, relating findings to theory, organisation of information and writing and editing skills.

Recommended reading


HAF442 Social Science Thesis A

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 consultation 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.

Recommended reading

Discipline specific reading as advised by the thesis supervisor.

HAF443 Social Science Thesis B

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.

Recommended reading

Discipline specific reading as advised by the thesis supervisor.

HAF100 Introduction to Philosophy

Aims & Objectives

This subject 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 subject 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

Aims & Objectives

This subject 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 subject 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 course 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.

Recommended reading

HAH103 Critical Thinking
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: Lectures and Tutorials • Assessment: Class tests, Essay
A subject in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Arts (Psychology/Psychophysiology); Bachelor of Social Science; Bachelor of Social Science (Psychology); and Bachelor of Science (Psychology/ Psychophysiology).

Aims & Objectives
The aim of this course 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.

Recommended reading

HAH209/HAH309 Philosophy of Culture
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: Seminars • Assessment: Presentation, Attendance, Participation in seminars, Essay.
A subject in the Bachelor of Arts, Bachelor of Arts (Media and Communication), Bachelor of Social Science and Bachelor of Social Science (Psychology). This subject can be taken at Stage 2 or Stage 3.

Aims & Objectives
The aim of this subject 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 subject 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 subject concludes by looking at some recent research which has fulfilled the potential of cultural studies. The subject is designed to function as a core unit in a culture studies major.

Recommended reading
Course Reader

HAH210/HAH310 Philosophy, Media, Culture
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: Seminars • Assessment: Assignments, Tutorials
A subject in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science, and Bachelor of Social Science (Psychology). This subject can be taken at Stage 2 or Stage 3.

Aims & Objectives
To examine the social, cultural and political transformations brought about by the development of new media.

Content
The subject will examine the evolution of media, what Walter Ong calls the 'technologisation of the word' from oral cultures, through the development of literacy and print media to electronic media, showing how this evolution has been associated with radical transformations in cognition, in identity formation and in social and political relations. This would suggest that the introduction of new media can be expected to generate massive social, economic and political changes requiring a fundamental rethinking of what it means to be human, how we should live and how society could be organised. Using Bourdieu's notion of 'field' and examining the relationships between different fields, the nature of these possible changes will be analysed.

Recommended reading
HAH222/HAH322  Practical Ethics

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil

Aims & Objectives
The aim of this subject 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 subject 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.

Recommended reading
Elliot, 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

Aims & Objectives
The subject 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 course examines the cultural, social and economic roots of this crisis, with specific reference to Australia, and considers the action 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.

Recommended reading
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

Aims & Objectives
The central question addressed in this course 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 course 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 additions 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.

Recommended reading

HAH225/HAH325  Philosophy, Politics, and Society

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil

Aims & Objectives
This subject 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 promises 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.


Kymlicka, W., Contemporary Political Philosophy, Oxford University Press, 1990.


Wolff, W., An Introduction to Political Philosophy, Oxford University Press, 1996.

**HAH226/HAH326 Knowledge, Reason, and Society: Contemporary Issues and Perspectives**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil

Teaching methods: Seminars • Assessment: Essays, Seminar presentation, Attendance and participation.

A subject in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science and Bachelor of Social Science (Psychology). This subject can be taken at Stage 2 or Stage 3.

**Aims & Objectives**

This subject explores problems surrounding the traditional quest for knowledge, understanding and truth through reasoned inquiry in the wake of significant advances in our contemporary self-conception. In so doing, it aims to elucidate implications for living as well as for theory.

**Content**

The specific questions considered include the following:

• 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 practice 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.

**Recommended reading**

Please consult with lecturer before buying recommended readings.


**HAI440 Industry and Community Studies Seminar A**

25 Credit Points • 1 Semester • 2 Hours per Week (plus up to 3 hours in supplementary studies) • Hawthorn • Prerequisite: Nil • Teaching methods: Seminars, Lectures • Assessment: Research proposal, Class presentation, Paper on epistemology, Draft literature review, Assessed work from supplementary subject (or project)

A subject 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 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:

1. 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.

2. Other Studies: A student is required to attend a number of other class sessions in one other subject 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.

**Recommended reading**


**HAI441 Industry and Community Studies Seminar B**

25 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: HA1440 • Teaching methods: Seminars • Assessment: Critical review of a thesis, Draft chapter, Paper evaluating research strategies

A subject 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.

Content
Provides instruction and support for students in completing their research and in the organisation and communication of research findings. Provides a forum for the discussion of research results. Issues discussed include practical problems in gathering and interpreting evidence and data, analysis and interpretation of data, relating findings to theory, organisation of information, and writing and editing skills.

Recommended reading

HAJ1442 Industry and Community Studies Thesis A
25 Credit Points • 1 Semester • 1 Hour per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Applied research in collaboration with an organisation, Consultation with supervisor • Assessment: Evidence that the student is working systematically on a 14,000–20,000-word thesis. Work is not graded until the completion of Thesis B.
A subject in the Bachelor of Arts (Honours) Industry and Community 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 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 undertake a program of applied research in collaboration with an organisation which will benefit from the research. In some instances, an applied research program may be undertaken outside Australia. Appropriate organisations for research collaboration include government departments, quasi-government organisations, community organisations, unions, private companies and religious organisations. Students are guided by an academic supervisor at Swinburne and a designated supervisor in the host organisation.

Recommended reading
Discipline-specific reading as advised by thesis supervisor.

HAJ1443 Industry and Community Studies Thesis B
25 Credit Points • 1 Semester • 1 Hour per Week • Hawthorn • Prerequisite: HAJ1442 • Teaching methods: Consultation with supervisor • Assessment: 14,000–20,000-word thesis
A subject in the Bachelor of Arts (Honours) Industry and Community 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.

Recommended reading
Discipline-specific reading as advised by thesis supervisor.

HAJ102 Introduction to Japan: A Cultural Overview
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures and Tutorial • Assessment: Oral tutorial presentation 20% Essay on the tutorial presentation topic 30% Test 40% Participation 10%
A subject 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 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 subject are in English.

Textbooks

Recommended reading

HAJ107 Introductory Japanese 1A
12.5 Credit Points • 1 Semester • 6 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Classwork and Computer Laboratory • Assessment: Mid-semester test 40% Final examination 50% Class participation 10%
A subject 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, aural 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 subject outline provided by your lecturer in class.

HAJ108 Written Japanese 1B
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ107 or equivalent competence in written language. • Corequisites: HAJ108 • Teaching methods: Grammar and reading and writing, Classwork and Computer Laboratory. • Assessment: Mid-semester test final examination, Class participation
A subject 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 subject 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.

**Textbooks**
Mizutani, N., Mizutani, O., Nihongo Notes, Vols 1–2, The Japan Times.
Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

**HAJ109 Spoken Japanese 1B**
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ107 or equivalent competence in spoken language. • Corequisites: HAJ108 • Teaching methods: A combination of audiovisual work and Conversation classes. • Assessment: Mid-semester test, Final test, Class performance
A subject 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**
This subject, 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.

**Textbooks**
Textbooks are subject to revision each year. Please refer to subject 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 competence in written and spoken language. • Teaching methods: Classwork and Computer laboratory work. • Assessment: Mid-semester test, Final examination, Class performance.
A subject 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**
Mizutani, N., Mizutani, O., Nihongo Notes, Vols 1–2.
Textbooks are subject to revision each year. Please refer to subject 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 or equivalent competence in written language. • Corequisites: HAJ132 • Teaching methods: Classwork and Computer laboratory work. • Assessment: Mid-Mid-semester test, Final examination, Class performance
A subject 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 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 subject extends the range of grammar patterns, kanji and reading texts. Study of these components is reinforced by computer-based exercises.

**Textbooks**
Mizutani, N., Mizunati, O., Nihongo Notes, Vols 2–3.
Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

**HAJ133 Advanced Spoken Japanese 1B**
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ131 or equivalent competence in spoken language. • Corequisites: HAJ132 • Teaching methods: Aural comprehension and Conversation classes. • Assessment: Mid-Mid-Mid-semester test, Final test, Class performance.
A subject 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 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.

**Textbook**
Textbooks are subject to revision each year. Please refer to the subject outline provided by your lecturer in class.

**HAJ202 Communication in Japanese**
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ102. Highly recommended HAJ107 or HAJ131 • Teaching methods: A weekly 2-hour seminar • Assessment: Seminar presentation 20% Research paper 30% Test 40% Attendance 10%; Participation
A subject 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 aims of this subject are to 'fill the gap' by supplementing the language with competence in Japanese communication patterns.

Content
This subject 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 subject is organised as a series of seminars and involves active participation of all students.

Textbook

HAJ215 Intermediate Japanese 2A
12.5 Credit Points • 1 Semester • 6 Hours per Week • Hawthorn • Prerequisite: HAJ108 and HAJ109 or equivalent competence in written and spoken Japanese. • Teaching methods: Classroom and Computer laboratory work. • Assessment: Mid-semester test, Final examination, Class performance
A subject 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.

Textbooks
Mizutani, N., Mizutani, O., NIHONGO Notes, Vols 1–2.
Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

HAJ217 Written Japanese 2B
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ215 or equivalent competence in written Japanese. • Corequisites: HAJ219 • Teaching methods: Classroom and Computer laboratory work. • Assessment: Mid-semester test, Final examination, Class performance
A subject in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
The aim of this subject 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.

Textbooks
Mizutani, N., Mizutani, O., NIHONGO Notes, Vols 2–3.
Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

HAJ218 Spoken Japanese 2B
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ215 or equivalent competence in spoken Japanese. • Corequisites: HAJ218 • Teaching methods: Classroom and Computer laboratory work. • Assessment: Mid-semester test, Final examination, Class performance
A subject 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 unabridged 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.

Reference

Textbooks are subject to revision each year. Please refer to subject 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, HAJ132 and HAJ133 or equivalent competence in Japanese. • Corequisites: HAJ232 • Teaching methods: Classroom and Computer laboratory work. • Assessment: Minor test; Mid-semester test; Final examination & Class performance
A subject in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
The aim of this subject 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 correct usage of honorifics in general.

Textbooks
Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

HAJ232 Advanced Spoken Japanese 2A
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ131, HAJ132 and HAJ133 or equivalent competence in Japanese. • Corequisites: HAJ231 • Teaching methods: Classroom • Assessment: Minor tests; Mid-semester test; Final examination & Class performance
A subject in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.
Aims & Objectives
The aim of this subject 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 and in business situations.

Textbook

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 exposure to kanji (Chinese characters) on various topics.

Content
The course includes two components: reading (unabridged texts) and composition writing (approximately 700 kanji and kana) focussed on different writing styles.

References

Textbook
Subject is at the discretion of the convener. 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: Students will be required to complete and submit a professional diary during the work experience and submit a project on a topic which relates the work experience to the key issues touching Japanese and Japanese integration. The student will be expected to submit this project no later than one month after the completion of the experience. An assessment by the employment will also be used for assessing the performance of the student.

Aims & Objectives
The aim of this elective subject 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 subject further provides students with the linguistic and cultural competence and skills critical to the international trade environment.

Content
Employment in a company or organisation in Japan.

Some of the topics to be covered during the subject 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

Textbook
Subject to placement. Will be advised on an individual basis.

References

Aims & Objectives
The aim of this subject is to continue extending students' competence in the written language through reading of 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 subject is designed to build Japanese communication skills. The course is comprised of the components of reading, writing and grammar.

Textbook
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 subject 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. Listening is based on current video materials.

Textbooks
Nawano, T., Japan & Australian: Culture & Business, Japanese Section.
Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

HAJ323 Written Japanese 3B
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HAJ322 or equivalent competence in written Japanese • Corequisites: HAJ324 • Teaching methods: Classwork • Assessment: Minor tests, Mid-semester test, Final examination, Class performance.
A subject in the Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
To continue extending students’ knowledge of the language through reading introductory business related documents and training in oral expression with emphasis on correct use of the full range of speech registers.

Content
This subject 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.

Textbook

Reference
Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

HAJ331 Advanced Written Business Japanese
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HAJ325 • Corequisites: HAJ330 • Teaching methods: Classwork • Assessment: Mid-semester test, Final test, Weekly tests, Projects, Class performance.
A subject in the Bachelor of Business/Bachelor of Arts (Japanese).

Aims & Objectives
This subject introduces students to a range of contemporary Japanese written documents relating to business communication.

Content
The study of this subject involves reading a wide range of business related documents and training business letters, faxes and similar. Approximately 200 Kanji (Chinese characters) are also studied.

Textbooks
Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

HAJ332 Advanced Spoken Business Japanese
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HAJ326 • Corequisites: HAJ329 • Teaching methods: Classwork • Assessment: Interview debate, Presentation, Visitor session, Weekly tests, Class performance, Final test (Listening) 20%.
A subject in the Bachelor of Business/Bachelor of Arts (Japanese).

Aims & Objectives
This subject 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
The study of this subject involves extensive practice in speaking in a variety of simulated business situations. Development of listening skills involves listening to tapes and viewing videos.

Textbooks
Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.
HAJ333  Advanced Business Readings and Communication

12.5 Credit Points  • 1 Semester  • 4 Hours per Week  •  Hawthorn  • Prerequisite: HAJ330 or HAJ229  • Teaching methods: Classwork  • Assessment: Assignments, Mid-semester test, Final test

A subject in the Bachelor of Business/Bachelor of Arts (Japanese).

Note: This subject is currently under development and will be introduced in 2004.

Aims & Objectives

The aim of this subject is to fulfill 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 subject 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

Textbooks

Textbooks are subject to revision each year. Please refer to the subject 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: Nil  • Teaching methods: Seminar discussions and language instruction  • Assessment: Presentation, Assignment, Assessed work in supplementary studies

A subject 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

Fortnightly seminar conducted in Japanese. These 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 HAF441 Social Science Seminar B or HAC441 Media and Cultural Studies Seminar B.

Recommended reading


HAJ441  Japanese Seminar B

25 Credit Points  • 1 Semester  • 3 Hours per Fortnight (plus up to 3 hours per week in Social Science or Media and Cultural Studies seminars)  •  Hawthorn  • Prerequisite: HAJ440  • Teaching methods: Seminar discussions and language instruction  • Assessment: Presentation in target language, Major assignment

A subject in the Bachelor of Arts (Honours) Languages Strand

Aims & Objectives

To increase students' proficiency in the language which they are studying; to give students a greater understanding of the cultural, political and social aspects of 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 HAF441 Social Science Seminar B or HAC441 Media and Cultural Studies Seminar B.

Recommended reading


HAJ442  Japanese Thesis A

25 Credit Points  • 1 Semester  • 1 Hour per Week  •  Hawthorn  • Prerequisite: Nil  • 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 subject 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 consultation 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.

Recommended reading

Discipline specific reading as advised by thesis supervisor.

HAJ443  Japanese Thesis B

25 Credit Points  • 1 Semester  • 1 Hour per Week  •  Hawthorn  • Prerequisite: HAJ442  • Teaching methods: Consultation with thesis supervisor  • Assessment: 12,000–15,000-word Thesis

A subject 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.
HAL103  Writing Fiction
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
Teaching methods: Lectures and Tutorials • Assessment: Journal, creative writing folio, participation.
A subject in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Social Science and Bachelor of Social Sciences (Psychology).

Aims & Objectives
This subject 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 stressed, together with techniques for developing these personal skills.

Content
An introduction to techniques of critical and creative thinking will be provided; for example, plugging into 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 or approved equivalent, HAP100 (for students majoring in Australian Studies) • Teaching methods: Lectures and Tutorials • Assessment: Participation, research project, major project, class presentation.
A subject in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Social Science and Bachelor of Social Science (Psychology).

Aims & Objectives
This subject 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 to do 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), 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 subjects, or approved equivalents • Teaching methods: Lectures and Tutorials • Assessment: Participation, research project, major project, class presentation.
A subject in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Social Science and Bachelor of Social Science (Psychology).

Aims & Objectives
The principal subject of this course 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 subject 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
Teaching methods: Lectures and Tutorials • Assessment: Essays, Classwork.
A subject in the Bachelor of Arts, Bachelor of Arts (Media & Communications), Bachelor of Social Science, Bachelor of Multimedia (Media Studies), and an elective subject in the Bachelor of Film and Television.

Aims & Objectives
Through the examination of texts drawn from literature, film, television, video and new media forms, this subject 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 from 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 subject 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 intellectual curiosity 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 (hypertext and interactive multimedia)?

Recommended reading

HALM200  Reading, Writing and Criticism
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HALM104 or approved equivalent • Teaching methods: Lectures and Tutorials • Assessment: Essays, Folio Presentations, Participation.
A subject in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Social Science and Bachelor of Social Science (Psychology).

Aims & Objectives
This subject 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 subject 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 course 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


HALM201 Media Voices, Media Style: The Process of Journalism

Content
Newspapers, radio and television all report the news. However, while they may report the same events, each medium has a different ‘news voice’ resulting from its particular set of institutional practices and constraints which shape how events are reported both in Australia and internationally.

Aims & Objectives
This subject 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.

HALM206 Issues in Electronic Media

Content
The viewing material for this subject is a selection of films arranged generically (eg. romantic comedy, horror, or science fiction), thematically (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.

Aims & Objectives
The aim of this subject is to introduce students to key issues relating to electronic media technologies. In particular, it aims to provide you with frameworks for understanding the genealogies of new media and their relationships to older technologies. Students will be asked such questions as:

- What is a medium?
- What is technology?
- What is culture?
- How do these interact with each other?

Using debates which focus on the relations between the body, mind and new media technologies, you may even be asked to consider what it means to be human.

Recommended reading


Grant, B.K. (ed.), Film Genre Reader, University of Texas Press, Austin, 1986


CineAction, Cinema Papers, The Journal of Popular Film and Television, Film Comment, Sight and Sound, Film Quarterly.
HALM316 Electronic Writing

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Two Stage 2 Literature subjects, one of which must be HALM210, or two Stage 2 Media Studies subjects, one of which must be HALM205 • Teaching methods: Lectures and Tutorials • Assessment: Glossary exercise, major assignment, class participation/reading journal.

A subject 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 subject 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 decentered, 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: 5 Literature/ Media Studies subjects • Teaching methods: Supervised project • Assessment: Journal, workbook, weblog, project.

A subject in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science and Bachelor of Social Science (Psychology).

Content
In this subject, 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) targeted and delivered to a client. 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. Eligibility for this program will depend upon the student having a project on which they have been previously working (say, a book of poems, a novel, a critical essay) which has been approved by the subject convenor. The subject 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 subject 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 subject in the Bachelor of Film and Television.

Aims & Objectives
This subject 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 subject 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 • Teaching methods: Lectures and Workshops • Assessment: Attendance, Short Academic Paper, Corporate Report, Presentation.

A subject in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Social Science; and Bachelor of Social Science (Psychology).

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 subject 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 subject:

- 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

Recommended reading
HAM210 Popular Culture
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAML104 or HAML105 • Teaching methods: Lectures and Tutorials • Assessment: Major essay, journal, attendance, participation, minor essay, test.
A subject 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 subject 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 subject 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 subject will also consider the commercial and institutional imperatives shaping popular culture and its multiple relations to political processes.

Major theoretical reference points in this subject 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 and HAML105 • Teaching methods: Lectures and Tutorials • Assessment: Attendance, Media Diary, Essays, Exam
A subject 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 subject 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, WebTV, 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 subject:
- 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: HAML104 or HAML105 and any other Stage 2 Media Studies subject or equivalent • Teaching methods: Lectures and Tutorials • Assessment: vox pop assignment, interview assignment, radio program proposal, radio program assignment, participation.
A subject 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 subject 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 text[e], Semiotics[e], Columbia University, New York, 1993.
Hicks, M., Radio on Radio, [Audio tapes], Swinburne, 1985.
Ong, W., Orality and Literacy, Methuen, London, 1982.

HAM314 Professional Attachment Program
12.5 Credit Points • 1 Semester (comprises 15 days of full-time work) • Nil • Hawthorn • Prerequisite: 6 Media Studies subjects (this subject is only available to BA (Media and Communications) students) • Teaching methods: Supervision • Assessment: Continuous (pass/fail only).
A subject 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 subject 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 subject 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.

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HAM315  Information Society: A Global Perspective

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAMIL54 or HAMIL15 and two Stage 2 Media Studies subjects or equivalent. There are no prerequisites for students who are required to undertake this subject in the Bachelor of Engineering (Telecommunications and Internet Technologies)/Bachelor of Science (Computer Science and Software Engineering); and Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies). • Teaching methods: Lectures and Tutorials • Assessment: Attendance, media diary, essay, exam.

Aims & Objectives
This subject 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 subject explores the impact of information and communications technologies (ICTs) at a global level.

Content
This subject 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 vexed 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.

Recommended reading

HAM316  Radio Production and Criticism B

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAM313 • Teaching methods: Lectures and Laboratories • Assessment: Montage assignment, interview assignment, proposal assignment, radio documentary, participation.

This subject is ONLY available to Bachelor of Arts (Media and Communications) students.

Aims & Objectives
This course aims to extend the knowledge gained by students in HAM313 and allows students to apply and extend their radio 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 course is on praxis – 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 others’ 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., Radiotext(e)s, Semiotext(e)s, Columbia University, New York, 1993.
Hicks, M., Radio on Radio, (Audio tapes), Swinburne, 1985.
Ong, W., Orality and Literacy, Methuen, London, 1982.

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 subject 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).

Aims & Objectives
This subject 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 subject, 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 subject 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 subject 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 • Teaching methods: Lectures and Tutorials • Assessment: Essays, Tutorials
A subject in the Bachelor of Social Science, Bachelor of Social Science (Psychology), Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Arts (Psychology/Psychophysiology).

Aims & Objectives
After completing this subject 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 subject 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 dipolamy and security issues based on them. The subject 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 subject...
highlights many issues relevant to the conduct of Australian foreign affairs and trade policy.

**Recommended reading**


**HAP221/HAP321 Modern Australia**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil

- Teaching methods: Lectures and Tutorials • Assessment: Essays, Participation

A subject in the Bachelor of Social Science, Bachelor of Social Science (Psychology), Bachelor of Arts (Psychology/Psychophysiology), Bachelor of Arts (Media and Communications), and Bachelor of Arts. This subject may be taken at Stage 2 or Stage 3.

**Aims & Objectives**

The subject aims to provide an analytical assessment of the more dramatic developments in the Australian political system during the twentieth century.

**Content**

This subject explores the patterns of change that have shaped contemporary Australia. It starts 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 those 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 subject concludes with a study of the ways in which recent governments have tried to adapt national interests to a rapidly changing world.

**Recommended reading**


**HAP228/HAP328 Globalisation: Transformations in World Politics, Economy and Culture**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil

- Teaching methods: Lecture, Tutorials • Assessment: Stage 2 – tests, Class presentation, 2,500-word essay. Stage 3 – Tests, Class presentation, 3,000-word research report

Bachelor of Social Science, Bachelor of Social Science (Psychology), Bachelor of Arts, Bachelor of Arts (Media and Communications). This subject may be taken at Stage 2 or Stage 3.

**Aims & Objectives**

After completing this subject students should have developed an understanding of:

- the nature of contemporary global capitalism;
- its impact on the nation-state and on peoples;
- the arguments advanced for and against globalisation.

Students should also have developed their skills in research and communication.

**Content**

- The Debate on Globalisation
- Technological Change and the Expansion of the World Market
- The Rise of Multinational Corporations
- The Global Dominance of Finance-Capital
- Labour in the Age of Global Capitalism
- The Nation-State in the Age of Global Capitalism
- Economic Miracles, Economic Crises: The Clash of Capitalisms in the Global Arena
- McDonalds vs McJihad: The Conflict of Civilisations and the New Politics of Violence
- Progressive Globalism

**Recommended reading**


**HAP229/HAP329 Politics in Pacific Asia**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil

- Teaching methods: Lectures and Tutorials • Assessment: Stage 2 – Tests, 1,500-word essay, 2,500-word essay, Tutorial attendance. Stage 3 – Tests, 1,500-word essay, 3,000-word research report, Tutorial attendance

A subject in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science, Bachelor of Social Science (Psychology). This subject may be taken at Stage 2 or Stage 3. It will not be offered in 2004, but may be offered in subsequent years.

**Aims & Objectives**

After completing this subject students should have developed an understanding of:

- economic, social and political forces shaping the contemporary Asia Pacific region;
- the processes of governance and policy-making in a range of countries in the region;
- processes of elite rule and democratization;
- the impact of countries such as the US, China and Japan on the region, and its importance to Australia.

Students should also have developed their skills in research and communication.

**Content**

- State forms and political struggles.
- Red star over Asia.
- The Japanese state.
- Independence and state-building in Southeast Asia.
- Politics in Anglo states.
- Elite governance: bureaucrat, business and the military.
- Challenging the political order: social movements.
- The political economy of the Asia Pacific.
- Welfare and social issues.
- Sayonara to the strong state: from government to governance.

**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 or HAP117, other students with permission from the convenor. • Teaching methods: Lectures and tutorials • Assessment: Level 2 – Tests, Class presentations, 2,500-word essay. Level 3 – Tests, Class presentation, 3,000-word research report

A subject 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 subject, 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 subject 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 subject is on concepts and theory, but it relates these to real-world situations through a variety of case studies.

Recommended reading

HAP332 Internship in Political Research
25 credit points • 1 Semester (but may be taken in intensive mode) • 2 Hours per Week or equivalent • Hawthorn • Prerequisite: Distinction average in Politics subjects in Stage 2 and 3 • Teaching methods: Two hours of class contact per week plus two days per week in the host organisation. Intensive mode: five weeks of full-time work in the host organisation plus weekly consultation with supervisor. • Assessment: Preliminary analysis and work plan, research report of 5,000 words, reflective essay.
A subject in the Bachelor of Social Science, Bachelor of Social Science (Psychology), Bachelor of Arts and Bachelor of Arts (Media and Communications).

Aims & Objectives
The aim of this subject is to provide outstanding students with first-hand experience of operating in the Australian political environment. The student will develop skills in:
- Carrying out independent research
- Evaluating evidence on topical issues impartially
- Policy analysis
- Managing a research project and meeting strict deadlines

Content
Before the internship commences, students will undertake a one-day orientation program in which they are required to undertake a preliminary analysis of the research question and prepare a provisional work plan for carrying out their research project. During the course of the internship, students will work under the supervision of a Swinburne Politics staff member and a senior officer of the host organization in preparing a research report of 5,000 words.

Reading Materials

HAS100 Sociology 1A (Introductory Sociology)
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Essay and Examination
A subject 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/ 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
The sociological perspective; sociological investigation; society; culture; socialisation; social interaction in everyday life; group and organisations; social stratification and social class; race and ethnicity; gender and sexuality; age stratification.

Required Reading

HAS101 Sociology 1B (Social Institutions and Social Change)
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAS100, or with permission from the subject convenor • Teaching methods: Lectures and Tutorials • Assessment: Essay and Examination
A subject 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/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.

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).
Required reading

HAS296  The Family, Sex and Society
12.5 Credit Points  • 1 Semester  • 3 Hours per Week  • Hawthorn  • Prerequisite: HAS100, HAS101  • Teaching methods: Lectures and Tutorials  • Assessment: Essay and examination
A subject in the Bachelor of Social Science, Bachelor of Social Science (Psychology), Bachelor of Arts and Bachelor of Arts (Media and Communications).
Note: This subject was formerly HAS297 Family, Sexuality and Society.

Aims & Objectives
• To develop an understanding of changing familial and sexual behaviours and ideologies.
• To develop an understanding of Australian patterns in international context.
• To develop an understanding of family research theories and methodologies.

Content
• Social theory
• Demography
• Family formation
• Sexual behaviour and identity
• Relationships, marriage and divorce
• Children
• Family violence
• Extended kinship and community
• Comparative social policy
• Genetics and families
• IT and families

Recommended reading

HAS298  Sociology of Deviance and Social Control
12.5 Credit Points  • 1 Semester  • 3 Hours per Week  • Hawthorn  • Prerequisite: HAS100 and HAS101  • Teaching methods: Lectures and Tutorials  • Assessment: Class presentations, Essay and examination.
A subject 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 and differentiate between different sociological perspectives used in the analysis of social control.
• To enhance the ability to identify the social policy implications that stem from the application of a sociological perspective to a substantive area.

Content
• Theorising social control
• Moral panic and the creation of folk devils
• Social control regulation & compliance
• The social construction of crime
• Corporate and occupational crime
• Medicine, illness and deviance
• Women, law and social control
• Deviant identity, the body, regulation & control
• Control by experts: risk, surveillance and child abuse
• Disability and the construction of difference
• Social disadvantage, welfare and social control

Recommended reading

HAS303  Genome: Biotechnology and Society
12.5 Credit Points  • 1 Semester  • 3 Hours per Week  • Hawthorn  • Prerequisite: HAS100, HAS101 and at least one second year Sociology subject or with special permission from course convenor  • Teaching methods: Lectures and Tutorials  • Assessment: Tutorial participation, Essay, Examination
A subject 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 subject 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

Recommended reading

HAS308  Internship in Social Research
25 Credit Points  • 1 Semester  • 3 Hours per Week plus two days per week with employer  • Hawthorn  • Prerequisite: HASP306 or HASP307 (usually with a distinction in at least one of these)  • Teaching methods: Workshops, placement with an employer  • Assessment: Oral Presentations, Seminar Participation, Report from workplace supervisor, Research Report (5,000 words)
A subject in the Bachelor of Social Science, Bachelor of Arts, Bachelor of Social Science (Psychology), Bachelor of Arts (Media and Communications).

Aims & Objectives
This course 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.
HAS316 Migration and Ethnicity

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Students majoring in sociology HAS100 and HAS101, other students should contact the convenor. • Teaching methods: Lectures and Seminars, which emphasise student participation • Assessment: Short essay, Major essay, Seminar participation, and exam

Aims & Objectives
- To develop understanding of the main sociological theories used to explain the development of electronic technology and its social relevance
- To develop understanding of the major effects of electronic technologies in society, social institutions and social change from an international perspective
- To help students analyse the effects of immigration on to ethnicity, culture and personal identity

Content
- Ethnicity, race and ethnocentrism
- Pull and push factors
- Case studies (France, United States, Australia)
- Citizenship and immigration control
- Pluralism, national identity and globalisation
- Responding to diversity
- Borders and rights

Recommended reading

HASP201 eSociety (Sociology of the Electronic Age)

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: One Stage 1 Sociology or Media subject • Teaching methods: Lectures and Tutorials • Assessment: Assignments, Examinations

Aims & Objectives
- To develop knowledge of the key electronic technologies
- To develop understanding of the major effects of electronic technologies in society, institutions and social change from an international perspective
- To develop understanding of the main sociological theories used to explain the development of electronic technology and its social relevance

Content
Major topics covered include:
- Technology and Society
- Identity
- Family and Sexuality
- Community
- Organisations
- Democracy
- Surveillance
- Social Theory

Recommended reading

HASP200/HASP300 Public Policy in Australia

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Tutorial Paper and Essay

A subject 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 subject can be taken at Stage 2 or Stage 3.

Aims & Objectives
To analyse public policy making processes in contemporary Australia.

Content
This subject examines how public policy is developed in Australia. After a broad, comparative overview of public policy making in the twentieth century, the subject 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

HASP201/HASP301 Work in Australia

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Tutorial Paper and Essay

A subject 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 subject can be taken at Stage 2 or Stage 3.

Aims & Objectives
To analyse the politics of work in contemporary Australia.

Content
This subject 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 subject 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 & HAS101 (students majoring in Sociology), one Stage 1 Politics subject (students majoring in Politics), HAH100 or HAH101 (students majoring in Cultural Studies) other students to contact the convenor • Teaching methods: Lecture and Tutorials • Assessment: Tutorial participation, Tutorial paper, Essay and Examination
Aims & Objectives
Effective social research and policy development depends on social theory. This subject 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 subject 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 interventionists 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.

Recommended reading

HASP303 Research Project
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HASP306 or HASP307 • Teaching methods: Lectures, workshops, research practice and seminars • Assessment: Oral presentations, Seminar Participation and research report
A subject in the Bachelor of Social Science; Bachelor of Social Science (Psychology); Bachelor of Arts and Bachelor of Arts (Media and Communications).

Aims & Objectives
• To help students understand the principles involved in carrying out a social research project.
• To provide students with practical experience in designing and carrying out an independent research project under supervision.

Content
Students will carry out the research project which they planned in either HASP306 or HASP307. Students selected for the Sociology internship program (HASP308) will conduct the research they are doing for their employer under the auspices of this subject.

Recommended reading

HASP304 Sociology and Social Policy
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: At least two Stage 2 Sociology or Politics subjects, or with permission from the subject convenor • Teaching methods: Lectures and Tutorials • Assessment: Essay and Examination
A subject in the Bachelor of Social Science; Bachelor of Social Science (Psychology); Bachelor of Arts and Bachelor of Arts (Media and Communications).

Aims & Objectives
• To expose students to different theoretical and ideological perspectives for analysing social policy
• To examine the contribution of sociological analysis to the understanding of the policy process
• To develop students’ abilities to analyse specific policy issues
• To understand the principles of comparative analysis

Content
• Comparative analysis

HASP306 Quantitative Research Methods
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: For students majoring in Sociology: HAS100 and HAS101, and two Stage 2 Sociology subjects, or with permission from the subject convenor • Teaching methods: Lectures and Tutorials • Assessment: Research proposal, Seminar participation, Test and Examination
A subject in the Bachelor of Social Science; Bachelor of Social Science (Psychology); Bachelor of Arts and Bachelor of Arts (Media and Communications).

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

Recommended reading
• To design a qualitative research project

Content
• The foundation of qualitative research
• The ethics, politics and design of qualitative research
• In-depth interviews
• Focus Groups
• Unobtrusive methods
• Memory-work
• Ethnographic fieldwork
• Writing a research proposal
• Analysing qualitative data
• Action research

Recommended reading

HAT110 Australia: A Global Context

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: Lectures and tutorials • Assessment: Presentation, essay, examination
An elective subject, available to non-local students across the Higher Education Division.

Aims & Objectives
Australia: A Global Context is a general elective subject 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
1) 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.
2) Australian Culture: using historical and contemporary media representations as case studies, the second block of the subject attempts to identify some of the key icons of Australian identity.
3) 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.

Recommended reading

HAT116 Linguistics

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: Lecture and Tutorial (Attendance at lectures is mandatory). • Assessment: Two assignments, Essay, Weekly readings and exercises
A subject in the Bachelor of Business and Bachelor of Arts.

Aims & Objectives
This subject 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 subject are familiar. Knowledge of another language is not required.

Content
In this subject, 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 subject in their course. It is also available to students not studying languages.

Textbook

HAT119 Academic Communication Skills

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: Lectures, Workshops and Tutorials. • Assessment: Essays, journal, classwork.
A subject in the Bachelor of Arts, Bachelor of Arts (Media and Communications), Bachelor of Social Science and Bachelor of Social Science (Psychology).

Aims & Objectives
This subject is designed specifically for international students, focussing on academic skills which aid the transition to Australian tertiary academic life.

Content
The course 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 subject 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 subject perspectives. It incorporates guest lecturers, language support, and a forum for problem solving for students new to Australian academic expectations.

Recommended reading

HAT160 Mandarin Chinese for Native Speakers of Cantonese 1A

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Full competence in written Chinese • Teaching methods: Classwork (writing, conversation, pronunciation). • Assessment: Mid-semester test, Final examination, Class performance
A subject in the Bachelor of Business and Bachelor of Arts.

Aims & Objectives
This subject, offered as an elective, is designed specially to provide speakers of Cantonese with competence in spoken Mandarin Chinese. Students admitted to the program are expected to be fully competent in written Chinese.

Content
The coursework is based on a variety of unabridged texts (academic, business and similar) to provide training in Mandarin Chinese pronunciation and appropriate Mandarin Chinese vocabulary. Training is also given in writing the simplified Chinese script.

Textbook

HAT161 Mandarin Chinese for Native Speakers of Cantonese 1B

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Full competence in written Chinese • Teaching methods: Classwork (writing, conversation, pronunciation). • Assessment: Mid-semester test, Final examination, Class performance
A subject in the Bachelor of Business and Bachelor of Arts.

Aims & Objectives
This subject, offered as an elective, is designed specially to provide speakers of Cantonese with competence in spoken Mandarin Chinese. Students admitted to the program are expected to be fully competent in written Chinese.
Content
The coursework is based on a variety of unabridged texts (academic, business and similar) to provide training in Mandarin Chinese pronunciation and appropriate Mandarin Chinese vocabulary.

Recommended reading

HAY100 Psychology 100
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Corequisites: HMA103. Teaching methods: Lectures and Tutorials. Assessment: Examinations, Laboratory reports & Critical evaluation.
A subject in the Bachelor of Social Science (Psychology); Bachelor of Social Science; Bachelor of Arts (Psychology/Psychophysiology); Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Science (Psychology/Psychophysiology); and Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives
Psychology 100 and Psychology 101 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 behavior, sensation, perception, consciousness, learning, memory, language, and intelligence.

Recommended reading
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 Findlay, 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, HMA103. Teaching methods: Lectures and Tutorials. Assessment: Examinations, Laboratory reports.
A subject in the Bachelor of Social Science (Psychology); Bachelor of Social Science; Bachelor of Arts (Psychology/Psychophysiology); Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Science (Psychology/Psychophysiology); and Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives
Refer to Content.

Content
This subject concentrates on various aspects of cognition such as memory, language and intelligence. Other topics covered include personality, sexuality, stress and coping, and psychopathology. Students are also introduced to social and developmental psychology.

Recommended reading
Students wishing to familiarise themselves with concepts in psychology could read any recent introductory psychology text available from most regional libraries.

HAY205 Cognition and Human Performance
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAY100, HAY101, HMA103, HMA278 and HAY206. Corequisites: HMA279. Teaching methods: Lectures, Tutorial/Practical Sessions, and Project Work. Assessment: Practical report, Examination.
A subject 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); Bachelor of Science (Psychology/Psychophysiology); and Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives
The article aims to provide up-to-date coverage of recent theoretical and methodological advancements in cognitive psychology.
HAY307 Social Psychology
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAY100, HAY101, HMA103, HMA278, HMA279 and one of HAY205 or HAY206 • Teaching methods: Lectures and Tutorial/Practical Sessions • Assessment: Examination, Practical report
A subject 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/Biochemistry).

Aims & Objectives
This subject 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

HAY308 The Psychology of Personality
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAY100, HAY101, HMA103, HMA278, HMA279, HAY205 and HAY206, • Corequisites: HMA279 • Teaching methods: Lectures and Tutorials. • Assessment: Examinations, Practical report.
A subject 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/Biochemistry).

Aims & Objectives
Having completed this course, students should be able to do the following:
1. 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)
2. Be able to describe basic elements of historically important theories within each perspective.
3. Be able to discuss some major elements of contemporary theories within each perspective.
4. 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 and 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: HAY100, HAY101, HMA103, HMA278, HMA279, HAY205, HAY206 • Teaching methods: Lectures and Laboratory Work. • Assessment: Research project, Examinations.
A subject in the Bachelor of Social Science (Psychology); Bachelor of Social Science; Bachelor of Arts (Psychology/Psychophysiology); Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Science (Psychology/Psychophysiology); and Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives
The aim of this subject 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 subject in the Bachelor of Social Science and Bachelor of Arts

Aims & Objectives
This subject 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: HAY100, HAY101, HMA103, HMA278, HAY205 or HAY206 • Teaching methods: Lectures and Tutorials • Assessment: Examinations, Class presentations.
A subject 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/Psychophysiology).

Aims & Objectives
The subject 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. The course 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.

Recommended reading
Davison, G.C., Neale, J.M. & Krin, A., Abnormal Psychology, 9th edn, John Wiley,
HAY452/HAY459  Thesis A

25 Credit Points  •  1 Semester  •  15 Hours of Workshops plus regular consultation with thesis supervisor  •  Hawthorn  •  Prerequisite: Nil  •  Teaching methods: Mini-conference participation, regular meetings with thesis supervisor  •  Assessment: 2,000-word annotated bibliography, presentation of research proposal at mini-conference

A subject in the Bachelor of Arts (Honours) – Psychology stream and the Postgraduate Diploma of Psychology

Aims & Objectives

This subject aims to advance students' understanding of research methods in psychology, with special emphasis on current research tools and techniques. It also aims to facilitate students to design and develop their 4th-year thesis project.

Content

Students are required to attend a series of four method workshops as well as the first lecture that introduces students to an overview of the research process. Students are also required to meet regularly with their thesis supervisor and to present their project at the Psychology mini-conference.

Recommended reading


HAY453  Advanced Quantitative Methods

12.5 Credit Points  •  1 Semester  •  3 Hours per Week  •  Hawthorn  •  Prerequisite: Nil  •  Teaching methods: Lecture and Laboratory Classes  •  Assessment: Examination 50%, Computer skill test 40%, Workbook 10%

A subject in the Bachelor of Arts (Honours) – Psychology stream, the Postgraduate Diploma of Psychology and the Bachelor of Science (Psychology/Psychophysiology) Honours.

Aims & Objectives

This subject provides a conceptual framework for understanding univariate and multivariate analyses and interpretation of psychological data. It also provides an opportunity to use a range of data analysis techniques. These include analysis of variance and covariance, multiple regression analysis, multiple and logistic regression techniques, cluster and factor analysis, discriminant function analysis, path analysis, and structural equation modelling.

Content

The objective of this unit is to prepare students for various quantitative data analysis skills that they may require for analysing their fourth-year thesis data. Basic and advanced skills in data preparation, statistical analyses, interpretation of data, and report preparation are covered in lectures and computer labs.

Recommended reading


HAY454  Psychological Assessment

12.5 Credit Points  •  1 Semester  •  2 Hours per Week  •  Hawthorn  •  Prerequisite: Nil  •  Teaching methods: 1-hour Lecture, 1-hour Tutorial per Week  •  Assessment: Examinations 50%, Reports 50%

A subject in the Bachelor of Arts (Honours) – Psychology stream and the Postgraduate Diploma of Psychology.

Aims & Objectives

This subject equips students with the knowledge and skills required to carry out limited psychological assessments of individuals in human services and human resources settings under appropriate professional supervision.

Content

Topics cover the basic technical and methodological principles of testing (e.g. reliability, validity, norms and test construction) and the application of tests currently used by psychologists (e.g. intelligence, personality and vocational interests). The course also covers assessment techniques and instruments relevant to clinical settings. The tutorial programs are designed to give students practical knowledge of psychological testing.

Recommended reading

HAY457  Ethical and Professional Issues

Aims & Objectives
Objectives of the subject are:
- To ensure awareness of ethical and professional issues confronting practicing psychologists.
- To clarify the relationship between the Psychologists Registration Board of Victoria and the Australian Psychological Society (APS).
- To ensure familiarity with the APS Code of Ethics, the APS Ethical Guidelines and the Registration Board’s statements regarding ethical practice.
- To develop an awareness of how to apply in practice the principles outlined in the APS Code of Ethics.
- To foster the ability to identify situations that give rise to ethical and professional dilemmas for practicing psychologists in the areas of competence, confidentiality and informed consent.
- To introduce issues relating to psychology and the law and the psychologist’s role in court.

Content
This subject introduces students to the essential elements of ethical and professional practice in psychology. The subject gives a background to the profession and information about professional associations and registration requirements in the state of Victoria. Ethical and professional issues such as competence, confidentiality, informed consent and professional conduct are covered. Practical professional skills such as report writing, record-keeping and analysing ethical dilemmas are introduced. Issues surrounding psychology and the law are studied, together with the psychologist’s role in court. Throughout the subject there is an emphasis on becoming aware of, and applying in practice, the principles and procedures outlined in the APS Code of Ethics.

Recommended reading
Code of Ethics, Australian Psychological Society, Melbourne, 2002

HAY458  Counselling Psychology

Aims & Objectives
This subject introduces students to major contemporary methods of counselling, including psychodynamic family systems, and existential and cognitive behavioural frameworks. Students also develop basic skills in counselling, microskills and counselling processes, including empathy.

Content
- Contemporary theory and research in counselling psychology.
- Models of training in counselling and interviewing.
- Experiential training in counselling.
- Counselling service delivery systems.
- Evaluating and monitoring counselling service programs.
- Contemporary theory and practice in small group psychology; group facilitation skills.

Recommended reading

HBC110  Accounting for Success

Aims & Objectives

Content
Accounting theory and practice are examined in an historical cost accounting system. This subject 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.

Textbook

References

HBC220  Financial Information Systems

Aims & Objectives
This subject traces the development of the accounting process as an information flow to provide the basis from which management control and decision-making stems. The computerised processing of information is examined and the accounting packages Quicksbooks Pro 2002 and MYOB Accounting Plus 13 are used to facilitate it.

Content
The accounting equation is re-examined in order to prepare the balance sheet and profit and loss statement. The control of cash, debtors, 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.

References
HBC221 Corporate Accounting

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBC110 and HBC220. Highly recommend HBC221 be completed prior to or concurrently with this subject. • Teaching methods: Lecture and Tutorial • Assessment: Tutorial participation 5% Assignment 10% Test 25% Examination 60%

A subject in the Bachelor of Business.

Aims & Objectives
The overall objective of the subject 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 subject 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 • Prerequisite: HBC110 and HBC221. Highly recommend HBC222 be completed prior to or concurrently with this subject. • Teaching methods: Lecture and Tutorial • Assessment: Tutorial participation 5% Assignment 20% Test 25% Examination 50%

A subject 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, D.R., Mowan, M.M. 2000, Management Accounting, 5th edn, Cincinatti, South Western.

HBC223 Analysis for Competitive Advantage

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBC110 and HBC222. Teaching methods: Lecture and Tutorial • Assessment: Tutorial participation 10% Assignment 20% Test 20% Examination 50%

A subject 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.
- Organisational structure.
- Management accounting.
- Transfer pricing.

References
Hansen, D.R., Mowan, M. 2000, Management Accounting, 5th edn, Cincinatti, South-Western.

HBC224 Financial Management

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBC110 and HMB110 or HMB111. This subject must be attempted as a second year unit. • Teaching methods: Lecture and Tutorial • Assessment: Class participation 5% Tests 30% Examinations 65%

A subject 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 subject 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 subject 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
Aims & Objectives
The broad objective of this subject is to familiarise students with the underlying concepts, objectives and reporting function of the auditor. The subject 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.

References

Aims & Objectives
The purpose of this subject 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.

Content
• 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 describe and critically analyse a framework of accounting concepts, including materiality, ethical considerations, financial instruments, and the role of the accountant.
• To examine the development of accounting theory and the methodology used by accounting theorists.

References

Aims & Objectives
The objectives of this subject 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, positive accounting theories, current measurement issues, intangibles, extractive industries, foreign currency translation, ethics, corporate governance and triple bottom line reporting.

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 discussed such as intangible assets, those relating to extractive industries and financial instruments.
• Ethics, corporate governance and Triple Bottom Line reporting.

References

Aims & Objectives
The process of portfolio selection and ongoing investment strategies. The objective of this subject is to familiarise students with the underlying concepts, objectives and reporting function of the auditor. The subject 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
• 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, positive accounting theories, current measurement issues, intangibles, extractive industries, foreign currency translation, ethics, corporate governance and triple bottom line reporting.

References
Aims & Objectives
The overall subject objective is to develop in students an understanding of the Income Tax Assessment Act, together with those acts complementary to the Assessment Act. Specifically, the subject will:

- Familiarise students with recent Court and Administrative Appeals Tribunal decisions in the area of income taxation
- Provide students with an overview of tax planning issues and concepts
- Develop research skills in students in relation to current and landmark taxation cases
- Introduce students to the complexities of taxation in relation to various taxable entities
- With the aid of income tax rulings and the aforementioned tax cases, develop in students an understanding of the basic concepts of income, capital, and the rules governing deductions

Content
Topics covered include the nature of assessable income, specific income types, source residency and derivation, eligible termination payments, capital gains tax, fringe benefits tax, allowable deductions, goods and services tax and the provisions relating to companies, partnerships, and individuals.

Textbooks
- Barkocy, 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. Students should not undertake this subject if they have completed HBC227 Financial Risk Management. • Teaching methods: Lecture and Tutorial • Assessment: Tests 30% Examination 70%
A subject in the Bachelor of Business.

Aims & Objectives
The subject 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.

Textbook

References

HBC410 Accounting Honours Dissertation
60 Credit Points • 1 Semester (full-time) • Hawthorn • Prerequisite: HBC415 and HBC411 • Teaching methods: Supervision • Assessment: Dissertation
A subject in the Bachelor of Business (Honours).

Aims & Objectives
The student’s independent research work will be supervised by a suitably qualified member of Swinburne academic staff. 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.
- 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 10,000 and 15,000 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 issue.
- Hypothesis or problem.
- A current literature review.
- Cogent argument.
- Clear conclusions and if necessary, appropriate recommendations.

Recommended reading
References will be discipline specific.

HBC411 Accounting Advanced Reading Unit
20 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Written Honours dissertation proposal, Seminar presentation of Honours dissertation proposal, Literature review.
A subject in the Bachelor of Business (Honours).

Aims & Objectives
To explore the breadth and depth of the area of study chosen by the student in a structured environment. To allow the student to use this 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.

Recommended reading
References will be discipline specific.

HBE110 Microeconomics
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Assignments 20% Test 20% Final examination 60%
A subject in the Bachelor of Business, Bachelor of Engineering/Bachelor of Business, Bachelor of Science/Bachelor of Business and Bachelor of Technology/Bachelor of Business

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 subject 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 subject 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
HBE220  Macroeconomics

12.5 Credit Points  •  1 Semester  •  3 Hours per Week  •  Hawthorn  •  Prerequisite: HBE110  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 subject 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.

Textbook


References


HBE228  Banking and Financial Markets

12.5 Credit Points  •  1 Semester  •  2 Hours per Week  •  Hawthorn  •  Prerequisite: HBE110 and HBE220  Teaching methods: Lecture and Tutorial  •  Assessment: Test and workshops 30%, Presentations/report 20%, Final examination 50%  

A subject in the Bachelor of Business.

Aims & Objectives

The intention of this subject is to provide students with a basic financial vocabulary and skills to enable analysis of financial data and text. The subject offers students foundation skills prior to taking more specialised finance subjects.

Content

The Australian Financial Market
- The Payment System
- Its workings and performance
Reputation of Australia's Financial Markets
- ARRAs 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

Textbook


References


HBE333  Financial Institutions and Monetary Policy

12.5 Credit Points  •  1 Semester  •  3 Hours per Week  •  Hawthorn  •  Prerequisite: HBE110 and HBE220, HBE228 recommended  •  Teaching methods: Lecture and Tutorial  •  Assessment: Test 40%, Final examination 60%  

A subject 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 subject 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  •  Prerequisite: HBE110 and HBE220 or their equivalent  •  Teaching methods: Lecture and Tutorial  •  Assessment: Tutorial presentations 10% Test 30% Final examination 60%  

A subject in the Bachelor of Business.

Aims & Objectives

The intention in this subject 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. These skills are applied by students in a business project which involves research, data collection and analysis.

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.

Textbook

HBG410  Finance Honours Dissertation

20 Credit Points  •  1 Semester (full-time)  •  Hawthorn  •  Prerequisite: HBG415 and HBF411  •  Teaching methods: Supervision  •  Assessment: Dissertation  
A subject in the Bachelor of Business (Honours).

Aims & Objectives

The student’s independent research work will be supervised by a suitably qualified member of Swinburne academic staff. 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.
- 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 10,000 and 15,000 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 issue.
- Hypothesis or problem.
- A current literature review.
- Cogent argument.
- Clear conclusions and, if necessary, appropriate recommendations.

References

References will be discipline specific.

HBF411  Finance Advanced Reading Unit

20 Credit Points  •  1 Semester  •  Hawthorn  •  Prerequisite: Nil  •  Teaching methods: Regular Meetings with Supervisor  •  Assessment: Written Honours dissertation proposal, Seminar presentation of the Honours dissertation proposal, Literature review.  
A subject in the Bachelor of Business (Honours).

Aims & Objectives

To explore the breadth and depth of the area of study chosen by the student in a structured environment. To allow the student to use this 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.

HBQ230  eBusiness

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 School 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 subject texts.

HBF420  Business Communication

12.5 Credit Points  •  1 Semester  •  3 Hours per Week  •  Hawthorn  •  Prerequisite: Nil.  
Students should not undertake this subject if they have completed HBG100 Business Communication.  •  Teaching methods: Classes and Workshops  •  Assessment: Academic journal 20%  •  Student meeting and report-writing workshop 10%  •  Project presentation 80%  •  Project and class participation 10%.
A subject in the Bachelor of Business.
HBH110 Organisation and Management

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
Teaching methods: Experiential, based on the ‘Class As Organisation’ (CAO) model and involving individual and collaborative study, a small group research project, and a large group task. Assessment: Large group project 25%, Small group project 25%, Individual examination 50%
A subject in the Bachelor of Business, Bachelor of Engineering/Bachelor of Business and Bachelor of Science/Bachelor of Business

Aims & Objectives
The subject 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 and external environment.

Content
Structure, strategy, culture and external environment as applied to an established external business organisation and to the class itself as a temporary learning organisation.

Textbook

References
Selected journal articles and readings as recommended during the program.

HBH220 Organisation Behaviour and Change

12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: HBH110
Teaching methods: Presentation of theoretical material, Discussions, Activities and Experiential exercises. Assessment: Individual essays 60%, Participation 10%, Group presentation 30%
A subject in the Bachelor of Business.

Aims & Objectives
• To build and to reflect on the experiences in Organisations and Management (HBH110).
• To develop students’ understanding of themselves, their impact on other people and the way other people influence their own behaviour.
• To provide opportunities for students to experience the satisfaction and difficulties inherent in learning to work in semi-autonomous work groups and to improve their skills as team members and team leaders.
• To enable students to explain the nature of their experiences as individuals and in groups using current theories and concepts.
• To develop an understanding of change management at both the individual and group level.

Content
This subject 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 Management’. It is designed to develop competencies in problem-solving, communication, and personal and interpersonal skills appropriate to diverse and changing workplaces. Class 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.

Textbook

References


HBH222 Organisation Design & Technology

12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: HBH110
Teaching methods: Presentation of theoretical material, Experiential exercises, Student group presentations on industry findings. Assessment: Individual case study 60% Group case study report/presentation 30% Class participation 10%
A subject in the Bachelor of Business.

Aims & Objectives
The subject is designed 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 design choices and the considerations relevant to these choices, to understand problems in designing structures and jobs, and to develop analytical skills for dealing with design problems.

Content
• To introduce students to the organisational life-cycle
• 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

Textbook

References

HBH225 Human Resource Management in Contemporary Organisations

12.5 Credit Points • 1 Semester • 2 Hour Class and 1 Hour Development Work per Week • Hawthorn • Prerequisite: HBH110
Teaching methods: Large and small group experiential learning, Mini-lectures and Workshops; Use of library and electronic resources for research. Assessment: Individual assessment 50%, Group assessment 50%
A subject in the Bachelor of Business and Bachelor of Technology/Bachelor of Business.

Students should not undertake this subject if they have completed HBH221.

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 develop an understanding of national, regional and organisational cultures

To explore and understand the value of diversity.

**Aims & Objectives**

- To increase students ability to critically analyse the current literature and issues relevant to the topics covered

**Content**

Contexts of HR, including ethics; the changing nature of work and technology; research and information literacy; communication and interpersonal skills; HR life cycle.

**Recommended reading**


**HBH226 Strategic Human Resource Management**

12.5 Credit Points  • 1 Semester  • 2 Hour Class and 1 Hour Development Work per Week  • Hawthorn  • Prerequisite: HBH110 and HBH225 or HBH221  • Corequisites: HBH225  • Teaching methods: Presentation of theoretical material, Case studies and experiential activities, Class discussion, reflection and consultation on workplace projects  • Assessment: Organisational analysis 40% Strategic HRM plan 50% Attendance & participation 10%

A subject in the Bachelor of Business.

Students should not undertake this subject if they have completed HBH341.

**Aims & Objectives**

The aim of this subject is to:

- Develop an understanding of the critical links between strategic change, people and performance in achieving organisational success.
- Identify the importance of the integration of business, HRM and functional strategies.
- Consider the impact of strategic business decisions, such as outsourcing, telecommuting etc., on HR strategy and individual performance.
- Consider the HRM strategic choices available to an organisation in meeting its performance objectives.
- Study the traditional HRM activities from a strategic perspective.
- 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.

**Textbook**


**HBH324 Managing Workplace Relations**

12.5 Credit Points  • 1 Semester  • 2 Hour Class and 1 Hour Development Work per Week  • Hawthorn  • Prerequisite: HBH110 and HBH222  • 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 subject 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.
- Understand the current Workplace 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
- Allows students to undertake research into organisations and investigate changes at the workplace level on collective agreements through an Industrial Relations Audit.

**Content**

Topics include:

- Different types of agreements, incidence and implications.
- Women in Enterprise Bargaining.
- NESB in the Enterprise Bargaining process.
- Occupational Health and Safety implications for different categories of workers.
- Strategies for key stakeholders in the workplace relations area.
- Union strategies and employer associations strategies.
- Rewards Management & Variable Remuneration systems - KPIs gainsharing, ESOPS, salary packaging incidence and impact on workplace productivity.
- Competitive positioning and the workplace bargaining process.
Aims & Objectives

- Flexibility in the workplace, globalisation and impact on Australian work.

Textbook


References

Australian Centre for Industrial Relations Research and Training. 1999, *Australia at Work*, Australia, Prentice Hall.


**HBH325 Human Resource Management and Entrepreneurship**

12.5 Credit Points  • 1 Semester  • 2 Hours of Lectures and 1 Hour of Development Work per Week.  • Hawthorn  • Prerequisite: HBH110, HBH221 or HBH225

Teaching methods: Mini-lectures; Experiential activities; Presentations; Case studies and Class discussions; Assessment: Individual assignment 50%; Group assignment 40%; Presentation 10%

A subject in the Bachelor of Business, and an elective in Bachelor of Technology (Aviation)/Bachelor of Business, and Bachelor of Technology (Air Transportation Management)/Bachelor of Business

**Aims & Objectives**

The aims of this subject 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.

**Textbook**


**HBH330 Leadership and Organisation Dynamics**

12.5 Credit Points  • 1 Semester  • 2 Hours plus 1 Hour of Development Work per Week  • Hawthorn  • Prerequisite: HBH110 and HBH220  • 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 subject in the Bachelor of Business, and an elective in Bachelor of Technology (Aviation)/Bachelor of Business, and Bachelor of Technology (Air Transportation Management)/Bachelor of Business

**Aims & Objectives**

- To build on the learning gained in HBH110 Organisation and Management and HBH220 Organisation 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 DB 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)  • Hawthorn  • Prerequisite: HBQ415 and HBH411  • Teaching methods: Supervision  • Assessment: Dissertation

A subject in the Bachelor of Business (Honours).

**Aims & Objectives**

The student's independent research work will be supervised by a suitably qualified member of Swinburne academic staff. 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.
- 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 10,000 and 15,000 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 issue.
- Hypothesis or problem.
- A current literature review.
- Cogent argument.
- Clear conclusions and, if necessary, appropriate recommendations.

**Recommended reading**

References will be discipline specific.

**HBH411 Human Resource Management/ Organisation Behaviour Advanced Reading Unit**

20 Credit Points  • 1 Semester  • Hawthorn  • Prerequisite: Nil  • Teaching methods: Regular Meetings with Supervisor  • Assessment: Written Honours dissertation proposal, Seminar presentation of the Honours dissertation proposal, Literature review.

A subject in the Bachelor of Business (Honours).

**Aims & Objectives**

To explore the breadth and depth of the area of study chosen by the student in a structured environment. To allow the student to use this 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.

Recommended reading
References will be discipline specific.

HBI231 Foundations of International Business
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBE110 • Teaching methods: Lecture and Tutorial • Assessment: Tests 40% Final examination 60%

A subject in the Bachelor of Business.

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 subject 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:
• Foreign investment
• 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 subject • Teaching methods: Lectures, Tutorials and Online modules • Assessment: Class presentation 25% Essay 25% Class participation 10% Exam 40%

A subject in the Bachelor of Business.

Aims & Objectives
The aim of this subject is for students to acquire an understanding of the process of economic integration in Western Europe. The subject analyses the social, political and economic changes in Europe, particularly since the mid 1980s. The subject analyses 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.

References

HBI300 Industry Placement
0 Credit Points • 6 or 12 Months • Hawthorn • Prerequisite: Nil • Teaching methods: Supervision by the employer and an academic staff member • Assessment: Written Report

A subject in the Bachelor of Business (for students who are accepted into the Industry-Based Learning program and gain an approved placement).

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 • 3 Hours per Week • Hawthorn • Prerequisite: As a capstone subject in the International Business major, this subject must be studied by students in the final semester of their course and they must also have completed HBE110 and HBI231. Teaching methods: Lecture and Tutorial • Assessment: Test 10% Case Study Assignment 40% Final Examination 50%

A subject in the Bachelor of Business.

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  • Prerequisite: Two Stage 2 Business subjects, including HBI231  • Teaching methods: Lecture, Class Discussion  • Assessment: Group presentation and report 50% Examination 50%

A subject in the Bachelor of Business/Bachelor of Arts (Japanese). Students should not undertake this subject if they have completed HAJ340.

Aims & Objectives
This subject 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 subject 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 social market economies of China and Vietnam.

This subject 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 subject will consist of a number of modules. Specific modules will be compulsory components of the subject, other modules will 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

Textbook

Reference

HBI342 International Investment and Taxation

12.5 Credit Points  • 1 Semester  • 2 Hours per Week  • Hawthorn  • Prerequisite: HBI111, HBC110 and Two Stage 2 Business Subjects. No previous knowledge of taxation is expected  • Teaching methods: Class  • Assessment: Two tests or research essays 50% Final examination 50%

A subject in the Bachelor of Business.

Students should not undertake this subject if they have completed HBI229 International Investment and Taxation or HBI342 International Investment and Development.

Aims & Objectives
This subject 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 aspects and taxation aspects.

Content
Legal aspects of foreign direct investment (FDI) International treaties Investment measures in the WTO, NAFTA and in any US/Australia Free Trade Agreement Corruption in international business Ethical aspects of foreign investment Introduction to the Australian taxation system Comparison of the Australian taxation system with other countries Analysis of current developments in international taxation

References
Holland, P.A. 2003, Foreign Investment and the Law in Australia, Melbourne, Swinburne Press.
COH International Master Tax Guide

HBI389 Work Experience in Europe

12.5 Credit Points  • 1 Semester  • Work Placement  • Hawthorn  • Prerequisite: Admission is subject to the discretion of the convenor.  • Teaching methods: Three months’ full-time attendance at place of employment, 4 x 2-hour preparatory lectures.  • Assessment: Students will be required to complete a professional diary during the work experience and submit a project on a topic which relates the work experience to the key issues facing Europe and European integration. The student will be expected to submit this project no later than one month after the completion of the experience. An assessment by the employer will also be used for assessing the performance of the student.

A subject in the Bachelor of Business.

Aims & Objectives
The aim of this elective subject 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 subject 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.

Content
Employment in a European company or organisation. Some of the topics to be covered during the subject are:
• Australia–Europe Business.
• Single European Market.
• European Monetary Union.
• European Business Practices.

Textbook
Subject to placement and to be advised on an individual basis.

References
HBI288 European Union Tutorial Guide.

HBI390 European Union Study Tour

12.5 Credit Points  • Approx 3 Weeks conducted in November/December  • 2 Pre-departure Seminars and Tour  • Hawthorn  • Prerequisite: HBI288 recommended  • Teaching methods: Preparatory lectures, participation and preparation in briefings involvement in actual meetings research and presentations during the tour.  • Assessment: Students are required to prepare a project on a theme relevant to Europe and the study tour of no less than 4,000 words.

A subject in the Bachelor of Business.

Aims & Objectives
This subject aims:
• To expose students to the cultural, political and regulatory environment of the European Union.
• To provide an opportunity for students to gain hands-on experience of business in Europe.
• To 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 subject 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.

**Recommended reading**

**References**


HBI288 European Union Tutorial Guide.

**HBI391 Pacific Rim Business Study Tour**

12.5 Credit Points  • Approx. 3 Weeks conducted in November/December • 2 Pre-departure Seminars and Tour • Hawthorn • Prerequisite: Nil • Teaching methods: Preparatory lectures and satisfactory participation in briefings, research and presentations during the tour. • Assessment: A written assignment of no less than 4,000 words:

A subject in the Bachelor of Business.

**Aims & Objectives**

This subject 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 subject entails students attending prior and preparatory seminars at Swinburne University. By the end of the subject 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/countries’ 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  • Prerequisite: HBI231  • Teaching methods: Lecture and Tutorials  • Assessment: Presentation 20% Assignment 20% Participation 10% Exam 50%

A subject 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 subject comprises of a number of modules available online and complemented by lectures. Topics:

- The EU/Global Trading Environment.
- EU Regulatory Environment.
- 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  • Prerequisite: Two Stage 2 business subjects including HBI231  • Teaching methods: Lecture and Tutorial  • Assessment: Class presentations 20% Essays 20% Class participation 10% Examination 50%

A subject in the Bachelor of International Business.

**Aims & Objectives**

The subject aims to present the fundamentals of the business environment when doing business in the Americas.

**Content**

The aim of the subject is to provide students with an understanding of basic workings of the economies in the America’s and how they conduct business. The subject 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 investment, 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.
- Canada: The ‘little big man’.
- Mexico: Investment, development and proximity.
- Mercosur and the emerging markets.
- The smaller Latin American markets.
- Australia – America’s trade and investment relations.

**Textbook**


**HBI410 International Business Honours Dissertation**

60 Credit Points  • 1 Semester (full-time).  • Hawthorn  • Prerequisite: HBI415 and HBI411  • Teaching methods: Regular Meetings with Supervisor  • Assessment: Dissertation

A subject in the Bachelor of Business (Honours).

**Aims & Objectives**

The student’s independent research work will be supervised by a suitably qualified member of Swinburne academic staff. 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.
- The capacity of the student to realistically complete research into the topic in the prescribed time.
### Content

Normally, a student will produce a written minor dissertation of between 10,000 and 15,000 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 issue.
- Hypothesis or problem.
- A current literature review.
- Cogent argument.
- Clear conclusions and if necessary, appropriate recommendations.

### Recommended reading

References will be discipline specific.

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### HBI411 International Business Advanced Reading Unit

20 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Written Honours dissertation proposal, Seminar presentation of the Honours dissertation proposal, Literature review:

A subject in the Bachelor of Business (Honours).

### Aims & Objectives

To explore the breadth and depth of the area of study chosen by the student in a structured environment. To allow the student to use this 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.

### Recommended reading

References will be discipline specific.

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### HBL220 Contract Law

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBL111 • Teaching methods: Lecture and Tutorial • Assessment: Two tests 50% Final examination 50%:

A subject in the Bachelor of Business.

### Aims & Objectives

The general aim of this subject is to enable students to gain an understanding of the law applicable to agreements and, in particular, those negotiated during the subject of 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.

### Textbook


### References


Latimer, P. 2003, Australian Business Law, CDH Australia Ltd.


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### HBL221 Company Law

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBL111 • Teaching methods: Lecture and Tutorial • Assessment: Test 25% Final examination 75%:

A subject in the Bachelor of Business.

### Aims & Objectives

The general aim of this subject is to enable students to gain an understanding of the various type of business organisations that are employed in the modern business environment. The subject 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

Lipton, P. and Herzberg, A. Understanding Company Law, Current edn, Sydney, LBC Information Services.

Corporations Act, Current edn, CDH or Butterworths Edition.
HBL222  Marketing Law
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBL111 • Teaching methods: Lecture and Tutorial • Assessment: Class exercise 25% Test 25% Final examination 50%
A subject in the Bachelor of Business.

Aims & Objectives
The subject 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 subject 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 and retailers of goods at common law and under statutes.
• Proprietary interests in products.
• Packaging and labelling of goods.
• Advertising and promotion of goods and services.
• Restrictive trade practices.

Textbook

References

HBL331  International Business Law
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBL111 • Teaching methods: Lecture and Tutorial • Assessment: Test 25% Seminar paper and presentation 10% Final examination 65%
A subject in the Bachelor of Business.

Aims & Objectives
The general objective of this subject is to introduce students to the legal aspects of international business law.

Content
The emphasis of the subject 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

Textbook

References

HBL333  Finance Law
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBL111 • Teaching methods: Lecture and Tutorial • Assessment: Mid-semester test 40% Final examination 60%
A subject in the Bachelor of Business.

Aims & Objectives
The general objective of this subject 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 • Prerequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Tutorial participation 5% Assignments 45% Examination 50%
A subject in the Bachelor of Business, Bachelor of Engineering/Bachelor of Business, Bachelor of Science/Bachelor of Business, Bachelor of Technology/Bachelor of Business, and Bachelor of Multimedia (Business Marketing)

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

References
HBM220  Market Behaviour

12.5 Credit Points  •  1 Semester  •  2 Hours per Week  •  Hawthorn  •  Prerequisite: HBM110  •  Teaching methods: Lecture, Tutorial and Case method  •  Assessment: Minor assignment 15% Major assignment 25% Participation 10% Exam 40%

A subject in the Bachelor of Business and the Bachelor of Multimedia (Business Marketing)

Aims & Objectives

The objective of this subject is to give students an understanding of the processes used by purchasers in the selection and use of offerings provided by suppliers. The subject is eclectic and covers theories developed in many disciplines, including anthropology, psychology and sociology. It takes the theories provided by these disciplines and applies them in the context of marketing practice. Students who have completed the subject will understand the various theories and have had practice in applying them to a range of exchange situations.

Content

- What is consumer behaviour and why study it.
- Analysis of specific behavioural models and the decision-making process.
- Market segmentation and positioning.
- Internal influences: perception, motivation, personality, learning, memory and attitudes.
- External influences: reference groups, adoption and diffusion processes, social class and culture.
- Other applications of consumer behaviour.
- Future scenarios.

References


HBM222  Marketing Planning

12.5 Credit Points  •  1 Semester  •  2 Hours per Week  •  Hawthorn  •  Prerequisite: HBM110  •  Teaching methods: Lecture, Tutorial and Case method  •  Assessment: Minor assignment 15% Major assignment 25% Participation 10% Exam 40%

A subject in the Bachelor of Business, Bachelor of Technology/Bachelor of Business, and Bachelor of Multimedia (Business Marketing)

Aims & Objectives

The objective of this subject is to examine the concept of planning in marketing, the role and methods of situation analysis, the writing of marketing plans, as well as their implementation and control. It focuses on the marketing planning process as a key tool in an organisation’s interaction with its environment. This subject gives students the opportunity to acquire a working understanding of various steps of marketing planning and the ability to apply them in developing and implementing marketing strategies.

Content

- Marketing orientation, strategy and tactics.
- An integrated marketing planning model.
- Analysing environments.
- Problem delineation.
- The marketing program: strategies and elements.
- Implementation and control of plans: goals and procedures.
- Achieving change for successful implementation.

Textbook


References

HBM272  eMarketing

12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: HBM110 and HIT1025/HET113 • Teaching methods: Lecture, Computer Lab, Online Resources • Assessment: Examination 60% Major assignment 40% 
A subject in the Bachelor of Business and the Bachelor of Multimedia (Business Marketing)

Aims & Objectives

To provide students with an understanding of the new paradigms of marketing using the Web and other electronic technologies. The opportunities afforded by these new media for small and medium enterprises, retailers, international marketers, product developers and researchers will be considered and issues associated with branding, communication strategy and distribution channels will be addressed.

Content

- The Internet/electronic micro-environment and macro-environment.
- Electronic marketing strategy.
- The electronic marketing mix.
- Relationship marketing.
- Achieving online service quality.
- Interactive marketing communications.
- Maintaining and monitoring the online presence.

Textbook


References


HBM330  Marketing Innovation Management

12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: HBM222 and HBM229 • Teaching methods: Lecture, Tutorials and Group Meetings • Assessment: Individual assignment 20% Tutorial presentation 30% Group assignment 50% 
A subject 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 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 subject 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 manufacturing)
- Business analysis/case
- Commercialisation: product, price, communication and distribution issues.
- New venture/start up.

Textbook


References

HBM333 Communications Strategy
12.5 Credit Points  • 1 Semester  • 2 Hours per Week  • Hawthorn  • Prerequisite: HBM220 and HBM222, and HDB229 recommended  • Teaching methods: Lecture, Tutorial and Fieldwork  • Assessment: Group communication plan 45%  Tutorial and online participation 15%  Examination 40%
A subject in the Bachelor of Business

Aims & Objectives
The aim of this subject is to enable students to apply their marketing knowledge to the specific areas of communication strategy. This subject 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

Textbook

References

HBM339 Transnational Business Practices
12.5 Credit Points  • 1 Semester  • 2 Hours per Week  • Hawthorn  • Prerequisite: HBM233  • Teaching methods: Lecture, Tutorial and Fieldwork  • Assessment: Group case study 30%  Individual network visit/s reports 20%  Individual final assignment & presentation 50%
A subject in the Bachelor of Business.
Note: Students should not undertake this subject if they have completed HBM338 Asian Pacific Business Practices.

Aims & Objectives
This subject 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 subject 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

HBM341 Business Strategy
12.5 Credit Points  • 1 Semester  • 2 Hours per Week  • Hawthorn  • Prerequisite: A capstone subject in the Marketing major or Management major; students must have completed HBM222 and one Stage 2 Marketing, or HBS222, or HRM/GB subject.  • Teaching methods: Lecture, Tutorial and Fieldwork  • Assessment: Individual tutorial work 35%  Individual assignments and group work 65%
A subject in the Bachelor of Business, Bachelor of Technology/Bachelor of Business, and Bachelor of Multimedia (Business Marketing).

Aims & Objectives
This is an interdisciplinary subject involving teaching staff representing the accounting discipline, human resource management and marketing staff. Students in this subject 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.

Textbook

References

HBM370 eCommerce Strategy: A Management Perspective
12.5 Credit Points  • 1 Semester  • 2 Hours per Week  • Hawthorn  • Prerequisite: HBG270  • Teaching methods: Lecture, Computer Lab, Online Discussion Groups  • Assessment: Major assignment 60%  Laboratory and online participation 20%
A subject in the Bachelor of Business and the Bachelor of Multimedia (Business Marketing).
Note: Subject is only offered in Semester 2.

Aims & Objectives
The 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 cybercommerce.
- Technological issues.
- Strategic planning for cybercommerce.
- Implementation strategies and project management.
- Future trends.

**References**

**HBM410 Marketing Honours Dissertation**
80 Credit Points • 1 Semester (full-time) • Hawthorn • Prerequisite: HBM411 + HBQ415 and HBMG410 • Teaching methods: Supervision • Assessment: Dissertation
A subject in the Bachelor of Business (Honours)

**Aims & Objectives**
The student’s independent research work will be supervised by a suitably qualified member of Swinburne academic staff. The topic of the dissertation, while being set by the student, must be consistent with:
- The broad content of the research discipline.
- The student’s capacity to realistically complete research into the topic in the prescribed time.

**Content**
Normally, a student will produce a written minor dissertation of between 10,000 and 15,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBM411 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 issue
- Hypothesis or problem
- A current literature review
- Cogent argument
- Clear conclusions and, if necessary, appropriate recommendations

**Recommended reading**
References will be discipline specific

**HBMG410 Management Honours Dissertation**
60 Credit Points • 1 Semester (full-time) • Hawthorn • Prerequisite: HBQ415 and HBMG411 • Teaching methods: Supervision • Assessment: Dissertation
A subject in the Bachelor of Business (Honours)

**Aims & Objectives**
The student’s independent research work will be supervised by a suitably qualified member of Swinburne academic staff. The topic of the dissertation, while being set by the student, must be consistent with:
- The broad content of the research discipline.
- The student’s capacity to realistically complete research into the topic in the prescribed time.

**Content**
Normally, a student will produce a written minor dissertation of between 10,000 and 15,000 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 issue
- Hypothesis or problem
- A current literature review
- Cogent argument
- Clear conclusions and, if necessary, appropriate recommendations

**Recommended reading**
References will be discipline specific

**HBMG411 Management Advanced Reading Unit**
20 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Written Honours dissertation proposal, Seminar presentation of the Honours dissertation proposal, Literature review
A subject in the Bachelor of Business (Honours)

**Aims & Objectives**
To explore the breadth and depth of the area of study chosen by the student in a structured environment. To allow the student to use this 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.

**Recommended reading**
References will be discipline specific

**HBP228 Manufacturing Management**
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite:
Aims & Objectives
This subject reviews integrated manufacturing systems and the manufacturing management function production, production planning and control, supply chain and inventory decision models.

Content
This subject 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.

Textbook

References
Dilworth, J.B. 2000, 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: HBP228 • Teaching methods: Lecture and Tutorial • Assessment: Assignments 40% Group assignment 40% Test 20%
A subject in the Bachelor of Business

Aims & Objectives
This subject develops the undertaking of quality management and outlines the implementation of total quality management in the Australian context.

Content
A subject focusing on the requirements of total quality management within an enterprise. The stages of quality progress 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 subject also covers the definition of quality, and competing through the dimensions of quality. The steps to ISO 9000 accreditation and benchmarking are also discussed.

Textbook

References

HBP337 Managing Technology and Innovation
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBP336 • Teaching methods: Lecture and Tutorial • Assessment: Assignment 40% Group assignment 40% Test 20%
A subject in the Bachelor of Business

Aims & Objectives
This subject 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 subject 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 subject 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.

Textbook

References
Jackson, S. and Sawyer, R. 2001, Managerial Accounting, 9th edn, Orlando, Harcourt College Publisher.

HBP410 Manufacturing Management Honours Dissertation
60 Credit Points • 1 Semester (full-time) • Hawthorn • Prerequisite: HBP415 and HBP411 • Teaching methods: Supervision • Assessment: Dissertation
A subject in the Bachelor of Business (Honours)

Aims & Objectives
The student’s independent research work will be supervised by a suitably qualified member of Swinburne academic staff. The topic of the dissertation, while being set by the student, must be consistent with:
• The broad content of the research discipline.
• 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 10,000 and 15,000 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 issue
• Hypothesis or problem
• A current literature review
• Cogent argument
• Clear conclusions and, if necessary, appropriate recommendations

Recommended reading
References will be discipline specific.

HBP411 Manufacturing Management Advanced Reading Unit
20 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Written Honours dissertation proposal, Seminar presentation of the Honours dissertation proposal, Literature review
A subject in the Bachelor of Business (Honours)

Aims & Objectives
To explore the breadth and depth of the area of study chosen by the student in a structured environment. To allow the student to use this 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.

Recommended reading
References will be discipline specific.

HBQ229  Marketing Research
12.5 Credit Points  •  1 Semester  •  2 Hours per Week  •  Hawthorn  •  Prerequisite: HBQ110 and HBQ110 or HBQ111; or one of the following subjects: HMA103, HMA104, HMA102  •  Corequisite: HBQ220  •  Teaching methods: Lecture, Tutorial and Laboratory  •  Assessment: Tutorial participation 5%  SSPP assignment 30%  Fieldwork assignment 20%  Examination 45%

A subject in the Bachelor of Business

Aims & Objectives
The main focus of this subject is to develop in students a theoretical and practical understanding of the market research process. It enables students to make informed decisions about the benefits and uses of market research, particularly in terms of improving existing business offerings and to assist in innovation and entrepreneurship of new offerings. It does this by teaching students about the marketing research process and methods, and also by teaching them how to analyse and interpret an SPSS database.

Content
The subject consists of five parts:
• Understanding the nature of the management and marketing problems, and the ethics involved in marketing research.
• Developing the most appropriate research design to address different research situations.
• Implementation of the research design.
• Analysis of a marketing research study using SPSS.
• Communication of the results, incorporating ideas for further research and suggestions for improvements in current offerings.

Students will be required to learn how to use SPSS for Windows to analyse market research data.

Textbook

Students who need an SPSS text are strongly advised to buy:

References

HBQ415  Research Methodology
20 Credit Points  •  1 Semester  •  4 Hours per Week  •  Hawthorn  •  Prerequisite: Credit average in completed undergraduate studies  •  Teaching methods: Several teaching methods will be adopted, including formal lectures, tutorials, laboratories and seminars  •  Assessment: Class work 10%; Group assignment work 45%; Individual assignments 45%

A subject in the Bachelor of Business (Honours)

Aims & Objectives
To equip students with the necessary skills to undertake studies towards higher degrees. The student will become competent in finding, evaluating and applying research findings to a wide variety of problems. Students will be exposed to a variety of research methods, not just those relevant to their discipline of study.

Content
The subject will include the following topics:
• Introduction to research methodology
• Selection and definition of a problem
• Preparation and evaluation of research proposals
• Selection of a sample
• Selection of a measuring instrument
• Selection and evaluation of qualitative and quantitative research methods
• Data analysis and interpretation
• Preparation of a research report
• Research critiques

Textbook

References
Cavana, R.Y., Delahaye, B.L. and Sekaran, U. 2001, Applied Business Research: Qualitative and Quantitative Methods, Australia, John Wiley & Sons.

HBSG200  New Venture Development & Management
12.5 Credit Points  •  1 Semester  •  Hawthorn  •  Prerequisite: Nil  •  Teaching methods: Distance Learning & Tutorials  •  Assessment: Assignments (50%), Examinations (50%)

A core subject in the Graduate Diploma in Construction Management, Master of Technology Management (Construction Management), Graduate Diploma in Logistics, Master of Technology Management (Logistics), Graduate Diploma in Risk Management, Master of Technology (Risk Management), and an elective subject in the Bachelor of Film and Television.

Aims & Objectives
This subject 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. The subject will be directed at developing practical skills and experience, rather than having a strong focus on theory.

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 operational system design and implementation for new ventures (purchasing and processing).
• 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.
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 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.

References
To be advised.

HBSH200 Organisation Behaviour
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HBSH100 • Teaching methods: Lectures, Laboratory Sessions • Assessment: Class Exercises, Journals, Presentations, IBL Journal
A subject 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.
- Organisational culture and change.
- Power and influence.
- Personal growth and career development.
- Managing presentations.

References
To be advised.
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/provider split, business plans, specifications, tender bids, tender evaluation, contract management.

Principles of risk management.

References

Hubbard, G. et al, Practical Australian Strategy.
Streets, S., Administrative Law, 2nd edn, Butterworths Casebook Companions.

HBSL100 Introductory Law

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
Teaching methods: Lectures, Tutorials, Workshops • Assessment: Class presentations, Examinations, Tests

A subject in the Bachelor of Health Science (Public and Environmental Health).

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.

References


HBSL200 Environmental Health Management 2

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HBSL100 • Teaching methods: Lectures, Tutorials, Class Exercises • Assessment: Assignments, Class presentations, Examinations, Tests

A subject in the Bachelor of Health Science (Public and Environmental Health).

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 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.

State Environment Protection Policies.


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.

References

Health Act.

Environment Protection Act.

HBT410 Information Systems Honours Dissertation

60 Credit Points • 1 Semester • Hawthorn • Prerequisite: HBD415 and HBT411 • Teaching methods: Supervision • Assessment: Dissertation

A subject in the Bachelor of Business (Honours)

Aims & Objectives

The student’s independent research work will be supervised by a suitably qualified member of Swinburne academic staff. The topic of the dissertation, while being set by the student, must be one consistent with:

• The broad content of the discipline within which the research has been taken.

• The capacity of the student to realistically complete research into the topic in the prescribed time.

Content

Normally, a student will produce a written minor dissertation of between 10,000 and 15,000 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 issue

• Hypothesis or problem

• A current literature review

• Cogent argument

• Clear conclusions and, if necessary, appropriate recommendations

Recommended reading

References will be discipline specific

HBT411 Information Systems Advanced Reading Unit

20 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Written Honours dissertation
Aims & Objectives

To explore the breadth and depth of the area of study chosen by the student in a structured environment. To allow the student to use this 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.

Recommended reading

References will be discipline specific.

HDCD111 Design Communication Studio 1

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Seminars, Tutorials and Exercises • Assessment: Continuous

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

- To develop an understanding of the principles, theories and skills of design in graphic design planning, methods and technology.
- To develop the fundamental aspects of the content, function and context of visual communication as a means of communication.
- To develop methods of directing creativity through the formation of communication strategy.

Content

Through various methods, fundamental aspects of design, key aspects of communication are introduced through projects that identify and define problem-setting and context. Projects introduce students to the application of the principles of design that help define the design process. Processes and methods that facilitate problem analysis and resolution in creative, conceptual and technical modes will be introduced and utilised. Development of visual awareness, visual literacy and visual thinking is emphasised, as is the creation of opportunities in an environment which promotes active experimentation, exploration and 'play' resulting in outcomes that successfully communicate ideas and information by visual means. Fundamentals of communication design through typographic understanding are introduced to define its symbolic and communicative aspects.

HDCD112 Technology 1

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Tutorials, Exercises and Workshops • Assessment: Assignments, Class exercises

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

The subject introduces the student to a variety of design technology and explores skills necessary for engagement with fundamentals of communication design course work. Students are encouraged to master a variety of technical approaches to resolving communication outcomes.

Content

The content includes the introduction of computing conventions, terminology and computer operating environments. Students are encouraged to develop systematic and methodical approaches to the organisation, storage and back-up of digital data. Instruction in the operation of software for the creation and manipulation of images text and layout is delivered.

HDCD121 Design Communication Studio 2

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Seminars, Tutorials and Exercises • Assessment: Continuous

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

- To develop an understanding of the principles, theories and skills of design in graphic design planning, methods and technology.
- To develop the fundamental aspects of the content, function and context of visual communication as a means of communication.
- To develop methods of directing creativity through the formation of communication strategy.

Content

Through various methods, fundamental aspects of design, key aspects of communication are introduced through projects that identify and define problem-setting and context. Projects introduce students to the application of the principles of design that help define the design process. Processes and methods that facilitate problem analysis and resolution in creative, conceptual and technical modes will be introduced and utilised. Development of visual awareness, visual literacy and visual thinking is emphasised, as is the creation of opportunities in an environment which promotes active experimentation, exploration and 'play' resulting in outcomes that successfully communicate ideas and information by visual means. Fundamentals of communication design through typographic understanding are introduced to define its symbolic and communicative aspects.

HDCD122 Technology 2

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Tutorials, Exercises and Workshops • Assessment: Class exercises

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

The subject introduces the student to a variety of design technology and explores skills necessary for engagement with fundamentals of communication design course work. Students are encouraged to master a variety of technical approaches to resolving communication outcomes.

Content

The content includes the introduction of computing conventions, terminology and computer operating environments. Students are encouraged to develop systematic and methodical approaches to the organisation, storage and back-up of digital data. Instruction in the operation of software for the creation and manipulation of images text and layout is delivered.

HDCD231 Design Communication Studio 3

25 Credit Points • 1 Semester • Prahran • Prerequisite: Nil • Teaching methods: Projects conducted in a studio environment, on location, through seminars, student

References will be discipline specific.
consultation/discussion, demonstrations and critiques. Contextual studies presented by lecturer. • Assessment: Continuous

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

• To gain knowledge and experience communication design through an understanding of a visual language.
• To establish and explore specific design projects in words, pictures and, where appropriate or possible, sound and motion to convey imaginative and compelling ideas to a particular audience.
• To develop aspects of design strategy in graphic design and communication design.
• To produce a body of visual communication in the form of a cohesive document that demonstrates a student’s understanding of the process and production of communication design.
• To continue to develop fundamental aspects of the content, function and context of visual communication as a means of design.
• To further enhance methods of directing creativity through the formation of communication strategy.

Content

Image generation, research and reference, design methodologies and synthesis will be included in applied project work. Methods the practice of idea generation will be explored. Information and communication design will be explored within structured aspects of production and professional practice. Students will also explore various aspects of three dimensional design. Issues of content, context and meaning will be addressed in most projects. Project outcomes may be further developed in Technology 3 & 4, Graphic Communications 3 and Research Project. Contextual studies will formally investigate and present critical, fields of enquiry to demonstrate breadth of understanding in design.

The requirements for this subject include attendance at six one-hour lectures to be presented over the semester. Students will be required to keep a portfolio of any papers and/or material distributed in conjunction with these lectures and submit these, with a report of approximately 250 words on each lecture at the conclusion of the subject. The subject of the lectures will be integrated with the issues underlying selected studio projects both in that, and subsequent, semesters. These lectures will contribute to locating student experiences within the historical and contemporary social and theoretical contexts for design.

References


HDCD233 Technology 3

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Tutorials, Exercises and Workshops • Assessment: Class exercises

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

Technology 3 elaborates the exploration of conventions and techniques of professional design practice with specific reference to technology initiated in Technology 1 and 2.

Content

The content of Technology 3 expands on the issues introduced in Technology 1 and 2 and further examines the technical implications of mass production and mass communication for the design practitioner. Aspects of professional practice related to sequence, motion and audience interaction are explored.

HDCD241 Design Communication Studio 4

25 Credit Points • 1 Semester • Prahran • Prerequisite: Nil • Teaching methods: Projects conducted in a studio environment, on location, through seminars, student consultation/discussion, demonstrations and critiques. Contextual studies presented by lecturer. • Assessment: Continuous

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

• To gain knowledge and experience communication design through an understanding of a visual language.
• To establish and explore specific design projects in words, pictures and, where appropriate or possible, sound and motion to convey imaginative and compelling ideas to a particular audience.
• To develop aspects of design strategy in graphic design and communication design.
• To produce a body of visual communication in the form of a cohesive document that demonstrates a student’s understanding of the process and production of communication design.
• To continue to develop fundamental aspects of the content, function and context of visual communication as a means of design.
• To further enhance methods of directing creativity through the formation of communication strategy.

Content

Image generation, research and reference, design methodologies and synthesis will be included in applied project work. Methods the practice of idea generation will be explored. Information and communication design will be explored within structured aspects of production and professional practice. Students will also explore various aspects of three dimensional design. Issues of content, context and meaning will be addressed in most projects. Project outcomes may be further developed in Technology 3 & 4, Graphic Communications 3 and Research Project. Contextual studies will formally investigate and present critical, fields of enquiry to demonstrate breadth of understanding in design.

References

To be advised.

HDCD242 Research Project

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: This will include group discussion, activities, tutorials, and consultation. There will be continuous formative feedback, individually and in peer groups, of work in progress. • Assessment: Continuous, Folio presentations

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

• To demonstrate an understanding of how to apply and expand on ‘received information’ within a self-directed project.
• To develop independent research and project management skills.
To appreciate the contextual relationships in the photographic image.

To develop and communicate photographic ideas, skills and methods in communication design.

To build on and further explore principles of photographic knowledge.

To gain an understanding of skills required to realise graphic solutions.

To explore craft skills, media technology explores and applications in graphic mediums.

To appreciate the contextual relationships in the photographic image.

Photography is one component of design communication. Photography will relate conceptually to design communication and provide opportunities to develop ideas and skills in the principles, methods and technologies of design. Students will further develop photographic knowledge. They will be introduced to the principles of studio lighting, various camera formats, digital imaging devices and visualising the creative concept through photographic means. The symbiotic relationship between photographic image and other learned design skills will be included. Students will develop a solid grasp of contextual, conceptual and practical issues in resolving an image for digital or conventional outcome.

References

Aims & Objectives
- To demonstrate the acquisition of skills and knowledge within the context parameters that surround the individual design process.
- To demonstrate an ability to present the project outcome(s) utilising appropriate professional presentation methods.

Content
Students will complete a comprehensive self-directed project that gives reference to the contextual series of lectures conducted during the first four semesters of the course. Sessions will include: establishing a project framework, timeline and documentation format. The project proposal will establish a focus and a working methodology. The project provides an opportunity for the student to consolidate design principles, methodologies and technologies. Appropriate forms of presentation will be explored within the context of the individual project.

HDCD243 Photography in Communication Design

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil
Teaching methods: Practical demonstrations in class, student consultations, Preview of project outcomes in sessions. Learning outcomes will be assessed through submitted work: Class critique and discussion. Continuing assessment and group presentation. • Assessment: Class exercises, Project(s)

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
- To develop and communicate photographic ideas, skills and methods in communication design.
- To build on and further explore principles of photographic knowledge.
- To gain an understanding of skills required to realise graphic solutions.
- To explore craft skills, media technology explores and applications in graphic mediums.
- To appreciate the contextual relationships in the photographic image.

Photography is one component of design communication. Photography will relate conceptually to design communication and provide opportunities to develop ideas and skills in the principles, methods and technologies of design. Students will further develop photographic knowledge. They will be introduced to the principles of studio lighting, various camera formats, digital imaging devices and visualising the creative concept through photographic means. The symbiotic relationship between photographic image and other learned design skills will be included. Students will develop a solid grasp of contextual, conceptual and practical issues in resolving an image for digital or conventional outcome.

References

HDCD244 Information Design

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Fundamental typographic and diagrammatic software programs, understanding of grid structures preferred • Teaching methods: Project-based learning through seminars, tutorials, exercises, group discussion and directed independent learning. Practical demonstrations in class, student consultations, preview of project outcomes in sessions. Learning outcomes will be assessed through submitted work: Class critique and discussion. Continuing assessment and group presentation. • Assessment: Final report presentation

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
- To present visual ideas and conventions employing designed communication through meaning, aesthetic response and critical judgement.
- To analyse, describe, invent and propose structured diagrammatic visual documents.
- To appreciate time-based multimedia in building image sequences, animating graphics and motion typography.
- To appreciate the possibilities of information architecture, interfaces and narrative for publication.

To design documents that demonstrate grid and communicative form related to sequencing in textual, diagrammatic and pictorial content within communication design.

Content
Explores editorial and visual structures, designing grids and determining effective communication strategies for multipage documents with increasingly complex text requirements. Understanding how to develop a comprehensive idea for specific communication objects through informed documentation. Analysing information as data and producing visual outcomes that explore meaning and form in graphic and typographic mediums. Proposing imaginative, inventive and appropriate ways of communicating complex information clearly

References

HDCD245 Imaging for Communication Design

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Demonstrated ideas and skill in utilising various drawing mediums preferred • Teaching methods: Project-based learning through seminars, tutorials, exercises, group discussion and directed significant independent learning through the exploration of ideas. Practical demonstrations in class, student consultations, preview of project outcomes in sessions. Learning outcomes will be assessed through submitted work: Class critique and discussion. Continuing assessment and group presentation. • Assessment: Continuous

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
- To introduce students to the purpose of imaging in its fundamental uses, to inform, invent, describe, express and represent ideas.
- To conceptualise and define creative problem-solving in image design.
- To describe, inform, express, enhance and represent ideas within communication design.

Content
Systematised drawing and imaging through various media and mediums to communicate ideas and information by investigation and expression. Working with drawing and imaging for defined purpose, visual emphasis, meaning and structure. Exploring the ubiquitous nature of drawing in manual and electronic form, for a wide range of uses and applications Determine different intentions and emphasis in image-related design projects

References

HDCD246 Interactive Design

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Fundamental knowledge of multimedia software programs, preferred understanding of strategic communication concepts • Teaching methods: Project-based learning through group learning teams, seminars, tutorials, exercises, workshops, group discussion and directed independent learning. Practical demonstrations in class, student consultations and preview of project outcomes in sessions. Learning outcomes will be assessed through submitted work, class critique and discussion. Continuing assessment and group presentation. • Assessment: Continuous

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
- To introduce students to time-based communication.
- To investigate and appreciate aspects of interaction design.
- To introduce and develop understanding of the different types of interactive products.
• To produce storyboards, narratives and flow diagrams.
• To introduce and explore various fundamental notions of useability.
• To propose the application of technology and communication in a time-based publication.

Content
Students conceptually explore information in time- and screen-based publication. Navigation structures are investigated as well as communication methods and models, structure and conceptual models in multimedia. Elements of timing and minor sound elements are included in the project. Students develop an understanding of the basic concepts of communicating new media, establishing continuity in form and content by exploring ideas in visual rhetoric. Limited project applications occur through a multimedia project.

HDCD351 Design Communication Studio 5
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil
Teaching methods: Project work will be undertaken in a studio context, supplemented by work in tutorial groups, continuous critical review of work in progress, working in small teams and group discussion. Lecture sessions will also be conducted in collective presentations. The projects will be supported by presentations of visual and background research in a group lecture situation by staff and/or students. Assessment: Continuous
A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
• To provide the opportunity for a comprehensive investigation into the fundamentals of applied communication design and visual communication through project work.
• To utilise imagery and words and, if possible, motion and sound, to convey imaginative and innovative ideas in various media.
• To develop skills in pertinent software applications.
• To contribute to the student's development of sound idea-generation methodologies.
• To develop aspects of professional design practice.

Content
Students complete a series of applied communication projects. These projects may include 2D, 3D, print- and screen-based media. Projects provide an opportunity for imaginative and innovative ideas in various media.

HDCD352S Graphic Communications 5
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil
Teaching methods: Teaching is conducted in both lecture theatre and computer laboratory settings as dictated by the specific content. Engagement during class time includes seminars, group discussion, ongoing tutorials and the collaborative critical review of both work in progress and completed projects. Assessment: Continuous
A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
• To provide the opportunity for the experience and understanding of the concepts and practices involved in being professionally engaged as a communication design practitioner.
• To develop proficiency in design project management skills in the understanding of business systems and production.

HDCD351S Design Communication Studio 5
12.5 Credit Points • 1 Semester • External Venue • Prerequisite: Nil
Teaching methods: Project work will be undertaken in a studio context supplemented by work in tutorial groups, continuous critical review of work in progress, working in small teams and group discussion. Seminars sessions will also be conducted in collective presentations. The projects will be supported by presentations of visual and background research in a group lecture situation by staff and/or students. Assessment: Continuous, Project Progress
A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
• To provide the opportunity for a comprehensive investigation into the fundamentals of applied communication design and visual communication through project work.
• To utilise imagery and words and, if possible, motion and sound, to convey imaginative and innovative ideas in various media.
• To develop skills in pertinent software applications.
• To contribute to the student’s development of sound idea-generation methodologies.
• To develop aspects of professional design practice.

Content
Students complete a series of applied communication projects. These projects may include 2D, 3D, print- and screen-based media. Projects provide an opportunity for the investigation of design principles, methodologies and technologies particular to the design industry. Outcomes of projects are focussed towards equipping the student with an industry relevant folio at the completion of the degree.

HDCD352 Graphic Communications 5
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prerequisite: Nil
Teaching methods: Teaching is conducted in both lecture theatre and computer laboratory settings as dictated by the specific content. Engagement during class time includes seminars, group discussion, ongoing tutorials and the collaborative critical review of both work in progress and completed projects. Assessment: Continuous
A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
• To provide the opportunity for the experience and understanding of the concepts and practices involved in being professionally engaged as a communication design practitioner.
• To develop proficiency in design project management skills in the understanding of business systems and production.

HDCD353 Interface Design
12.5 Credit Points • 1 Semester • 4 Hours per Week • External Venue • Prerequisite: Nil
Teaching methods: Teaching is conducted in both lecture theatre and computer laboratory settings as dictated by the specific content. Engagement during class time includes seminars, group discussion, ongoing tutorials and the collaborative critical review of both work in progress and completed projects. Assessment: Project Progress
A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
• To provide the opportunity for the experience and understanding of the concepts and practices involved in being professionally engaged as a communication design practitioner.
• To develop proficiency in design project management skills in the understanding of business systems and production.
• To contribute to the student's development of sound design methodologies.
• To further develop aspects of professional design practice.
• To develop skills in conceptual, critical and technical problem-solving in this medium.
• To develop inventiveness, creativity and innovation in communication.

Content
Interface Design will explore the unique design characteristics and visual language of screen-based and print-based design, emphasising typographic approaches. Ideas and design resolution, market/audience positioning will be considered. An investigation of processes utilised in contemporary screen-based and print communication design will underpin project work. Interface Design will cover designing user interfaces for a number of communication areas, including applications for multimedia design and exhibition design. Students will be encouraged to exhibit project work.

HDCD353 Image Based Design
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prerequisite: Nil
Teaching methods: Project work will be undertaken in a combination of seminars, studio sessions, tutorial groups and individual consultation. Continuous critical review of work in progress, working in small teams and group discussion. The briefs will be supported by presentations of visual and background research in a group tutorial situation by staff and/or students. Assessment: Continuous
A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
• To provide opportunity for investigation into, and development of, basic image-making craft skills and to allow for the development of a personal signature image-making style.
• To explore numerous image-making techniques ranging from traditional media to new digital methodologies.
• To develop sound idea generation methodologies in relation to creating images.
• To encourage creative and expressive development in image creation.
• To develop images for an applied context.
• To further develop aspects of professional design practice.

Content
Investigations into various media and techniques will be a primary concern, undertaken via project work. Here, demonstrations and personal development of image-making skills in both traditional media and digital media are to be a primary objective of this subject. Analysis of appropriateness of imagery and its relevance to its media context will also occur.

References

HDCD353S Interface Design
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prerequisite: Nil
Teaching methods: Project work will be undertaken in a combination of seminars, studio sessions, tutorial groups and individual consultation. Continuous critical review of work in progress, working in small teams and group discussion. The briefs will be supported by presentations of visual and background research in a group tutorial situation by staff and/or students. Assessment: Continuous
A subject in the Bachelor of Design (Communication Design/formerly Graphic Design)

Aims & Objectives
• To develop knowledge and experience in design for a medium that reinterprets design as ‘interface design’.
• To encourage creative and expressive development in design for print and electronic publication.
• To further develop skills in pertinent software applications.
• To contribute to the student’s development of sound design methodologies.
• To further develop aspects of professional design practice.

• To develop skills in conceptual, critical and technical problem-solving in this medium.
• To develop inventiveness, creativity and innovation in communication design.

Content
Interface Design will explore the unique design characteristics and visual language of screen-based and print-based design, emphasising typographic approaches. Ideas and design resolution, market/audience positioning will be considered. An investigation of processes utilised in contemporary screen-based and print communication design will underpin project work. Interface Design will cover designing user interfaces for a number of communication areas, including applications for multimedia design and exhibition design. Students will be encouraged to exhibit project work.

HDCD355 Design for Publication
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prerequisite: Fundamental knowledge of publication software preferred
Teaching methods: Project work will be undertaken in a combination of seminars, studio sessions, tutorial groups and individual consultation. Continuous critical review of work in progress, working in small teams and group discussion. The briefs will be supported by presentations of visual and background research in a group tutorial situation by staff and/or students. Assessment: Continuous
A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
• To provide the opportunity for advanced enquiry and investigation into: word and image-relationships, editorial design – the temporal nature of sequence-based design typography through project work.
• To demonstrate and expand upon a formal understanding of the conventions of typographic and editorial/publication design.
• To encourage creative and expressive development of word- and picture-based communication.
• To encourage creative and expressive development of design for publications.
• To develop advanced skills in pertinent software applications (image-making and text-based). To contribute to the students’ development of sound idea-generation methodologies.
• To further develop aspects of professional design practice.

Content
Investigation into more complex document design involving advanced typographic and computer-based techniques will occur. Constant definition and exploration of editorial and publication design conventions plus observation and analysis of typeface selections for their appropriateness to editorial/layout context. Increased knowledge of design applications in regard to both contemporary design practice and production outcomes will underpin all project work. Creative, innovative and expressive development of word/picture based visual languages will be encouraged.

HDCD356 Graphic Design Discourse
12.5 Credit Points • 1 Semester • 3 Hours per Week • Prerequisite: Nil
Teaching methods: Readings, group work and assignments aim to develop students’ ability to understand and address how design in communication is formed and produced. Seminar program based on set readings and class discussion. Presentations, site visits, tutorial sessions, class discussions project critique. Assessment: Continuous
A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
Students will develop strategies for research production:
• To understand and advance body of knowledge in graphic design.
• To understand communication design and graphic design as a form of visual rhetoric.
• To develop a visual essay as design practice.
• To explore and appreciate aspects of communication theory and traditional semiotic methods in visual design.
Aims & Objectives

- To engage students in critical analysis of design as communication and involve students in a discourse that informs and supports the profession of communication design.

Content

Students define and debate contemporary notions of graphic design discourse. The subject will address the interplay of communication design, its context, and relationship to technology and electronic culture. Students will develop and communicate this study as a design initiative, applying concepts to a wide-ranging design development and to a visual project as a report on research. The design process will be undertaken in small groups so as to develop personal communication skills, management and organisational skills and group dynamics. Methods of research and analysis in visual methods will be further developed.

References


HDCD361 Design Communication Studio 6

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Teaching is conducted in both lecture theatre and computer laboratory settings as dictated by the specific content. Engagement during class time includes seminars, group discussion, ongoing tutorials and the collaborative critical review of both work in progress and completed projects. • Assessment: Continuous

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

- To develop aspects of professional design practice in strategy, form and content.

Content

Students research and complete a single, focused complex communication project. The project will have several applied outcomes, which may include two dimensional, three dimensional, print- and screen-based media. The project provides an opportunity for the student to consolidate design principles, methodologies and technologies in and focus the outcomes towards a specific sector of the design industry. Outcomes of this project are aimed towards assisting the student with an industry-relevant folio at the completion of the degree.

HDCD362 Graphic Communications 6

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Teaching is conducted in both lecture theatre and computer laboratory settings as dictated by the specific content. Engagement during class time includes seminars, group discussion, ongoing tutorials and the collaborative critical review of both work in progress and completed projects. • Assessment: Continuous

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

- To provide further opportunity for the experience and understanding of the systems, methodologies and technologies relevant to contemporary communication design practice within the professional design industry.

Content

Through a series of projects, aspects of print-based and multimedia software will be provided. Further concentrated projects will engage with specific production technologies. Instruction in advanced aspects of print-based software. A demonstration of competency in particular computer applications is expected before commencing this subject. Case study presentation of industry-based design projects will be included. Projects are presented in the context of design management: through the presentation of the principles and practices involved in being professionally engaged as a communication design practitioner. Planning, development and design of individual, industrially focused folio document.

HDCD362S Graphic Communications 6

12.5 Credit Points • 1 Semester • 4 Hours per Week • External Venue • Prerequisite: Nil • Teaching methods: Teaching is conducted in both lecture theatre and computer laboratory settings as dictated by the specific content. Engagement during class time includes seminars, group discussion, ongoing tutorials and the collaborative critical review of both work in progress and completed projects. • Assessment: Continuous

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

- To provide further opportunity for the experience and understanding of the systems, methodologies and technologies relevant to contemporary communication design practice within the professional design industry.
• To further establish proficiencies in design project management skills and the understanding of business systems and production.
• To prepare an individualised, professionally focused folio document. This document being integral to the graduate entering the professional environment or pursuing further study.

Content
Through a series of projects, aspects of print-based and multimedia software will be provided. Further concentrated projects will engage with specific production technologies. Instruction in advanced aspects of print-based software. A demonstration of competency in particular computer applications is expected before commencing this subject. Case study presentation of industry-based design projects will be included. Projects are presented in the context of design management: through the presentation of the principles and practices involved in being professionally engaged as a communication design practitioner. Planning, development and design of individual, industrially focused folio document.

HDCD366 Context Culture & Identity
12.5 Credit Points  1 Semester  3 Hours per Week  Prahran  Prerequisite: Nil  Teaching methods: Project-based seminar program based on excursions, set readings and class discussion  Assessment: Continuous
A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
Site visits and excursions will be designed to engage students in the analysis of the contemporary environment. Readings, group work and assignments aim to develop students’ ability to understand and address how perceptions of objects, social spaces, constructed structures and even ourselves are constructed through myth and diverse cultural production, notably design.
Specific objectives are:
• To engage students in the critical analysis of design manifest in the contemporary environment and involve them in a critical and topical discourse that informs and supports the professional practice of communication design.
• To develop further students’ research and academic skills.

Content
The focus is commodity culture and the role of design in the construction of individual subjectivity’s and lifestyle narratives. This role of design in the construction of taste and its relationship to the rise of leisure and luxury industries, and the gentrification of the inner city, are explored. Issues pertaining to social responsibility and professional ethics are also addressed.

HDCD471 Design Communication Studio 7
25 Credit Points  1 Semester  Prahran  Prerequisite: Nil  Teaching methods: Projects will generally be conducted within student-centred studio environment on a work-in-progress basis. Group discussion, site visits, research, consultation, evaluation, critique sessions and presentations will be conducted where appropriate. Students will integrate design and technology investigating the limits of digital media in complex communication design projects.  Assessment: Class Presentations, Project(s)
A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
• To enhance and develop the knowledge and professional experience gained during the previous year in industry or to enhance and develop the quality of visual communication undertaken in the final year of a Bachelor of Design program.
• To explore the relationship between intellectual investigation and practice through specific design projects in advanced areas of communication design.
• To combine words, pictures, sound and motion to convey highly imaginative and compelling ideas to a particular audience.
• To further develop aspects of design leadership through design strategy and communication.
• To effectively document and complete a body of design projects for professional preparation and publication.
To describe significant aspects of professional practice, through planning, strategy and communication.

Content
Students undertake a variety of creative projects at an advanced level. Where appropriate, professional, client-based projects may be undertaken. External projects and external consultation may also occur where appropriate. Students develop complete communication design projects, from initial research and problem analysis through conceptual development and presentation of sophisticated design outcome. Students will normally undertake a range of projects within the areas of design communication, publication design, visual identity, advertising, communication design, digital design and image-making. Students will also propose connections between two-dimensional design and three-dimensional design by written or constructed projects. Students in multimedia studios will develop the skills to create prototypes for interactive multimedia projects by integrating text, images, video and sound in original productions.

HDCD472 CD Honours Research 7
25 Credit Points  1 Semester  4 Hours per Week  Prahran  Prerequisite: Nil  Teaching methods: Projects will generally be conducted in a student-centred studio, on a work-in-progress basis. Group discussion, site visits, research, consultation, evaluation, critique sessions and presentations will be conducted where appropriate.  Assessment: Class Presentations, Continuous, Project(s)
A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
• To apply professionally-related skills and advanced graphic techniques to a complex project.
• To apply design research methodology to a major design outcome.
• To enhance communication design concepts and skills.
• To enable students to achieve advanced solutions in visual communication, through planned, systematic, collection, analysis and interpretation of information.
• To undertake student centred learning.
• To develop skills in project management.

Content
The project will determine a body of work in communication design that examines complex ideas of representation through planned and systematic collection, analysis and interpretation of information. Honours research requires the undertaking of a major study, working in teams or individually, to explore research methodologies and graphic documentation. It may require students to work in teams to develop a formative proposal. Honours research normally leads to the development and execution of a major body of work defined by research methodology and the articulation of design. The project employs established and emerging research methodologies as part of the design process.

HDCD473 CD Professional Practice 7
25 Credit Points  40 Weeks  Prahran  Prerequisite: Nil  Teaching methods: Students may be assigned to working groups for individual projects. Each student will be required to take on the role of team leader for some projects and be a team members for others. Team leaders will assume greater responsibility for project management and be the daily point of contact for the client. Students will be required to engage in all aspects of design management to guide individual projects through a process to a final point of delivery. Individual projects may be assigned if called for. Staff managers may assign further tasks, including lecture, seminar or tutorial attendance and/or require a paper that demonstrates a particular strategy, including advanced principles and application of design management to be submitted.  Assessment: Class Presentations, Project(s)
A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
• To enhance and develop the quality of professional design undertaken in the honours year of the Bachelor of Design program, through applied projects.
• To further develop the professional design management skills of the students to prepare them for professional industry practice.
• To manifest as an internal, school-based, version of Industry-Based Learning.
To enable students to achieve advanced solutions in visual communication,
and to enhance communication design concepts and skills.

Aims & Objectives
A subject in the Bachelor of Design (Communication Design).

- To enhance and develop the knowledge and professional experience gained during the previous year in industry or to enhance and develop the quality of visual communication undertaken in the final year of a Bachelor of Design program.

- To explore the relationship between education and practice through specific design projects in advanced areas of communication design.

- To combine words, pictures, sound and motion to convey highly imaginative and compelling ideas to a particular audience.

- To develop aspects of design leadership through design strategy and communication.

- To effectively document and complete a body of design projects for professional preparation and publication.

To describe significant aspects of professional practice, through planning, strategy and communication.

Content
Students undertake a variety of creative projects at an advanced level. Where appropriate, professional client-based projects may be undertaken. External projects and external consultation may also occur where appropriate. Students develop complete communication design projects, from initial research and problem analysis, through conceptual development and presentation of sophisticated final design outcome. Students will normally undertake a range of projects within the areas of design communication, publication design, visual identity, advertising, communication design, digital design and image-making. Students will also propose connections between two-dimensional design and three-dimensional design by written or constructed projects. Students in multimedia studios will continue to develop the skills to create prototypes for interactive multimedia projects by integrating text, images, video and sound in original productions.

HDCD481 Design Communication Studio 8
25 Credit Points • 1 Semester • Prahran • Prerequisite: Nil • Teaching methods: Projects will generally be conducted within student-centred studio environment on a work-in-progress basis. Group discussion, site visits, research, consultation, evaluation, critique sessions and presentations will be conducted where appropriate. • Assessment: Continuous
A subject in the Bachelor of Design (Communication Design).

- To develop skills in project management.

Content
The project will determine a body of work in communication design that examines complex ideas of representation through planned and systematic collection, analysis and interpretation of information

Honours research requires the undertaking of a major study, working in teams or individually, to explore research methodologies and graphic documentation. It may require students to work in teams to develop a formative proposal. Honours research normally leads to the development and execution of a major body of work defined by research methodology and the articulation of design. The project employs established and emerging research methodologies as part of the design process.

HDCD483 CD Professional Practice 8
25 Credit Points • 40 Weeks • Prahran • Prerequisite: Nil • Teaching methods: Students may be assigned to working groups for individual projects. Each student will be required to take on the role of team leader for some projects and be a team member for others. Team leaders will assume greater responsibility for project management and be the daily point of contact for the client. Students will be required to engage in all aspects of design management to guide individual projects through a process to a final point of delivery. Individual projects may be assigned if called for. Staff managers may assign further tasks, including lecture, seminar or tutorial attendance and/or require a paper that demonstrates a particular strategy, including advanced principles and application of design management to be submitted. • Assessment: Class Presentations, Project(s)
A subject in the Bachelor of Design (Communication Design).

- To introduce learning strategies particular to the needs of design students.

Aims & Objectives
To further develop the professional design management skills of the students to prepare them for professional industry practice.

- To manifest as an internal, school-based, version of Industry-Based Learning.

Content
The following aspects will be covered as appropriate: client liaison, taking a brief; contact 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.

HDD001 Design Lab 1
25 Credit Points • 1 Semester • 9 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: 1-Hour Lecture/Briefing Session per Week; 2 x 3-Hour Tutorial/Workshop Sessions per Week; Attendance at 6 x 1-Hour Lectures per Semester; 6 Hours Report Writing for Lecture Portfolio • Assessment: Class Exercises, Project(s)
A subject in the Bachelor of Design (Communication Design) and the Bachelor of Film and Television.

- To introduce fundamental design elements, skills and methodologies appropriate to designers and relevant to the program areas within the National Institute of Design.

Aims & Objectives
To introduce fundamental design elements, skills and methodologies appropriate to designers and relevant to the program areas within the National Institute of Design.

- To forge interdisciplinary links between all cohorts of students.

Content
Within the core program, students will experience fundamental design practice through studio-based design projects and introduction lectures. Areas of activity include:

- Principles of design and the design process
- Research techniques
- Visual language and communication
- Design in context
- Design documentation
- Design-specific learning strategies
- Design history
The requirements for this subject include attendance at six one-hour lectures (separate to the introduction lectures) to be presented over the semester. Students will be required to keep a portfolio of any papers and/or material distributed in conjunction with these lectures and submit these, with a report of approximately 250 words on each lecture at the conclusion of the subject. The subject of the lectures will be integrated with the issues underlying selected studio projects in both that, and subsequent, semesters. These lectures will contribute to locating student experiences within the historical and contemporary, social and theoretical contexts for design.

Time allotment to attend the lectures is included in the contact hours for this subject.

**HDD002 Design Lab 2**

25 Credit Points • 12 Weeks • 9 Hours • Prahran • Prerequisite: Must satisfy course entry requirements • Teaching methods: 1-Hour Lecture/Briefing Session per Week; 2 x 3-Hour Tutorial/Workshop Sessions per Week; Attendance at 6 x 1-Hour Lectures per Semester; 6 Hours Report-Writing for Lecture Portfolio • Assessment: Practical Examination, Project(s)

A subject in the Bachelor of Design (Communication Design) and the Bachelor of Film and Television.

**Aims & Objectives**

- To introduce fundamental design elements, skills and methodologies appropriate to designers and relevant to the program areas within the National Institute of Design.
- To forge interdisciplinary links between all cohorts of students.
- To introduce learning strategies particular to the needs of design students.

**Content**

Within the core program, students will experience fundamental design practice through studio-based design projects and introduction lectures. Areas of activity include:

- Principles of design and the design process
- Research techniques
- Visual language and communication
- Design in context
- Design documentation
- Design-specific learning strategies.
- Design history

The requirements for this subject include attendance at six one-hour lectures (separate to the introduction lectures) to be presented over the semester. Students will be required to keep a portfolio of any papers and/or material distributed in conjunction with these lectures and submit these, with a report of approximately 250 words on each lecture at the conclusion of the subject. The subject of the lectures will be integrated with the issues underlying selected studio projects in both that, and subsequent, semesters. These lectures will contribute to locating student experiences within the historical and contemporary, social and theoretical contexts for design.

Time allotment to attend the lectures is included in the contact hours for this subject.

**HDD003 Product Design Modelling**

12.5 Credit Points • 1 Semester • 5 Hours per Week • Prahran • Prerequisite: Nil • Assessment: Project(s)

A subject in the Bachelor of Design (Industrial Design), and Bachelor of Engineering (Product Design)

**Aims & Objectives**

- To assist students in developing coherent and demonstrable understandings about digital visualisation of product designs.
- To develop an understanding of the safe workshop practices and model-making techniques as used by product designers.

**Content**

Product design projects will incorporate digital communication skills utilised in the manufacture of 3D products. Students will explore digital illustration software and rendering techniques. Workshop tutorials will be provided on the safe use of machinery and various prototyping techniques.

**HDD004 Product Design Communication 1**

12.5 Credit Points • 1 Semester • Prahran • Prerequisite: Nil • Assessment: Assignments, Folio Presentations, Project(s)

A subject in the Bachelor of Design (Industrial Design), and Bachelor of Engineering (Product Design).

**Aims & Objectives**

- To develop an understanding of the new product development process and visual communication skills.
- To develop engineering drawing communication techniques and an understanding of AS1100.
- To introduce the use of two-dimensional and three-dimensional computer-aided drafting techniques.

**Content**

Students will explore problem-solving design projects, incorporating basic physics principles, idea-generation, prototyping, testing and presentation. Projects will track the new product development process, including engineering communication principles of AS1100, orthogonal projection, sections, dimensions, symbols and tolerances using manual sketching, 2D and 3D computer-aided drafting techniques.

**HDD005 Product Design Communication 2**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Assessment: Class Presentations, Oral Presentation, Project(s)

A subject in the Bachelor of Design (Industrial Design) and Bachelor of Engineering (Product Design).

**Aims & Objectives**

- To develop an understanding of the product development process and creative problem-solving techniques.
- Utilise the basic physics principles of levers and mechanisms.
- To develop digital presentation and visualisation skills.

**Content**

Students will explore product design methodologies and areas of mechanisms and levers by undertaking product design projects. Projects will incorporate ergonomic principles, anthropometric data and mechanical design principles and testing. Tutorials will include idea-generation, creative techniques, product rendering and presentation techniques.

**HDD006 Digital Technology 3**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil

A subject in the Bachelor of Design (Industrial Design).

**Aims & Objectives**

- To develop professional digital presentation skills.
- To develop skills in design and visualisation using 3D-modelling computer software.
- To develop digital rendering and animation skills.

**Content**

Students will explore the key functions of three-dimensional CAD conceptual modellers, 3D rendering and animation software to achieve professional digital presentations. Methodologies of digital concept development will be covered, including modelling, shading, materials, lighting, cameras, file conversion, file management and exchange. Knowledge gained in this subject will be applied into the relevant Design Studio area.

**HDD007 Furniture Design Studio**

25 Credit Points • 1 Semester • 7 Hours per Week • Prahran • Prerequisite: Nil • Assessment: Assignments, Class Presentations, Oral Presentation

A subject in the Bachelor of Design (Industrial Design).
Aims & Objectives
- To explore the principals of design and design methodologies associated with the furniture manufacturing industry.
- Focus will be placed upon creative thinking, design for production, human factors and developing concepts for a specific target market.
- To provide the knowledge and skills required for the communication of design ideas using oral, written, visual, and three-dimensional and digital mediums.
- To further develop professional project management skills.

Content
Students will explore specific market sectors, such as: the office environment, design for export, design for an ageing population, hospitality, retail, medium-density housing and transportation.
Projects will provide students with an opportunity to explore innovative product development strategies employed within furniture and related product industries. Students will be required to demonstrate an ability to fully detail concepts developed for particular markets and production processes.

HDD007KL Furniture Design Studio
25 Credit Points • 1 Semester • 7 Hours per Week • Prahran • Prerequisite: Successful completion of LICT Diploma in Product Design • Assessment: Assignments, Class Exercises, Folio Presentations, Oral Presentation
A subject in the Bachelor of Design (Industrial Design).

Aims & Objectives
- To explore the principals of design and design methodologies associated with the furniture manufacturing industry.
- Focus will be placed upon creative thinking, design for production, human factors and developing concepts for a specific target market.
- To provide the knowledge and skills required for the communication of design ideas using oral, written, visual, and three-dimensional and digital mediums.
- To further develop professional project management skills.

Content
Students will explore specific market sectors, such as: the office environment, design for export, design for an ageing population, hospitality, retail, medium-density housing and transportation.
Projects will provide students with an opportunity to explore innovative product development strategies employed within furniture and related product industries. Students will be required to demonstrate an ability to fully detail concepts developed for particular markets and production processes.

HDD008 Exhibition Design Studio
25 Credit Points • 1 Semester • 7 Hours per Week • Prahran • Prerequisite: Nil
A subject in the Bachelor of Design (Industrial Design).

Aims & Objectives
- To provide students with an opportunity to explore concept development, design for production and installation for a specific target industry.
- To enable students to develop an awareness of spatial and contextual considerations.
- To generate and develop an understanding of appropriate communication techniques, timelines, budgets and project management skills.

Content
- Concepts developed for specialist applications, such as trade shows, museums, art galleries, education, multimedia and portable systems will be explored.
- Students will focus upon professional communication techniques using oral, written, visual, three-dimensional and digital mediums.
- Development of research and project management skills relevant to the design and construction of exhibitions, displays, and/or visual merchandising will be covered.
- The development of vocational skills to an acceptable industry standard and an appreciation of project costing will be required.

- An understanding of appropriate technological, commercial, environmental and cultural requirements will be explored.
- Attendance at a one-hour weekly lecture series will be recommended for all students within this subject.

HDID000 IBL Placement
37.5 Credit Points • 1 Semester • Prahran • Prerequisite: Nil • Teaching methods: To experience through contact, observation and practice the disciplines of the design industry while under the supervision and guidance of professional practitioners. • Assessment: Continuous
A subject in the Bachelor of Design (Industrial Design).

Aims & Objectives
- Generally: to provide opportunities for selected students to further their practical design education while working in industry.
- Specifically: to develop practical design and 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 National Institute of Design in cooperation with employers.

HDID121 Engineering Principles 2
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Assessment: Class Exercises, Final Examination
A subject in the Bachelor of Design (Industrial Design).

Aims & Objectives
The aim of this subject is to introduce students to basic engineering principles, materials, mechanics, forces, classification of materials, testing and basic manufacturing processes.

Content
Focus on engineering principles: levers, pulleys, gearing, forces, materials properties, and mechanisms. Elementary manufacturing concepts will be investigated. Lectures and tutorials will culminate in a final examination based on assessment of student’s knowledge and understanding of the various areas.

References

HDID231 Manufacturing Technology 3
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Assesment: Assignments, Research Paper
A subject in the Bachelor of Design (Industrial Design).

Aims & Objectives
- To provide an introduction to manufacturing techniques, processes, and material technologies.
- A strong understanding of mainstream and specialised manufacturing processes, and recent developments will be provided.
- Students will become familiar with an assortment of production processes relevant to their study area.

Content
Students will undertake research projects based on a manufacturing process, material/s, and production methods specific to both high volume and batch manufacture. Industry and site visits will be organised throughout the semester. Students will present set tasks and projects formally to the class. Students will apply specific technologies to the development of assigned design projects.

HDID232 Product Design Studio 3
25 Credit Points • 1 Semester • 7 Hours per Week • Prahran • Prerequisite: Nil • Assessment: Assignments, Class Presentations, Oral Presentation, Project(s)
Aims & Objectives
- To further explore the principles of design and design methodology specifically in the area of product design.
- Focus will be on creative thinking, design for production, human factors, and developing a strong design awareness.
- To provide the knowledge and skills required for the communication of design ideas using oral, written, visual, and 3D/digital mediums.
- To develop an awareness of the contextual parameters that surround the design process.

Content
In all activities, emphasis on the understanding of the design process will be reinforced. Creative problem-solving, the appreciation of three-dimensional form and aesthetic will be developed. Vocational skill-building in the areas of model-making, visualisation, formal presentation, and digital technologies will be undertaken. Communication of ideas both two- and three-dimensionally, and understanding of appropriate technological, commercial, and cultural requirements are expected.

The requirements for this subject include attendance at six one-hour lectures to be presented over the semester. Students will be required to keep a portfolio of any papers and/or material distributed in conjunction with these lectures and submit these, with a report of approximately 250 words on each lecture at the conclusion of the subject. The subject of the lectures will be integrated with the issues underlying selected studio projects in both that, and subsequent, semesters. These lectures will contribute to locating student experiences within the historical and contemporary social and theoretical contexts for design.

HDID241 Manufacturing Technology 4
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Assessment: Class Exercises, Report
A subject in the Bachelor of Design (Industrial Design).

Aims & Objectives
- To focus on manufacturing principles and processes specific to the area of plastic design and associated material.
- Students will be investigating various manufacturing areas and techniques.

Content
A number of areas will be focused during a program of lectures and tutorials complemented by regular industry visits. Students will report upon:
- Plastic tooling construction
- Polymer technologies
- Manufacturing processes
- Composite materials

References
To be advised.

HDID242 Research Project
12.5 Credit Points • 1 Semester • 3 Hours per Week • Prahran • Prerequisite: Nil • Assessment: Class exercises
A subject in the Bachelor of Design (Industrial Design).

Aims & Objectives
- To demonstrate an understanding of how to apply and expand upon information derived from the lecture series delivered during the first four semesters of the course.
- To develop independent research and project management skills.
- To demonstrate an ability to present the project outcome(s) utilising an appropriate, professional digital presentation technique(s).

Content
Students will complete one self-directed project. Three interactive sessions require mandatory attendance and interaction:
- Session 1: Inception: Establishing a project framework, timeline and documentation format.
- Session 2: Progress: Establishing a focus and preparation for presentation
- Session 3: Submission: Exhibition and critique

The requirements for this subject include attendance at six one-hour lectures to be presented over the semester. Students will be required to keep a portfolio of any papers and/or material distributed in conjunction with these lectures and submit these, with a report of approximately 250 words on each lecture at the conclusion of the subject. The subject of the lectures will be integrated with the issues underlying selected studio projects in both that, and subsequent, semesters. These lectures will contribute to locating student experiences within the historical and contemporary social and theoretical contexts for design.

HDID351 Digital Technology 5
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Assessment: Assignments, Examinations, Project(s)
A subject in the Bachelor of Design (Industrial Design).

Aims & Objectives
- To develop advanced professional digital presentation skills.
- To develop advanced skills in design and visualisation using multimedia software.
- Development of multimedia skills and animation.

Content
Building upon previously developed digital skills, students will utilise multimedia software to produce professional digital outcomes relevant to Web design, Internet communication, and electronic folio documentation.

HDID351KL Digital Technology 5
12.5 Credit Points • 1 Semester • 3 Hours per Week • Prahran • Prerequisite: Successful completion of UCT Diploma in Product Design • Assessment: Assignments, Project(s)
A subject in the Bachelor of Design (Industrial Design).

Aims & Objectives
- To develop advanced professional digital presentation skills.
- To develop advanced skills in design and visualisation using multimedia software.
- Development of multimedia skills and animation.

Content
Building upon previously developed digital skills, students will utilise multimedia software to produce professional digital outcomes relevant to Web design, Internet communication, and electronic folio documentation.

HDID352 Professional Context 5
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Lectures, Guest Lectures, Class Assignments, Group-related Project Work, Site Visits and Studio-based Activity • Assessment: Assignments, Project(s)
A subject in the Bachelor of Design (Industrial Design).

Aims & Objectives
- To develop aspects of professional practice related to the design of products and the role of a designer in industry.
- To empower students with an ability to develop and protect intellectual property.
- To enable students to more fully understand the role of a designer in relation to associated professions and industry sectors.
- To enable students to understand the legalities associated with new product development.

Content
Professional issues associated with the design process will be discussed. Issues will include: Intellectual property, Patents, Royalty agreements, Design
registration, Law, Design ethics, Confidentiality agreements, Return briefs/proposals, Project management, Time management.

**HDID352KL Professional Context 5**
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Successful completion of LICT Diploma in Product Design • Teaching methods: Lectures, Guest Lectures, Class Assignments, Group-related Project Work, Site Visits and Studio-based Activity • Assessment: Assignments, Project(s)
A subject in the Bachelor of Design (Industrial Design).

**Aims & Objectives**
- To introduce aspects of professional practice related to the design of products and the role of a designer in industry.
- To empower students with an ability to develop and protect intellectual property.
- To enable students to more fully understand the role of a designer in relation to associated professions and industry sectors.
- To enable students to understand the legalities associated with new product development.

**Content**
Professional issues associated with the design process will be discussed. Issues will include: Intellectual property, Patents, Royalty agreements, Design registration, Law, Design ethics, Confidentiality agreements, Return briefs/proposals, Project management, Time management.

**HDID361 Manufacturing Technology 6**
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Assessment: Class Exercises
A subject in the Bachelor of Design (Industrial Design).

**Aims & Objectives**
- To focus on advanced manufacturing principles and processes specific to the area of product design.
- Students will be exposed to a multitude of manufacturing areas and techniques.

**Content**
A program of lectures and tutorials complemented by regular site visits that students will report on. Students within groups will undertake a batch production design project and develop concepts, prototypes, packaging and costings analysis.

**HDID361KL Manufacturing Technology 6**
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Successful completion of LICT Diploma in Product Design • Assessment: Class Exercises, Design Report
A subject in the Bachelor of Design (Industrial Design).

**Aims & Objectives**
- To focus on advanced manufacturing principles and processes specific to the area of product design.
- Students will be exposed to a multitude of manufacturing areas and techniques.

**Content**
A program of lectures and tutorials complemented by regular site visits that students will report on. Students within groups will undertake a batch production design project and develop concepts, prototypes, packaging and costings analysis.

**HDID362 Product Design Studio 6**
25 Credit Points • 1 Semester • 7 Hours per Week • Prahran • Prerequisite: Nil • Assessment: Class Exercises, Oral Presentation
A subject in the Bachelor of Design (Industrial Design).

**Aims & Objectives**
- To develop aspects of professional practice related to the design of products and the role of a designer in industry.
- To enable students to more fully understand the role of a designer in relation to associated professions, industry sectors and meeting human needs.

**Content**
Issues associated with professionalism and the design process.
- Design futures: the role of the designer within a changing social, political, economic market and technological climate.

**HDID363 Professional Context 6**
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Lectures, Guest Lectures, Class Assignments, Group-related Project Work, Site Visits and Studio-based Activity • Assessment: Assignments, Class Exercises, Project(s)
A subject in the Bachelor of Design (Industrial Design).

**Aims & Objectives**
- To prepare students for employment within the design industry and/or further study. Focus will be placed upon creative thinking, design for production, human factors, and design for real world needs. Links with industry and commercial practice will be encouraged.
- A continuation of skill-building required for the communication of design ideas using oral, written, visual, and 3D/digital mediums will be pursued.
- Development of research and project management skills relevant to the students project direction and content will be required.
- To develop an awareness of the contextual parameters that surrounds the design process.

**Content**
In all activities, emphasis on understanding product detailing and manufacture will be reinforced. Creative solutions and the appreciation of three-dimensional form and aesthetic will be further developed. Further development of vocational skills to an acceptable industry standard will be required. Communication of ideas both two- and three-dimensionally and understanding of appropriate technological, commercial, environmental, and cultural requirements are expected. Attendance at a one-hour weekly lecture series will be recommended for all students within this subject.

Swinburne University of Technology | Undergraduate Course Handbook 2004
• Consideration of issues that relate to ethics, ecology, environment and human needs in the context of sustainability.
• Identification of requirements for the development of design solutions for domestic and export markets.

**HDID363KL Professional Context 6**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Successful completion of LICT Diploma in Product Design • Teaching methods: Lectures, Guest Lectures, Class Assignments, Group-related Project Work, Site Visits and Studio-based Activity • Assessment: Assignments, Project(s)

A subject in the Bachelor of Design (Industrial Design).

**Aims & Objectives**

• To develop aspects of professional practice related to the design of products and the role of a designer in industry.
• To enable students to more fully understand the role of a designer in relation to associated professions, industry sectors and meeting human needs.

**Content**

• Issues associated with professionalism and the design process.
• Design futures: the role of the designer within a changing social, political, economic market and technological climate.
• Consideration of issues that relate to ethics, ecology, environment and human needs in the context of sustainability.
• Identification of requirements for the development of design solutions for domestic and export markets.

**HDID471 Studio Practice 7**

25 Credit Points • 1 Semester • 7 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Projects will generally be conducted within student-centred studio environment on a work-in-progress basis. Group discussion, site visits, research, consultation, evaluation, critique sessions and presentations will be conducted where appropriate. • Assessment: Folio Presentations, Project(s)

A subject in the Bachelor of Design (Industrial Design).

**Aims & Objectives**

• To enhance and further develop the knowledge and professional experience gained during the previous year in industry or to enhance and develop the quality of design project work undertaken in the final year of a Bachelor of Design program.
• To explore the relationship between intellectual investigation and practice through specific design projects in advanced areas of communication design.
• To further develop aspects of design leadership through design strategy and communication.
• To effectively document and complete a body of design projects.
• To enhance skills in CAD, presentation, specification, ergonomics (and, where appropriate, marketing) to a highly professional level.

**Content**

Students undertake a variety of creative projects at an advanced level. Where appropriate, professional, client-based projects may be undertaken. External projects and external consultation may also occur where appropriate. Students develop complete design projects, from initial research and problem analysis through conceptual development and presentation of sophisticated final design outcome.

**HDID472 ID Honours Research 7**

25 Credit Points • 1 Semester • 7 Hours per Week • Prahran • Prerequisite: Successful completion of all year 3 subjects and/or interview and folio presentation • Teaching methods: Research will be undertaken using a combination of empirical and bibliographic sources. Research will also involve studio workshops activity. Both will be undertaken in consultation with staff. • Assessment: Final Report Presentation, Research Paper

A subject in the Bachelor of Design (Industrial Design).

**Aims & Objectives**

• To introduce students to an in-depth analysis of design topics using research methods and to the benefits of such analysis to the development of design.
• To develop project management skills.

**Content**

The research project will involve the investigation of design topics using appropriate research methods. The student, in consultation with the Subject Convener, the Research Coordinator and the Year Coordinator, will select the research project. The result of this investigation will provide the basis of a written research component and a design component.

The written research component may take the form of:
• Dissertation; or
• An article for publication in a journal or magazine relevant to the subject of the research.

The design component requires the presentation of a finished design or design proposal, complete with supporting design material. Both the written research and the resulting design will have equal weight in the assessment. Students may, with approval from the subject coordinator, continue to develop the research project undertaken in HDID482 where that subject has been taken previously.

**HDID473 ID Professional Practice 7**

25 Credit Points • 40 Weeks • Prahran • Prerequisite: Successful completion of semesters 5 and 6 subject requirements • Teaching methods: Students may be assigned to working groups for individual projects. Each student will be required to take on the role of team leader for some projects and be a team member for others. Team leaders will assume greater responsibility for project management and be the daily point of contact for the client. Students will be required to engage in all aspects of design management to guide individual projects through a process to a final point of delivery. Individual projects may be assigned if called for. Staff managers may assign further tasks, including lecture, seminar or tutorial attendance and/or require a paper that demonstrates a particular strategy, including advanced principles and application of design management to be submitted. • Assessment: Folio Presentations, Project(s)

A subject in the Bachelor of Design (Industrial Design).

**Aims & Objectives**

• To enhance and develop the quality of professional design undertaken in the honours year of the Bachelor of Design program, through applied projects.
• To further develop the professional design management skills of the students to prepare them for professional industry practice.
• To manifest as an internal, school-based, version of Industry-Based Learning.

**Content**

The following aspects will be covered as appropriate: client liaison; taking a brief; contact reporting; supervision and coordination of suppliers; preparation of written quotations and creative proposals; project and production management; group leadership; concept presentation to clients; CAD; specification; ergonomics and marketing.

**HDID481 Studio Practice 8**

25 Credit Points • 1 Semester • 7 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Projects will generally be conducted within student-centred studio environment on a work-in-progress basis. Group discussion, site visits, research, consultation, evaluation, critique sessions and presentations will be conducted where appropriate. • Assessment: Folio Presentations, Oral Presentation, Project(s)

A subject in the Bachelor of Design (Industrial Design).

**Aims & Objectives**

• To enhance and further develop the knowledge and professional experience gained during the previous year in industry or to enhance and develop the quality of design project work undertaken in the final year of a Bachelor of Design program.
• To explore the relationship between intellectual investigation and practice through specific design projects in advanced areas of communication design.
To manifest as an internal, school-based, version of Industry-Based Learning.

To further develop the professional design management skills of the students.

To enhance and develop the quality of professional design undertaken in the

To introduce students to an in-depth analysis of design topics using research methods and to the benefits of such analysis to the development of design.

Aims & Objectives

To develop professional design management skills.

The research project will involve the investigation of design topics using appropriate research methods. The student, in consultation with the Subject Convener, the Research Coordinator and the Year Coordinator, will select the research project. The result of this investigation will provide the basis of a written research component and a design component.

The design component requires the presentation of a finished design or design proposal, complete with supporting design material. Both the written research and the resulting design will have equal weight in the assessment.

Students may, with approval from the subject coordinator, continue to develop the research project undertaken in HDID472 where that subject has been taken previously.

Content

Students undertake a variety of creative projects at an advanced level. Where appropriate, professional, client-based projects may be undertaken. External projects and external consultation may also occur where appropriate. Students develop complete design projects, from initial research and problem analysis through conceptual development and presentation of sophisticated final design outcome.

HDID482  ID Honours Research 8

25 Credit Points • 1 Semester • 7 Hours per Week • Prahran • Prerequisite: Successful completion of all year 3 subjects and/or interview and folio presentation • Teaching methods: Research will be undertaken using a combination of empirical and bibliographic sources. Research will also involve studio workshop activity. Both will be undertaken in consultation with staff. • Assessment: Final Report Presentation, Project(s), Research Paper

A subject in the Bachelor of Design (Industrial Design).

Aims & Objectives

To introduce students to an in-depth analysis of design topics using research methods and to the benefits of such analysis to the development of design.

To develop professional design management skills.

The aim of the subject is to equip students to deal with a variety of visualisation techniques and media, including sketching, photography and model-making technologies.

Content

Visualising, illustrating and expressing an idea or concept is an essential ability of a designer. The subject introduces students to the manual techniques that are used to supplement documentation as part of a design project.

The aim of the subject is to equip students to deal with a variety of visualisation techniques and media, including sketching, photography and model-making technologies.

HDID483  ID Professional Practice 8

25 Credit Points • 40 Weeks • Prahran • Prerequisite: Nil • Teaching methods: Students may be assigned to working groups for individual projects. Each student will be required to take on the role of team leader for some projects and be a team member for others. Team leaders will assume greater responsibility for project management and be the daily point of contact for the client. Students will be required to engage in all aspects of design management to guide individual projects through a process to a final point of delivery. Individual projects may be assigned if called for. Staff managers may assign further tasks, including lecture, seminar or tutorial attendance and/or require a paper that demonstrates a particular strategy including advanced principles and application of design management to be submitted. • Assessment: Folio Presentations, Project(s)

A subject in the Bachelor of Design (Industrial Design).

Aims & Objectives

To enhance and develop the quality of professional design undertaken in the honours year of the Bachelor of Design program, through applied projects.

To further develop the professional design management skills of the students.

To manifest as an internal, school-based, version of Industry-Based Learning.

HDINTD000  IBL

37.5 Credit Points • 1 Semester • Prahran • Prerequisite: Nil • Assessment: Project Progress

A subject in the Bachelor of Design (Interior Design).

Aims & Objectives

Two programs are offered:

- To provide the opportunities for selected students to further their practical design education while working in industry; or
- To provide the opportunities for selected students to further their academic research by participating in an approved program at a national or international university.

Specifically, the program aims to develop practical design and production skills, to help clarify career paths, to develop interpersonal skills and to promote cultural, professional and business awareness.

Content

Students are placed in an appropriate industrial situation or academic environment organised by the National Institute of Design in cooperation with employers or academic staff members.

HDINTD111 Interior Design Communication 1

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Lectures, Skills Exploration, Group Tutorials • Assessment: Class Exercises, Continuous, Project(s)

A subject in the Bachelor of Design (Interior Design).

Aims & Objectives

To effectively document and complete a body of design projects.

Communication.
HDINTD121 Interior Design Communication 2

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil •
Teaching methods: Lectures, Demonstrations, Group Tutorials • Assessment: Class Exercises, Continuous, Project(s)
A subject in the Bachelor of Design (Interior Design).

Aims & Objectives
This subject aims to provide students with the knowledge and skills to use CAD for the production of 2D and 3D drawings to an advanced level.

Content
Topics include:
- Library creation and data importation.
- System variables and configuration.
- Applying efficient procedures for production of CAD drawings.
- Production of complex 2D CAD drawings to industry standards.
- Set up of a 3D environment to allow multi-view of 3D models.
- Creation of a variety of internal and external views.
- Display of solid, shaded and rendered views of 3D models.

References
Students will be expected to purchase relevant manuals/guides of the latest software and to refer to current magazines and journals such as Blueprint, Domus, El Croquis, and Monument.

HDINTD122 Construction Technology 2

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil •
Teaching methods: Tutorials, Field-based Site Visits, Studio-based Exercises • Assessment: Continuous
A subject in the Bachelor of Design (Interior Design).

Aims & Objectives
To provide students with additional detail knowledge of construction and documentation principles, standards and services commonly used in single-storey/low-rise residential-scale buildings.

Content
Tutorial-based delivery of this subject will be supplemented by various field-based site visits. Studio-based exercises would include practical drawing and sketching exercises. Material Science A will be delivered in conjunction with Building Construction A and will entail delivery by the use of instruction, visual examples, field studies and practical drawing work related to building projects.

Building Construction A
This subject will cover the role of the various statutory authorities associated with the built environment, and interpret the various terminologies used in construction. This subject aims to instil, through site investigation, an understanding of construction sequencing, and the principles, construction standards and practices of various aspects of this class of construction.

Materials Science A
Characteristics, standards, applications, maintenance, selection and identification of the numerous materials.

References
Building Code of Australia.
Timber framing codes.
State Government planning codes.
Notes on the science of building, CSIRO publications, building materials manufacturers, timber, steel and concrete development associations.

HDINTD231 Construction Technology 3

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil •
Teaching methods: Tutorials, Field-based Site Visits, Studio-based Exercises • Assessment: Continuous
A subject in the Bachelor of Design (Interior Design).

Aims & Objectives
To provide students with knowledge of construction and documentation principles, standards and services commonly used in association within design projects.

Content
Studio-based exercises which include practical model-making, technical drawing and material analysis exercises. Material Science will entail delivery by the use of instruction, visual examples, field studies and practical work related to building projects. In particular, it will consider the characteristics, standards, applications, maintenance, selection and identification of the following materials: Timber/timber products, concrete/concrete products, clay products, stone, mortars, plaster/plasterboard, metals, glass, coatings, plastics, sealants, adhesives, alternate materials and new products. These materials will be assessed in terms of their conversion/ manufacture, availability and lead time, defects, testing, handling and storage degradation, preservation and maintenance, compatibility, environmental safety, fire effectiveness.

References
Building Code of Australia.
Timber framing codes.
State Government planning codes.
Notes on the science of building, CSIRO publications, building materials manufacturers, timber, steel and concrete development associations.
modelling, shelling, materials, lighting, cameras, file conversion, file management and exchange. Knowledge gained in this subject will be applied into the relevant Design Studio area.

References
Australian Standards Association, Australian Drafting Standard AS 1100.
Gill, R., Advanced Perspective.
Lockhard, W.K., Drawing as Means to Architecture.
Metric Handbook.
Panero, J. & Zelnik, M., Human Dimension and Interior Spaces.

Students will be expected to purchase relevant manuals/guides of the latest software and to refer to current magazines and journals such as Blueprint, Domus, El Croquis, and Monument.

HDINTD233 Design Project 3
25 Credit Points • 1 Semester • 7 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: A series of practical projects enhanced by tutorials and demonstrations linked to studio-based exercises • Assessment: Project(s)
A subject in the Bachelor of Design (Interior Design).

Aims & Objectives
This program seeks to consolidate and enhance the experiences gained in the program of the previous semester. Activities within this study will provide a further range of sequential and cumulative learning experiences within the context of:
- Design and social context
- Theatre design
- Interior design
- Exhibition design

This subject is formulated to further extend students’ theoretical knowledge, design skills, practical ability to prepare concept drawings and design documentation, communication skills with external consultants and suppliers and the incorporation of the information into working drawings, project specifications and project presentation.

Content
Students are required to produce a series of specified projects that act as the research, development and representation of their response to a design brief. In their response, students are expected to demonstrate their comprehension of theoretical, functional and technical considerations. Briefs set for the subject vary from semester to semester, and cover a variety of design projects typical of those that professional interior designers are engaged on.

The requirements for this subject include attendance at six one-hour lectures to be presented over the semester. Students will be required to keep a portfolio of any papers and/or material distributed in conjunction with these lectures and submit these, with a report of approximately 250 words on each lecture at the conclusion of the subject. The subject of the lectures will be integrated with the issues underlying selected studio projects in both that, and subsequent, semesters.

HDINTD241 Construction Technology 4
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Assessment: Continuous
A subject in the Bachelor of Design (Interior Design).

Aims & Objectives
To provide students with knowledge of construction and documentation principles, standards and services commonly used in association with the exhibition industry.

Content
A variety of issues will be discussed and implemented into design project activity. Issues will include: exhibition planning, budgets, time management, installation, subcontractors, transportation, organisation, understanding the client, public liaison, legal and ethical issues, venue and exhibition preparation, labels and support material, working on-site, health and safety issues, design for disassembly, design for reuse, scheduling, consultation.

HDINTD242 Research Project
12.5 Credit Points • 1 Semester • 3 Hours per Week • Prahran • Prerequisite: Nil • Assessment: Class Exercises, Field Visits
A subject in the Bachelor of Design (Interior Design).

Aims & Objectives
- To demonstrate an understanding of how to apply and expand upon information derived from the lecture series.
- To develop independent research and project management skills.
- To demonstrate an ability to present the project outcome(s) utilising an appropriate, professional digital presentation technique(s).

Content
Students will complete one self-directed project. Three interactive sessions require mandatory attendance and interaction:
- Session 1: Inception: Establishing a project framework, timeline and documentation format.
- Session 2: Progress: Establishing a focus and preparation for presentation
- Session 3: Submission: Exhibition and critique

The requirements for this subject include attendance at six one-hour lectures to be presented over the semester. Students will be required to keep a portfolio of any papers and/or material distributed in conjunction with these lectures and submit these, with a report of approximately 250 words on each lecture at the conclusion of the subject. The subject of the lectures will be integrated with the issues underlying selected studio projects both in that, and subsequent, semesters. These lectures will contribute to locating student experiences within the historical and contemporary social and theoretical contexts for design.

HDINTD242 Self-Directed Project
12.5 Credit Points • 1 Semester • 3 Hours per Week • Prahran • Prerequisite: Nil • Assessment: Class Exercises, Field Visits
A subject in the Bachelor of Design (Interior Design).

Aims & Objectives
- To demonstrate an understanding of how to apply and expand upon information derived from the lecture series.
- To develop independent research and project management skills.
- To demonstrate an ability to present the project outcome(s) utilising an appropriate, professional digital presentation technique(s).

Content
Students will complete one self-directed project. Three interactive sessions require mandatory attendance and interaction:
- Session 1: Inception: Establishing a project framework, timeline and documentation format.
- Session 2: Progress: Establishing a focus and preparation for presentation
- Session 3: Submission: Exhibition and critique

The requirements for this subject include attendance at six one-hour lectures to be presented over the semester. Students will be required to keep a portfolio of any papers and/or material distributed in conjunction with these lectures and submit these, with a report of approximately 250 words on each lecture at the conclusion of the subject. The subject of the lectures will be integrated with the issues underlying selected studio projects both in that, and subsequent, semesters. These lectures will contribute to locating student experiences within the historical and contemporary social and theoretical contexts for design.

HDINTD351 Construction Technology 5
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Tutorials, Field-based Site Visits, Studio-based Exercises • Assessment: Continuous
A subject in the Bachelor of Design (Interior Design).
Aims & Objectives
To provide students with knowledge of construction and documentation principles, standards and services commonly used in association with Design Projects.

Content
The tutorial-based delivery of this subject will be supplemented by various field-based site visits. Studio-based exercises would include practical drawing and sketching exercises. Construction Technology 3 will entail delivery by the use of instruction, visual examples, field studies and practical drawing work related to building projects studies, and the principles, construction standards and practices of various aspects of this class of construction.

References
Building Code of Australia.
Timber framing codes.
State Government planning codes.
Notes on the science of building, CSIRO publications, building materials manufacturers, timber, steel and concrete development associations.

HDINTD352Professional Context 5
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prereq: Nil • Teaching methods: Tutorials, Lectures, Discussion Groups, Industry Visits, Project Work and Self-Directed Learning • Assessment: Continuous
A subject in the Bachelor of Design (Interior Design).

Aims & Objectives
• To enable the student to effectively communicate in a wide range of professionally related situations in a design environment.
• To enable the student to improve their interpersonal and public relation skills in a range of work-related situations.
• To outline business correspondence documentation standards.
• To research, collate, record and manage data and information in relation to industry standard client and employer records and documentation techniques.
• To empower students with an ability to develop and protect intellectual property.
• To enable students to more fully understand the role of a designer in relation to associated professions and industry sectors.
• To enable students to understand the legalities associated with the design profession.

Content
Professional issues associated with the design process will be discussed. Issues will include: Intellectual property, Patents, Royalty agreements, Design registration, Law, Design ethics, Confidentiality agreements, Return briefs/proposals, Project management, Time management and Professional contracts.

HDINTD361Design Project 6
25 Credit Points • 1 Semester • 7 Hours per Week • Prereq: Nil • Teaching methods: A series of practical projects enhanced by tutorials and demonstrations linked to studio-based exercises • Assessment: Project(s)
A subject in the Bachelor of Design (Interior Design).

Aims & Objectives
This program seeks to consolidate and enhance the experiences gained through previous Design Projects and Studios. Activities within this study will provide a further range of sequential and cumulative learning experiences within the context of:
• Interior Design
• Exhibition Design
This subject is formulated to further extend students theoretical knowledge, design skills, practical ability to prepare concept drawings and design documentation, communication skills with external consultants and suppliers and the incorporation of the information into working drawings, project specifications and project presentation.

HDINTD362Digital Technology 6
12.5 Credit Points • 1 Semester • 3 Hours per Week • Prereq: Nil • Teaching methods: Tutorials, Demonstrations • Assessment: Class Exercises, Continuous, Project(s)
A subject in the Bachelor of Design (Interior Design).

Aims & Objectives
This subject aims to expose students to a variety of software that can be used for exhibition, publication or professional presentations. The emphasis is on the acquisition of professional skills suitable for employment, and on the ability of students to develop forms of representation that identify work as their own.

Content
Students are specifically required to work on the representation of their own projects, past and present. Building upon previously developed digital skills, students will utilise multimedia software to produce professional digital outcomes relevant to Web design, Internet communication, and electronic folio documentation.

References
Students will be expected to purchase relevant manuals/guides of the latest software and to refer to current magazines and journals such as Blueprint, Domus, El Croquis, and Monument.

HDINTD363Professional Context 6
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prereq: Nil • Teaching methods: Lectures, Guest Lectures, Class Assignments, Group-related Project Work, Site Visits and Studio-based Activity • Assessment: Assignments, Case Studies, Project(s)
A subject in the Bachelor of Design (Interior Design).

Aims & Objectives
To further develop aspects of professional practice related to the interior design industry to enable students to more fully understand the role of a designer in relation to associated professions, industry sectors and meeting human needs.

Content
• Issues associated with professionalism and the design process.
• Design futures: the role of the designer within a changing social, political, economic market and technological climate.
• Consideration of issues that relate to ethics, ecology, environment and human needs in the context of sustainability.
• Identification of requirements for the development of design solutions for domestic and commercial environments.
• Report writing.

HDINTD471Studio Practice 7
25 Credit Points • 1 Semester • 7 Hours per Week • Prereq: Nil • Teaching methods: Projects will generally be conducted within student-centred studio environment on a work-in-progress basis. Group discussion, site visits, research, consultation, evaluation, critique sessions and presentations will be conducted where appropriate. Students will integrate design and technology and
engaging in entrepreneurial and research-based design projects. • Assessment: Class Presentations, Project(s)

Aims & Objectives

A subject in the Bachelor of Design (Interior Design).

Aims & Objectives

• To enhance and further develop the knowledge and professional experience gained during the previous year in industry or to enhance and develop the quality of design project work undertaken in the final year of a Bachelor of Design program.
• To explore the relationship between intellectual investigation and practice through specific design projects in advanced areas of communication design.
• To further develop aspects of design leadership through design strategy and communication.
• To effectively document and complete a body of design projects.
• To enhance skills in CAD, presentation, specification, ergonomics (and, where appropriate, marketing) to a highly professional level.

Content

Students undertake a variety of creative projects at an advanced level. Where appropriate, professional, client-based projects may be undertaken. External projects and external consultation may also occur where appropriate. Students develop complete design projects, from initial research and problem analysis through conceptual development and presentation of sophisticated final design outcome.

HDINTD472INTD Honours Research 7

25 Credit Points • 1 Semester • 7 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Research will be undertaken using a combination of empirical and bibliographic sources. Research will also involve studio workshop activity. Both will be undertaken in consultation with staff. • Assessment: Project(s), Research Paper

A subject in the Bachelor of Design (Interior Design).

Aims & Objectives

• To introduce students to an in-depth analysis of design topics using research methods and to the benefits of such analysis to the development of design.
• To develop project management skills.

Content

The research project will involve the investigation of design topics using appropriate research methods. The student, in consultation with the Subject Convener, the Research Coordinator and the Year Coordinator, will select the research project. The result of this investigation will provide the basis of a written research component and a design component.

The written research component may take the form of:

• Dissertation; or
• An article for publication in a journal or magazine relevant to the subject of the research.

The design component requires the presentation of a finished design or design proposal, complete with supporting design material. Both the written research and the resulting design will have equal weight in the assessment.

Students may continue to develop the research project undertaken in HDINTD472.

HDINTD473INTD Professional Practice 7

25 Credit Points • 40 weeks • Prahran • Prerequisite: Nil • Teaching methods: Students may be assigned to working groups for individual projects. Each student will be required to take on the role of team leader for some projects and be a team member for others. Team leaders will assume greater responsibility for project management and be the daily point of contact for the client. Students will be required to engage in all aspects of design management to guide individual projects through a process to a final point of delivery. Individual projects may be assigned if called for. Staff managers may assign further tasks, including lecture, seminar or tutorial attendance and/or require a paper that demonstrates a particular strategy, including advanced principles and application of design management to be submitted. • Assessment: Folio Presentations, Project(s)

A subject in the Bachelor of Design (Interior Design).

Aims & Objectives

• To introduce students to an in-depth analysis of design topics using research methods and the benefits of such analysis to the development of design.
• To develop project management skills.

Content

The research project will involve the investigation of design topics using appropriate research methods. The student, in consultation with the Subject Convener, the Research Coordinator and the Year Coordinator, will select the research project. The result of this investigation will provide the basis of a written research component and a design component.

The written research component may take the form of:

• Dissertation; or
To develop an understanding of basic design principles and visualisation.

**Aims & Objectives**
- To introduce the fundamental aspects of the content, function and context of Multimedia and the Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Multimedia Software Development), 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).
- 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.
- Animation and sequencing.
- Introduction of sound: basic audio principles.
- Use of appropriate design software, i.e. Adobe Photoshop, Macromedia Director.

**References**

**HDMD102 Design for Multimedia 2**
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prerequisite: HDMD101 • Teaching methods: Studio (Computer Laboratory) Tuition with Continual Practical Experience through Exercises and Set Tasks
A subject 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.
- Animation and sequencing.
- Introduction of sound: basic audio principles.
- Use of appropriate design software, i.e. Adobe Photoshop, Macromedia Director.

**References**
fundamental aspects of design, communication and concept creation through various projects. Through the development of the projects, students will be utilising software packages they’ll need for further studies.

References

Selected websites that are updated each semester.

**HDMD121 Multimedia Design Technology 2**

25 Credit Points • 1 Semester • 9 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Projects will be conducted in a studio environment, on location, student consultation/discussion, demonstrations and critiques. • Assessment: Continuous, Project(s)

A subject in the Bachelor of Design (Multimedia Design).

**Aims & Objectives**

- To develop an understanding of the principles of design in multimedia design methods and technology.
- To develop skills in relevant software.
- To introduce the fundamental aspects of the content, function and context of visual communication within an interactive environment.

**Content**

Multimedia Design Technology introduces the students to basic design principles within the context of the Web. Students will investigate fundamental aspects of design, communication and concept creation through various projects. Through the development of the projects, students will be developing skills in pertinent software needed for further studies.

**References**


Selected websites that are updated each semester.

**HDMD201 Design for Multimedia 3**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: HDMD102

A subject 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 and extend an understanding of the principles of interactive multimedia.

**Content**

- Applied multimedia scripting.
- Digital audio techniques.
- Digital video editing with appropriate software programs, i.e. Adobe Premiere, QuickTime, Movie Player, Sound Edit 16.
- Basic principles of video camera work: panning, focusing, zoom time sequence, lighting etc. Shooting of scenes, characters. Use of tripod, hand-held techniques.
- Conversion of linear system to digital system for editing.

**References**


**HDMD231 Design Project Series 3**

25 Credit Points • 1 Semester • 9 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Projects will be conducted in a studio environment, on location, through lectures, student consultation/discussion, demonstrations and critiques. • Assessment: Continuous, Project(s)

A subject in the Bachelor of Design (Multimedia Design).

**Aims & Objectives**

- To utilise imagery and words, sound and motion, to convey imaginative and innovative ideas in various media.
- To contribute to the student's development of sound idea-generation methodologies.
- To enhance knowledge of principles of design, typographic skills and innovative concepts for digital and print environments.

**Content**

This subject involves three study areas: design, video and 3D. Projects will focus on a range of design issues with outcomes in video, 3D and print. Through a series of interlinked projects students will be required to: investigate the narrative form and develop concepts into visual outcomes through format and spatial organisation, scale, structure, texture, pattern, movement, colour in a variety of two- and three-dimensional media. Concepts of pictorial arrangement in storyboarding, movement, spatial relationships, image composition, selection and editing will be explored in projects. Students will be expected to keep workbooks with concept and research notes and visualisations.

Within the video component, there will be an introduction to the basics of video and audio techniques. Establishes the level of understanding of basic principles of video camera work-panning, focusing, lighting, shooting of scenes, characters using tripod and hand-held techniques. Compares analog and digital input and output, image capture, editing, manipulation, compression considerations for CD/DVD and WWW delivery. Establishes the level of understanding of audio requirements for digital multimedia outcomes, investigation into human audio capabilities. Digital audio capture, manipulation and outcome considerations as applied to voice, music and ambient requirements.

The requirements for this subject include attendance at a weekly one-hour lecture (separate to the introduction lectures) to be presented over the semester. Students will be required to complete a written film proposal at the end of the semester. Time allotment to attend the lecture is included in the contact hours for this subject.

**References**


Selected websites that are updated each semester.

**HDMD232 Multimedia Design Technology 3**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Projects will be conducted in a studio environment, on location, through lectures, student consultation/discussion, demonstrations and critiques. • Assessment: Continuous, Project(s)

A subject in the Bachelor of Design (Multimedia Design).

**Aims & Objectives**

- To enhance and develop knowledge and skills in technology and interactive programming.
- To use these skills to translate design concepts for production for interactive computer and the World Wide Web.
- To investigate the utilisation of various modes of technology for communication design, media studies and research methods.

**Content**

Students integrate video and 3D skills within the realms of Flash MX. Technical projects in this unit will directly relate to the Design Project series and include an online component.

**References**

Curran, S., Motion Graphics: Graphic Design for Broadcast and Film, Rockport,

Subject:
Time allotment to attend the lectures is included in the contact hours for this subject. The requirements for this subject include attendance at weekly one-hour lectures to introduce the fundamental aspects of the content, function and context of design for interactive communications and the World Wide Web. Through a series of technical projects, which explore the use of relevant software and HTML, students will investigate aspects of typographic design for screen. The projects will enable students to investigate production for screen and print. The projects will enable students to investigate production for print media.

Content:
This elective has two study areas, vector and Web. Students complete design projects, which explore the use of relevant software and HTML. Technical projects for interactive communications and the World Wide Web. Through a series of technical projects, which explore the use of relevant software and HTML, students will investigate aspects of typographic design for screen. The projects will enable students to investigate production for screen and print. The projects will enable students to investigate production for print media.

Content:
This subject consists of a series of tutorials and projects through which the student will investigate those aspects of typographic design for screen and print. The projects will enable students to investigate production for print media.

Aims & Objectives:
The aim of this elective is for multimedia design students to develop an understanding and expertise in typography: type terminology, information hierarchy, typographic detail, type as a design element, identification of media needs and outcomes in print media. This elective also enables multimedia design students to further investigate print technologies and methodologies such as film, impositions, separations, colour systems, trapping and choking.


Bellantoni, J., Type in Motion.

References:
Bellantoni, J., Type in Motion.
Nielsen, J., Designing Web Usability.

Selected websites that are updated each semester.

HDM241 Design Project Series 4

25 Credit Points • 1 Semester • 9 Hours per Week • Prerequisite: Nil • Teaching methods: Projects will be conducted in a studio environment, on location, through lectures, student consultation/discussion, demonstrations and critiques. • Assessment: Continuous, Project(s)
A subject in the Bachelor of Design (Multimedia Design).

Aims & Objectives:
• To develop an understanding of the practice of design in multimedia design methods and technology.
• To introduce the fundamental aspects of the context, function and context of visual communication.
• Continued practise in the principles of design and further development of typographic use.

Content:
This subject involves three study areas: design, multimedia for the Web and interactive media. Projects will focus on a range of design issues with outcomes for interactive communications and the World Wide Web. Through a series of interlinked projects, students will be required to investigate innovative and exploratory ways of communicating concepts via design within the context of the digital environment. Design projects will have screen-based and print outcomes. Continued development of research methodologies through the use of workbooks.

The requirements for this subject include attendance at weekly one-hour lectures (separate to the introduction lectures) to be presented over the semester. The subject of the lectures will be integrated with the issues underlying selected studio projects in both that, and subsequent, semesters. These lectures will contribute to locating student experiences within the historical and contemporary, social and theoretical contexts for design.

Time allottment to attend the lectures is included in the contact hours for this subject.

HDM242 Multimedia Design Technology 4

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prerequisite: Nil • Teaching methods: Projects will be conducted in a studio environment, on location, through lectures, student consultation/discussion, demonstrations and critiques. • Assessment: Continuous, Project(s)
A subject in the Bachelor of Design (Multimedia Design).

Aims & Objectives:
• To further develop knowledge and skills in technology for Web-based work.
• Introduction to vector and bitmap animation delivery for the Web. To enhance technical skills to realise design outcomes.

Content:
This subject has two study areas, vector and Web. Students complete design projects, which explore the use of relevant software and HTML. Technical projects in this unit will directly relate to the Design Project series and include an online component.

References:
Nielsen, J., Designing Web Usability.
Webster, S., Foundation PHP for Flash.

Selected websites that are updated each semester.

HDM243 Typographic Design for Screen

12.5 Credit Points • 1 Semester • 3 Hours per Week • Prerequisite: Nil • Teaching methods: Projects will be conducted in a studio environment, on location, through lectures, student consultation/discussion, demonstrations and critiques. • Assessment: Project Progress
A subject in the Bachelor of Design (Multimedia Design) and the Bachelor of Film and Television

Aims & Objectives:
The aim of this elective is for multimedia design students to develop a greater understanding of typography and its various functions within design: type terminology, information hierarchy, typographic detail, type as a design element, identification of media needs and resolution outcomes in screen design. This elective also serves to introduce multimedia design students to the limitations of type within electronic screen environments such as television, video games, personal computing devices and cinema scenarios.

Content:
This subject consists of a series of tutorials and projects through which the student will investigate aspects of typographic design for screen. The projects will enable students to investigate production for screen applications.

References:
Curran, S., Motion Graphics: Graphic Design for Broadcast and Film, Rockport, 2000.
Bellantoni, J., Type in Motion.

References:
Bellantoni, J., Type in Motion.
Nielsen, J., Designing Web Usability.

Selected websites that are updated each semester.
HMDMD351 Design Project Research Series 5

25 Credit Points  •  1 Semester  •  9 Hours per Week  •  Prahran  •  Prerequisite: Nil  •  
Teaching methods: Projects will be conducted in a studio environment, on location, 
trough lectures, student consultation/discussion, demonstrations and critiques.  •  
Assessment: Continuous  
A subject in the Bachelor of Design (Multimedia Design).  

Aims & Objectives
- To provide the opportunity for a comprehensive investigation into the 
fundamentals of applied design and visual communication through project work. 
- To utilise imagery and words, motion and sound to convey imaginative and 
innovative concepts in various media. 
- To extend students concept and skills base and research methodologies. 

Content
This subject consists of project work, through individual research methodologies, 
that covers various media outcomes. Students undertake projects spanning multimedia, visual communication design. Projects provide opportunity for investigation of design principles, methodologies and technologies relevant to their area of studies. 

References
Bellantoni, J., Type in Motion. 
Curran, S., Motion Graphics: Graphic Design for Broadcast and Film, 2000. 
Hall, P., Pause: 59 Minutes of Motion Graphics. 
Flips 5, by IDN. 

HMDMD352 Individual Research Project 5

12.5 Credit Points  •  1 Semester  •  4 Hours per Week  •  Prahran  •  Prerequisite: Nil  •  
Teaching methods: Projects will be conducted in a studio environment, on location, 
student consultation/discussion, demonstrations and critiques.  •  Assessment: Continuous, Project(s)  
A subject in the Bachelor of Design (Multimedia Design).  

Aims & Objectives
- To provide the opportunity for increased investigation into, and development of, 
time-based media from an exploration of content and form, within interactive digital media and/or video production. 
- To encourage creative expressive development of design, narrative form and 
sequenced image-making for multimedia. 
- Enables students to explore an area that they want to specialise in. 

Content
This subject consists of an individual project through which the student will 
investigate aspects of design, structure and sequence for multimedia. Innovative problem-solving to individual briefs will culminate in an online project. Projects and workbooks will describe design strategies and research undertaken throughout the process. Presentations will demonstrate an understanding of the structural, 
sequential and spatial organisation that describes aspects of visual communication. Investigations will begin into audio, video, animation, motion graphics and 3D modelling requirements for digital delivery. 

References
Reading lists will vary depending on students individual studies. Below is some suggested reading: 
Heffland, J., Screen Essays on Graphic Design/New Media and Visual Culture, 
Meyer C. & T., Creating Motion Graphics with After Effects. 
Adobe Classroom in a Book, Adobe Press. 
Real-time Interactive 3D Games: Creating 3D Games in Macromedia Director 8.5 Shockwave Studio, Sams 2001. 
Bellantoni, J., Type in Motion. 
Curran, S., Motion Graphics: Graphic Design for Broadcast and Film, 2000. 
Hall, P., Pause: 59 Minutes of Motion Graphics. 

HMDMD353 Contextual Studies 5

12.5 Credit Points  •  1 Semester  •  3 Hours per Week  •  Prahran  •  Prerequisite: Nil  •  
Teaching methods: Research, Lectures, Student Consultation/Discussion, 
Demonstrations and Critiques  •  Assessment: Continuous, Project(s)  
A subject in the Bachelor of Design (Multimedia Design) and the Bachelor of Film and Television  

Aims & Objectives
To further develop an appreciation of multimedia theory. 
To investigate the multimedia environment: 
- eCommerce/business studies 
- Media studies 
- Multimedia design context studies 
- Interface/usability studies 

Content
Students investigate an area of their choice within the multimedia framework. 

References
Dey, M., Frame Wars: The Discourse of Cyberculture. 
Heffland, J., Screen Essays on Graphic Design/New Media and Visual Culture, 
Tofts, D. & McKieith, M., Memory Trade: A Prehistoriy of Cyberculture, Sydney, 21C/ 
Laurel, B., The Art of Human Computer Interface Design, Addison-Wesley 

HMDMD361 Design Project Research Series 6

25 Credit Points  •  1 Semester  •  9 Hours per Week  •  Prahran  •  Prerequisite: Nil  •  
Teaching methods: Projects will be conducted in a studio environment, on location, 
through lectures, student consultation/discussion, demonstrations and critiques.  •  Assessment: Continuous  
A subject in the Bachelor of Design (Multimedia Design).  

Aims & Objectives
- To provide the opportunity for a comprehensive investigation into the 
fundamentals of applied design and visual communication through project work. 
- To utilise imagery and words, motion and sound to convey imaginative and 
innovative concepts in various media. 
- To extend students concept and skills base and research methodologies.
Content

This subject consists of project work, through individual research methodologies, that covers various media outcomes. Students undertake projects spanning multimedia, visual communication design. Projects provide opportunity for investigation of design principles, methodologies and technologies relevant to their area of studies.

References


12.5 Credit Points • 1 Semester • 3 Hours per Week • Prathran • Prerequisite: Nil •
Teaching methods: Projects will be conducted in a studio environment, student consultation/discussion, demonstrations and critiques. • Assessment: Continuous, Projects

Aims & Objectives

To provide further opportunity for increased investigation into, and development of, time-based media from an exploration of content and form, within interactive digital media and/or video production.

To contribute to the student’s development of sound idea-generation methodologies and documentation.

To train students in professional design practice.

Content

Advanced investigation and research into time-based media. Constant definition and exploration of human computer interaction and exploration of interactive techniques as applied to time-based visual communication. Creative, innovative and expressive development of video/sound/interactive forms will culminate in an online project.

References

Tofts, D. & McKechnie, M., Memory Trade: A Prehistory of Cyberculture, Sydney, 21C/Interface, 1996.

HMD362 Individual Research Project 6

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prathran • Prerequisite: Nil •
Teaching methods: Projects will be conducted in a studio environment, student consultation/discussion, demonstrations and critiques. • Assessment: Continuous, Projects

Aims & Objectives

To provide further opportunity for increased investigation into, and development of, time-based media from an exploration of content and form, within interactive digital media and/or video production.

To contribute to the student’s development of sound idea-generation methodologies and documentation.

To train students in professional design practice.

Content

Advanced investigation and research into time-based media. Constant definition and exploration of human computer interaction and exploration of interactive techniques as applied to time-based visual communication. Creative, innovative and expressive development of video/sound/interactive forms will culminate in an online project.

References

Tofts, D. & McKechnie, M., Memory Trade: A Prehistory of Cyberculture, Sydney, 21C/Interface, 1996.

HMD471 Multimedia Design Technology 7

12.5 Credit Points • 1 Semester • 3 Hours per Week • Prathran • Prerequisite: Nil •
Teaching methods: Projects will be conducted in a studio environment, on location, through lectures, student consultation/discussion, demonstrations and critiques. • Assessment: Continuous

Aims & Objectives

To further develop an appreciation of multimedia theory and to investigate the multimedia environment:

- eCommerce/business studies
- Media studies
- Multimedia design context studies

Content

Students investigate an area of their choice within the multimedia framework.

References

Tofts, D. & McKechnie, M., Memory Trade: A Prehistory of Cyberculture, Sydney, 21C/Interface, 1996.
HDMD472 Individual MD Project 7
12.5 Credit Points  
• 1 Semester  
• 3 Hours per Week  
• Prahran  
• Prerequisite: Nil  
• Teaching methods: Projects will be conducted in a studio environment, on location, through lectures, student consultation/discussion, demonstrations and critiques.  
• Assessment: Class Presentations, Continuous  
A subject in the Bachelor of Design (Multimedia Design).  

Aims & Objectives
• To develop an understanding of the practice of design and narrative structure in multimedia design methods and technology.  
• To introduce the fundamental aspects of the content, function and context of visual communication within a multimedia project.  

Content
This subject consists of an individual minor project through which the student will investigate aspects of design and sequence for multimedia. The project will develop the special principles of design that help the design process in various media. Projects and workbooks will describe the design strategies that inform the practice of multimedia design. Presentations will demonstrate an understanding of the structural, sequencing and spatial organisation that describe aspects of visual communication. Investigations will begin into audio, video, animation, filmic imagery and 3D modelling requirements for digital delivery.  

References  

HDMD473 Group Multimedia Project 7
25 Credit Points  
• 1 Semester  
• 6 Hours per Week  
• Prahran  
• Prerequisite: Nil  
• Teaching methods: Projects will be conducted in a studio environment, on location, through lectures, student consultation/discussion, demonstrations and critiques.  
• Assessment: Continuous, Thesis  
A subject in the Bachelor of Design (Multimedia Design).  

Aims & Objectives
• To further develop an understanding of the practice of design and narrative structure in multimedia design methods and technology.  
• To encourage creative and expressive development of design, narrative form and sequenced image-making for multimedia.  

Content
This subject consists of a major group project through which students will investigate aspects of design and sequence for multimedia outcomes. This will be a group-determined project. The project will develop the special principles of design that help the design process in various media. Projects and workbooks will describe the design strategies that inform the practice of multimedia design. Presentations will provide an understanding of the structural, sequencing and spatial organisation that describes aspects of visual communication. Investigations will continue into audio, video, animation, filmic imagery and 3D modelling requirements for digital delivery. As part of this subject students will submit a minor thesis that will explore issues relating to their major project. Issues such as contextuality, technology delivery and content development and reasoning will be raised and discussed.  

References  

HDMD481 Multimedia Design Technology 8
12.5 Credit Points  
• 1 Semester  
• 3 Hours per Week  
• Prahran  
• Prerequisite: Nil  
• Teaching methods: Projects will be conducted in a studio environment, on location, through lectures, student consultation/discussion, demonstrations and critiques.  
• Assessment: Continuous  
A subject in the Bachelor of Design (Multimedia Design).  

Aims & Objectives
• To further equip students with advanced technical skills in DVD production and authoring/scripting.  
• To further develop an understanding of the practice of design in multimedia design methods and technology.  
• To develop the fundamental aspects of the content, function and context of visual communication as applied to multimedia.  
• Advanced program use in all aspects of design.  

Content
Students will investigate DVD production, compression, scripting. Further exploration of interactive mediums and the World Wide Web as a communication medium. Advanced application of vector and bitmap animation delivery within these mediums. Further development of industry standard authoring software packages and Lingo and HTML scripting for interactive production over the World Wide Web and other specific mediums.  

References  

HDMD482 Individual MD Project 8
12.5 Credit Points  
• 1 Semester  
• 3 Hours per Week  
• Prahran  
• Prerequisite: Nil  
• Teaching methods: Projects will be conducted in a studio environment, on location, through lectures, student consultation/discussion, demonstrations and critiques.  
• Assessment: Continuous, Project(s)  
A subject in the Bachelor of Design (Multimedia Design).  

Aims & Objectives
• To further develop an understanding of the practice of design and narrative structure in multimedia design methods and technology.  
• To encourage creative and expressive development of design, narrative form and sequenced image-making for multimedia.  

Content
This subject consists of an individual minor project through which the student will undertake advanced investigation of aspects of design and sequence for multimedia. The project will develop the special principles of design that help the design process in various media. Projects and workbooks will describe the design strategies that inform the practice of multimedia design. Presentations will provide an understanding of the structural, sequencing and spatial organisation that describes aspects of visual communication. Further investigations will be made into audio, video, animation, filmic imagery and 3D modelling requirements for digital delivery. Creative, innovative and expressive development of video image/sound/interactive forms will be encouraged.  

References  

HDMD483 Group Multimedia Project 8
25 Credit Points  
• 1 Semester  
• 6 Hours per Week  
• Prahran  
• Prerequisite: Nil  
• Teaching methods: Projects will be conducted in a studio environment, on location,
through lectures, student consultation/discussion, demonstrations and critiques. •
Assessment: Continuous, Folio Presentations, Thesis
A subject in the Bachelor of Design (Multimedia Design).

Aims & Objectives
• To further develop an understanding of the practice of design and narrative structure in multimedia design methods and technology.
• To encourage creative and expressive development of design, narrative form and sequenced image-making for multimedia.

Content
This subject consists of a major group project through which students will investigate aspects of design and sequence for multimedia outcomes. This will be a group-determined project. The project will develop the special principles of design that help the design process in various media. Projects and workbooks will describe the design strategies that inform the practice of multimedia design. Presentations will provide an understanding of the structural, sequencing and spatial organisation that describes aspects of visual communication. Investigations will continue into audio, video, animation, filmic imagery and 3D modelling requirements for digital delivery.

References

HDPD211 Product Design 3
25 Credit Points • 1 Semester • 118 Hours • Hawthorn; Prahran • Prerequisite: HDO003, HDO004, HDO005 • Teaching methods: Project-based learning and self-directed. Individual and small-group problem-solving research projects and lectures - 60 hours; Engineering tutorials to support project deliverables - 12 hours; Tutorials: CAD tutorials - 24 hours; Illustration tutorials - 12 hours; Industrial visit, as required; Web-based subject presence (Blackboard). Research materials and supporting project materials will be provided online • Assessment: Assignments, Project(s), Critiques, Peer Discussions, Presentations
A subject in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
Product Design 3 will continue to build upon innovative idea generation and visualisation skills with the practical implementation of engineering studies of Electronic Systems and Mechanics of Structures into design projects. Students will develop an understanding of product design history and also the product design methodology using 3DCAD.
At the end of this course students will be able to:
• Apply practical application of engineering methodology to determine effective and efficient design
• Introduce, develop and explore design methodology in relation to product design
• Evolve the 3D CAD modelling and product design skills
• Enhance manual and digital illustration techniques and further develop visual communication skills
• Apply product semantics and ergonomics
• Define and Design for ‘need’
• Understand the social, ecological and political implications of a product design engineer and responsibilities of the designer
• Understand the historical perspective of product design and industrialisation

Content
Product Design (70%)
• Group and individual project-based learning utilising the engineering sciences of Electronics and Mechanics of structures.

• Concept development and design methodology, innovative idea-generation techniques, illustration, engineering documentation and use of exploded views
• Basic principles of product design specifications and engineering documentation
• Research electronic components and engineering data
• Analysis of product reliability, performance and complexity
• Application of ergonomic principles and analysis of product semantics
• Investigation of the design professional and history of design
• Application of product illustration and digital rendering techniques

3D Computer Aided Design (30%)
• Introduce 3D computer aided design techniques
• Creating solid models, cutting and sectioning solids, extrusion, joining solids, fillets
• Creation of detail drawings, assemblies, exploded views
• File management, printing and data transfer
• Use of lighting, cameras, animation
• Surfaces, backgrounds, filter effects, digital rendering

References
Students will be referred to reference texts depending on specific project content.

HDPD221 Product Design 4
12.5 Credit Points • 1 Semester • 60 Hours • Prahran • Prerequisite: HDPD211 • Teaching methods: Project-based learning and self-directed. Individual and small-group problem-solving research projects - 48 hours; Engineering tutorials to support project deliverables - 12 hours; Industrial visit as required; Web-based subject presence (Blackboard). Research materials and supporting project materials will be provided online • Assessment: Assignments, Project(s), Peer discussions, Critiques, Presentations
A subject in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
Product Design 4 will evolve product design skills and incorporate the engineering subjects of Materials and Processes and Structural Mechanics. Students will further explore skills in 3D CAD and engineering documentation. Students will explore product semantics and ergonomics. At the end of this course students will be able to:
• Perform practical application of engineering methodology to analyse strength of materials and manufacturing processes.
• Understand the principles and application of basic metal casting and machining principles.
• Enhance product development and visual communication skills
• Apply appropriate prototyping techniques

Content
Product Design (100%)
• Group and individual project based learning utilising engineering sciences of Materials and Processes and Structural Mechanics.
• Product design development and detailing using 3D CAD.
• Creative development and mindmapping techniques.
• Analysis of metal casting, mechanic and fabrication techniques.
• Application of basic plastic moulding techniques.
• Prototyping and product testing techniques.
• Engineering documentation and drawing communication.
• Visualisation and presentation techniques.
• Product investigation and performance analysis.
• Application of ergonomic principles.
• Investigation of contemporary design and the product design engineering profession.

References

Students will be referred to reference texts depending on specific project content.

HDPD311 Product Design 5
12.5 Credit Points • 1 Semester • 48 hours • Hawthorn/Prahran • Prerequisite: HDPD221 • Teaching methods: Project-based learning and self-directed. Individual and small-group problem-solving research projects - 48 hours; Engineering tutorials to support project deliverables - 12 hours; Industrial visit, as required; Web-based subject presence (Blackboard). Research materials and supporting project materials will be provided online • Assessment: Assignments, Project(s), Critiques, Peer Discussions, Presentations
A subject in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
Product Design 5 will continue to build upon innovative idea generation, problem solving and visualisation skills with the practical implementation of engineering studies such as Manufacturing Technology 1 and Engineering Materials. This subject will use initiated industry projects to develop professional visualisations and presentation skills. The subject aims:
• To develop an ability to select appropriate materials and manufacturing processes for product design.
• To develop engineering specifications and documentation for use in product design.
• To develop skills in conceptualisation and product development.

At the end of this course students are expected to:
• Incorporate engineering sciences of Manufacturing Technology and Engineering Materials in project-based problem-solving.
• Present a practical Application of engineering methodology to determine effective / efficient design.
• Develop strategies to determine the appropriate material selection and manufacturing processing for low and high volume quantities.
• Evolve the 3D CAD modelling skills and develop methods of engineering drawing and documentation to a professional level.
• Develop a design awareness of Products and Actions: the social, ecological and political implications and responsibilities of the designer.
• Develop group and individual project management skills.

Content
Product Design (100%)
• Group and individual problem solving projects incorporating engineering subjects of Manufacturing Technology and Engineering Materials.
• 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 sheetmetal forming and fabrication techniques.

References

Students will be referred to reference texts depending on specific project content.

HDPD321 Product Design 6
25 Credit Points • 1 Semester • 108 hours • Hawthorn/Prahran • Prerequisite: HDPD311 • Teaching methods: Project-based learning and self-directed. Individual and small-group problem-solving research projects - 94 hours; Engineering tutorials to support project deliverables - 12 hours; Tutorials: FEA CAD tutorials - 12 hours; Industrial visit as required; Web-based subject presence (Blackboard). Research materials and supporting project materials will be provided online • Assessment: Assignments, Project(s), Critiques, Peer Discussions, Presentations
A subject in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
Product Design 6 will use industry initiated design projects to incorporate the engineering sciences of Thermofluid Systems and Machine Design. Introduction to CAD-based finite element analysis and prototyping systems. The subject will develop engineering communication and project management skills required for the entrepreneurial development of products.

At the end of this course students are expected:
• To incorporate engineering sciences of Thermodynamics, Fluid Mechanics and Machine Design in project-based problem-solving.
• To apply business and project management skills to produce a low volume product for retail distribution.
• To develop an understanding of Australian and International standards.
• To develop the ability to apply material and manufacturing process selection to product design.
• To apply finite element analysis principles to plastic and metal components.

Content
Product Design (87.5%)
• Incorporate the engineering sciences of Thermofluid systems and Machine Design in a product design project.
• Contemporary product design philosophies.
• Analysis of the product design professions and ethical issues.
• Engineering specifications, 3D CAD data, Engineering drawings, assembly drawings, ergonomic analysis.
• Manage and participate in a group design activity.
• 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, 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.
• FEA CAD (12.5%)
  • 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.

References

Students will be referred to reference texts depending on specific project content.

HDPDS500 Multimedia
12.5 Credit Points • 1 Semester • 36 hours • Prahran • Prerequisite: Nil • Teaching methods: Lab-based tutorials - 36 hours; Web-based subject presence (Blackboard). Research materials and supporting project materials will be provided online • Assessment: Project(s), Critiques, Presentations, Assessment Panels
Bachelor of Engineering (Product Design Engineering)
Aims & Objectives
The aim of Multimedia is to enhance the digital and multimedia skills with the exploration of multimedia software. This subject will enable students to prepare an individualised, professionally focused folio document for the graduate entering the professional environment.

At the end of this subject students are expected to be able to:
- use a variety of multimedia software applications
- develop an understanding of the practice of design in multimedia design methods and technology
- develop an understanding of the animation process and relevant software
- introduce the fundamental aspects of the content, function and context of visual communication as applied to time-based media

Content
Multimedia (100%) Multimedia Design Technology introduces the students to basic design principles within the context of the digital environment. Students will investigate fundamental aspects of design, communication and concept creation through various projects. Through the development of the projects, students will be utilising software packages required to create professional presentations including Flash, Photoshop, Illustrator and Director.

References
Muybridge, E., The Human Figure In Motion and Animals in Motion, Dover Press.
Siegel, B., Creating Killer Web Sites, Hayden Books, 1996/7

Selected websites that are updated each semester.

HDPD511 Product Design 7

12.5 Credit Points  • 1 Semester  • 60 Hours  • Hawthorn; Prahran  • Prerequisite: HDPD521 Product Design 6  • Teaching methods: Project-based learning and self-directed: Individual and small-group problem-solving research projects - 48 hours; Engineering tutorials to support project deliverables - 12 hours; Industrial visit as required; Web-based subject presence (Blackboard). Research materials and supporting project materials will be provided online  • Assessment: Assignments, Project(s), Critiques, Peer discussions, Presentations
A subject in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
Product Design 7 will incorporate product design and engineering skills to a professional level using industry initiated design projects to develop professional presentation techniques, product detailing and project management skills. Product Design 7 will utilise the engineering subjects of Design for Manufacture and Manufacturing Technology 2. This subject aims to:
- apply 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.

At the end of this course students are expected to:
- Apply the engineering sciences of Design for Manufacture and Manufacturing Technology 2 in project-based problem-solving.
- Practically apply engineering methodology to determine effective / efficient design.
- Evolve design communication and presentation skills to a professional level
- Develop product design awareness of appropriate material and manufacturing processes selection.
- Evolve the 3D CAD modelling skills and further develop engineering drawing documentation to a professional level.
- Develop an awareness of the social, ecological and political implications and responsibilities of the product design engineer.

Content
Product Design (100%)
The research will culminate in a Research report, correctly referenced and outlining all the relevant areas of the new product development process. It may take various forms involving manufacturing 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.

References

Further references as recommended by the supervisor to support the students project.

HDPD521 Product Design 8
12.5 Credit Points • 1 Semester • 48 hours • Hawthorn; Prahran • Prerequisite: HDPD511 • Teaching methods: Project-based learning and self-directed: Individual and small-group problem-solving research projects - 48 hours; Engineering tutorials to support project deliverables - 12 hours; Industrial visit; Web-based subject presence (Blackboard). Research materials and supporting project materials will be provided online • Assessment: Critiques, Peer Discussions, Presentations
A subject in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
Product Design 8 will use industry initiated design project to incorporate the engineering sciences of Industrial Systems.

Students aim to develop digital presentation project management skills to a professional level and apply an engineering design methodology with the selection of appropriate materials and processes to produce viable product designs.

At the end of this course students are expected to:
- Apply the engineering sciences of sensor technology and control devices in project-based problem-solving.
- Implement and build upon engineering sciences of manufacturing systems and sensor technology
- Enhance the 3D modeling and presentation skills
- Evolve plastic product design and detailing skills
- Implement finite element analysis to industrial applications
- Evolve design communication and presentation skills to a professional level
- Develop engineering drawing documentation to a professional level

Content
Product Design (100%)
- Group and individual project based learning utilising the engineering sciences of Industrial Systems.
- Application of sensor technology and control devices to product design.
- Application of quality management systems to product designs.
- Concept development and design methodology, innovative idea generation techniques, illustration, engineering documentation and exploded views.
- Research electronic components and engineering data.
- Analysis of product reliability, performance and complexity.
- Application of ergonomic principles and analysis of product semantics.
- Design, management and construction of exhibition design.
- Application of rapid prototyping systems.
- Application of product illustration and digital rendering techniques to a professional level.

References

Students will be referred to reference texts depending on specific project content.

HDPD522 Professional Project
12.5 Credit Points • 1 Semester • 48 hours • Hawthorn; Prahran • Prerequisite: HDPD511 • Teaching methods: Regular progress reports and debriefing with design and engineering staff. Tutorial and consultation sessions as required. Tutorials - 48 hours; Site and industrial visits; Web-based subject presence (Blackboard). Research materials and supporting projects are undertaken under the close supervision of a staff member who meets regularly with the students to discuss and assure progress materials will be provided online. • Assessment: Assignments, Final Report Presentation, Project(s), Project Progress, Prototype, Critiques, Peer Discussion
A subject in the Bachelor of Engineering (Product Design)

Aims & Objectives
The Professional Project aims to develop student’s research, design and engineering skills to a professional level while maintaining their project development with industry. Students will consult with industry and research organisations 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. 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.

At the end of this course students are expected to:
- Apply skills in planning and executing an innovative project.
- Apply skills in the research of the literature and prior art.
- Apply 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 presenting a professional seminar.

Content
Using project research undertaken in HDPD511 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.

Research Project (100%)
- Research skills
- Project management and critical path analysis
- Advanced materials and manufacturing technologies
- Concept selection techniques
- Design for the environment
- Design for assembly and disassembly
- Failure mode effects analysis
- Implementation of CAD based FEA analysis
- Costing analysis techniques

References
Wood, I., Design Method in Engineering and Product Design

Further references as recommended by the supervisor to support the students project.
HEF1000  Professional Engineering

12.5 Credit Points  •  1 Semester  •  60 Hours per Week  •  Hawthorn  •  Prerequisite: Nil
• Teaching methods: Briefing Sessions - Lectures (12 Hours); Design Sessions - Tutorials (48 Hours); Consultations with Experts and Technical Personnel (up to 5 hrs per group of 4 students); Flexible Delivery. Subject will be supported online • Assessment: Students communicate once a week with the subject coordinator via e-mail. Students keep a Design file; each group coordinates and develops an integrated part of a Scaled Model representing the design; at the end of the project, students submit a Self Assessment report and complete a set of design documentation (one per group) and present the project.

A subject in the Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Civil), Bachelor of Engineering (Civil)/Bachelor of Business, Bachelor of Engineering (Electronics & 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, social and environmental 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.
- To present students with the opportunity to interview practicing engineers in a particular engineering discipline.
- To provide students with the opportunity to experience peer reviewed oral presentations.

At the end of this subject students will be able to:

- Link and to use their existing knowledge for engineering purposes
- Demonstrate understanding of current challenges facing particular engineering discipline
- Demonstrate understanding of history of a particular engineering discipline
- Demonstrate understanding of emerging trends in a particular engineering discipline
- Demonstrate understanding of engineering education environment and emerging trends in engineering education
- Demonstrate awareness of skills necessary to perform engineering tasks
- Demonstrate understanding of skills required from engineering students and engineering graduates
- Demonstrate development of investigation skills
- Demonstrate understanding of engineering approach in problem solving
- Demonstrate understanding of engineering systems and systemic approach in engineering
- Demonstrate understanding of design process
- Demonstrate capability to generate alternative engineering solutions to solve simple engineering problem
- Demonstrate capability to analyse critically various alternative engineering solutions
- 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 ability to interview practicing engineer in a particular engineering discipline
- 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
- 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

Textbook


Recommended reading

Mackay, H., Why Don’t People Listen, Australia, Pan, 1994.

HES1105  Civil Engineering Project

12.5 Credit Points  •  1 Semester  •  60 Hours  •  Hawthorn  •  Prerequisite: Nil
• Teaching methods: Lectures (12 Hours); Tutorials (24 Hours); Computer Aided Design (CAD) Laboratories (36 Hours); Flexible Delivery: Subject will be supported online. • Assessment: Assignments, Examinations, Research Paper, Tutorials

A subject in the Bachelor of Engineering (Civil), Bachelor of Engineering (Civil)/Bachelor of Business.

Teaching methods: Lectures (12 Hours); Tutorials (24 Hours); Computer Aided Design (CAD) Laboratories (36 Hours); Flexible Delivery. Subject will be supported online. • Assessment: Assignments, Examinations, Research Paper, Tutorials

Aims & Objectives

This course aims:

- To provide students with the opportunity to further develop (introduced and developed in HEF1000 Professional Engineering - Graphical Communication module) students' ability to graphically communicate ideas and designs using sketches and drawings in accordance to engineering standards and conventions
- To provide students with the opportunity to further improve skills [introduced and developed in HEF1000 Professional Engineering - Professional Development module] in the following areas:
  - Teamwork and time management
  - Problem-solving
  - Professional presentation
  - Engineering report writing
  - To provide students with the opportunity to learn basics of civil engineering in a cooperative and collaborative environment
- To provide students with a unique opportunity to perform real-life engineering tasks such as:
  - Surveying for engineering purposes
  - Analysis of design documentation
  - Basic load and capacity calculations
  - Preparation of engineering specifications
  - Preparation of design documentation
  - Preparation of a design model
• To provide students with a unique opportunity to interact with experts in different sub-disciplines of civil engineering

At the completion of this subject, 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 ability to communicate design outcomes effectively using sketches and CAD drawings
• Demonstrate ability to communicate design outcomes in a form of a formal presentation and engineering report
• Demonstrate the development of practical skills necessary to build a design model
• Undertake basic land surveying (determining bearings and reduced levels) using manual surveying equipment
• Demonstrate the link and to use knowledge gained in other, concurrently run subjects such as Mechanics of Structures, Engineering Materials and Processes and Mathematics

Content
• Basic elements of civil engineering systems including roads, bridges, water engineering and structural systems
• Basic functions of civil engineering systems
• Fundamentals of civil engineering construction methods
• Fundamentals of land surveying
• Fundamentals of project management
• Design principles and process (from a Design Brief to Design Communication)
• Basic loading and capacity calculation
• Scaled model development

References
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.

HES1125 Mechanics of Structures
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures (24 Hours), Tutorials (22 Hours), Laboratory (2 Hours), Class Tests (8 Hours) • Assessment: Examinations (80%), Lab Reports (5%), Practical Examination (15%)

A subject in the Bachelor of Engineering (Biomedical Science), Bachelor of Engineering (Biomedical Science), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Civil), Bachelor of Engineering (Civil)/Bachelor of Business, Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical)/Bachelor of Business, Bachelor of Engineering (Product Design), Bachelor of Engineering (Robotics and Mechatronics), and Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering).

Aims & Objectives
During this subject, 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 subject, 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
Forces and Equilibrium (15%)

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 to 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.

Textbook
Hibbeler, R.C., Statics and Mechanics of Materials, Prentice Hall.

HES1230 Materials and Processes
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures (36 hours), Tutorials (16 hours), Laboratory (8 hours), Assignment (approx 2 hrs), Web-based subject presence. Subject will be supported online, approx 2 hrs. • Assessment: Examination 70%, Oral Presentation 10%, Laboratory reports 10%, Online Quiz 10%)

A subject in the Bachelor of Engineering (Civil), Bachelor of Engineering (Civil)/Bachelor of Business, Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical)/Bachelor of Business, Bachelor of Engineering (Product Design), Bachelor of Engineering (Robotics and Mechatronics), and Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & 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 design and engineering of materials to achieve a predetermined set of properties.
At the completion of this subject, 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.
- Describe the major methods of manufacture relevant to the three major classes of materials and comment on their effect on the structure/properties of materials and, hence, on product performance.
- 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 (20%)
- 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.

Engineering materials (30%)
- Structure and mechanical properties of metals: elastic, plastic, tensile properties, shear, slip.
- Structure and mechanical properties of polymers: Tg, viscoelasticity, isotropy.
- Structure and mechanical properties of ceramics: transverse rupture strength.
- Deformation and strengthening: reinforcing, preferred molecular orientation, composites, cross-linking.

Metal, polymer and Ceramic Processing (20%)
- Casting, hot and cold work, extrusion, drawing, injection moulding, extrusion moulding, blow moulding, pressing, slip casting, wet forming of clay, isostatic pressing.
- Failure (20%)
  - Material degradation and recycling.
  - Corrosion: composition cell, stress cell, concentration cell, dry corrosion, corrosion protection.
  - Failure modes: creep, fatigue, ductile, brittle, impact, tensile.

Materials selection strategies (10%)
- Typical properties, properties by class of material, relationship between properties and failure modes, materials selection databases.

Textbook

References

HES1300 Robotics & Mechatronics Project 1
12.5 Credit Points • 1 Semester • 72 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures; Laboratory: 12 by 2-hour computer programming laboratories; Laboratory: 12 by 3-hour technical drawing laboratories; Assignments: students will be given scheduled time to work on assessable assignments, Web-based subject presence (Blackboard). Subject is supported online. A number of online tests is conducted during the programming classes. • Assessment: Assignments, Class exercises, Practical Examination, Tests
A subject in the Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Mechanical)/Bachelor of Business, Bachelor of Engineering (Mechanical).

Aims & Objectives
During the course we aim:
- To develop skills in visualisation and graphical communications.
- To learn basics of technical drawing and engineering terminology.
- To understand the principal and develop practical skills in CAD.
- To provide tools and techniques that will assist students when undertaking engineering projects.
- To introduce programming principles.
- To introduce the C programming language.
- To develop programming knowledge and skills applicable to the content area.
- To 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 and conventions.
- Understand basic steps of generating an algorithm for a simple problem.
- Implement a simple algorithm in C.
- Understand the concept of structured programming.
- Write structured computer programs for solving moderately complicated algorithms.

Content
Computer Programming: Algorithmic approach to problem solving; Program design methodology, C basics; The simple data types; Control structure; Arrays, Functions
Technical Drawing: Engineering standards; Engineering terminology; Freehand sketching; Oblique, orthogonal, isometric and perspective projections; Dimensioning; Sectioning; Computer Aided Drafting (CAD)

References

HES1305 Robotics & Mechatronics Project 2
12.5 Credit Points • 1 Semester • 100 Hours • Hawthorn • Prerequisite: HES1300 • Teaching methods: Lectures; Laboratory: 12 by 2-hour mechatronics laboratories; Tutorial: 12 by 2-hour technical communication laboratories; Workshop: 10 by 4-hour machining and welding workshop training; Assignments: students will be given scheduled time to work on assessable assignments, Web-based subject presence (Blackboard). Subject is supported online. • Assessment: Examinations, Journal, Literature Review, Oral Presentation, Praxis, Report
A subject in the Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Mechanical)/Bachelor of Business, Bachelor of Engineering (Mechanical).
Aims & Objectives

During the course we aim:

- To develop and improve students' investigation, teamwork and time management skills.
- To develop understanding and knowledge of:
  - Professional careers within Engineering and Science.
  - Professionalism in engineering including ethical, social and environmental aspects of engineering.
  - Critical analysis and problem solving strategies.
  - Professional presentation and engineering report writing.
- To present students with opportunities to interview practicing engineers in a particular engineering discipline.
- To provide students with the opportunity to experience peer reviewed oral presentations.
- To provide students with the opportunity to further develop their ability to graphically communicate ideas and designs using sketches and drawings in accordance with engineering standards and conventions.
- To provide students with the opportunity to further improve skills in the following areas:
  - Teamwork and time management.
  - Problem solving.
  - Professional presentation.
  - Engineering report writing.
- To provide students with the opportunity to learn basics of Robotics and Mechatronics engineering in a cooperative and collaborative environment.
- To provide students with a unique opportunity to perform real-life engineering projects.
- To provide students with opportunity to practice project management.
- To provide students with opportunity to practice programming skills.
- To provide students with opportunity to increase their understanding of sensors.
- To provide students with opportunity to practice structural programming.
- To provide students with opportunity to understand computer interfacing of different type sensors.
- To provide students with hands-on skill for machining and welding.

At the end of this course students will be able to:

- Link and use their existing knowledge for engineering purposes.
- Demonstrate understanding of current challenges facing robotics and mechatronics engineering discipline.
- Demonstrate understanding of history of a chosen discipline.
- Demonstrate understanding of emerging trends in a particular engineering discipline.
- Demonstrate understanding of engineering education environment and emerging trends in engineering education.
- Demonstrate awareness of skills necessary to perform engineering tasks.
- Demonstrate understanding of skills required from engineering students and engineering graduates.
- Demonstrate development of investigation skills.
- Demonstrate understanding of engineering approach in problem solving.
- Demonstrate understanding of engineering systems and systemic approach in engineering.
- Demonstrate understanding of design process.
- Demonstrate capability to generate alternative engineering solutions to solve simple engineering problem.
- Demonstrate capability to analyse critically various alternative engineering solutions.
- 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 ability to interview practicing engineer in a particular engineering discipline.
- Demonstrate awareness of engineering ethics.
- Demonstrate understanding of social and environmental implications of engineering practice.
- Demonstrate capability of writing detailed computer programs in C.
- Demonstrate capability of finishing a given task within a certain time frame using limited resources.
- Demonstrate capability of making simple parts using lathe and milling machines.
- Demonstrate 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 principles in behaviour programming.

Technical Communication

- 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.

References

Mackay, H., Why Don’t People Listen, Australia, Pan, 1994.
Aims & Objectives

This course aims:

- 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.

At the end of this subject students will be able to:

- Demonstrate an ability to name and write the symbols of elements, and the names and formulae of various molecular and ionic compounds and use this knowledge to write and balance chemical equations.
- 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.
- Determine the yields of products from chemical reactions, the limiting reagent and amounts of excess reagent.
- Predict the solubility of salts in a given reaction
- Calculate masses/moles of substances in aqueous solutions and find their concentration
- Perform calculations associated with practical work, e.g. dilutions, back-titrations etc.
- Perform calculations with aqueous and gaseous species in terms of volumes and pressures, using equations based around the Ideal Gas Law.
- Describe chemical equilibrium using the terms forward and reverse reactions and dynamic process.
- Express the equilibrium constant in terms of the equilibrium concentration of products and reactants and their respective stoichiometric coefficients for both homogenous and heterogeneous equilibria.
- State the relationship between $K_p$ and $K_c$ and determine the equilibrium constant given equilibrium concentration data.
- Describe 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 concentration of all species in a solution.
- State how changing concentration, volume, pressure, or temperature will shift the reaction so that equilibrium will be maintained using Le Chatelier’s Principle.
- Describe the effect of a catalyst has on equilibrium concentrations.
- Define an acid or base according to the Loewy-Brønsted scheme and write the conjugate of a given acid or base.
- Distinguish between 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.
- Calculate the pH of a weak acid or base of given concentration and determine the concentration of all species present.
- Interconvert between $K_a$, $K_b$, $pK_a$ and $pK_b$.
- Understand how a buffer works and be able to calculate the pH of a buffer.
- Calculate the required amounts (volume or number of mole) of acid and/or base needed to obtain a particular pH.

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.

References

To be purchased prior to the commencement of classes:
HES1500 Practical Manual, Swinburne Press.
Material that will be given in class:
Personal copy of the Periodic Table.
HES1500 Study Sheets for Tutorial and Lecture Problems.

HES1500E Introduction to Chemistry

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil
Teaching methods: Lectures, Tutorials, Laboratory Sessions • Assessment: Computer-managed learning 5% Examinations 60%, Practical work 20%, Tutorial tests 15%
A subject in the Bachelor of Health Science (Public and Environmental Health).

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.

**Content**

- Elementary chemistry: structure of atoms, 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. Calvanic 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 titrations.
- Safety in the laboratory and application to potentially hazardous environments.

**References**


HES1500 Practical Manual, Swinburne Press.

**HES1525 Chemistry 2**

12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil - But HES1500 is highly recommended and it is assumed that students have attempted this subject or its equivalent • Teaching methods: Lectures, Practical classes: 5 x 4-hour practical laboratories; Web-based subject presence (Blackboard). Subject will be supported online. • Assessment: Examinations (Physical & Organic) (25% each), Practical Report (25%), Analytical Test (25%)

A subject in the Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology)/Bachelor of Arts (Media & Communications), Bachelor of Science (Biotechnology)/Bachelor of Business, Bachelor of Science (Psychology/Biochemistry), Bachelor of Science (Biochemistry).

**Aims & Objectives**

This course 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, and
- to introduce, and to begin to develop skills in, organic, physical and analytical chemistry.

At the end of this subject 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.

**Content**

Organic Chemistry:

- The nature of the chemical bond and the resultant shape of molecules.
- The role of molecular geometry in chemical reactions.
- Valence Bond Theory.
- 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.
- Polymer degradation studies and their fate in the environment.
- A general introduction to physical chemistry.
- Enthalpy and the first law of thermodynamics.
- An introduction to chemical kinetics.

**References**

Your text book from first semester (HES1500) should be retained. Those who do not have this text book should consult with the lecturers involved as to the advisability of purchasing it.


HES1500 Practical Manual, Swinburne Press.

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 provided free of charge.

**HES1555 Consumer Science**

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Tutorials, Practical Demonstrations • Assessment: Assignment (30%) Final examination (50%) Practical work (20%) Assignments

A subject in the Bachelor of Science (Biotechnology), Bachelor of Science (Psychology/Biochemistry), Bachelor of Science (Biochemistry).
Aims & Objectives
To illustrate the scientific basis behind the choice consumers have when obtaining common household products and to provide an understanding of the science involved in how those products work.

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.

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.

References

HES1610 Concepts of Biology
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Tutorials, Practical Demonstrations, Extensive use of Multimedia Learning Resources. Learning Extension Program via the Internet. Assessment: Final examination (60%).
A subject in the Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology) / Bachelor of Business, Bachelor of Science (Biotechnology) / Bachelor of Arts (Media & Communications), Bachelor of Health Science (Public and Environmental Health), Bachelor of Science (Psychology/Biochemistry), Bachelor of Science (Biochemistry)

Aims & Objectives
- To develop an understanding of the central role of DNA in the flow of genetic information in the cell, how it influences the phenotypic and genotypic characteristics of the organism and ultimately how DNA can be manipulated for useful applications.
- To promote an informed awareness of current bioethical issues surrounding genetics and encourage critical thinking about the issues.

Content
- Overview of energy transformations within the cell, role of enzymes and their action, fates of metabolites. Application to biotechnology processes.
- Review of cell division processes, the flow of genetic information.
- Chromosomes, Genes, DNA and its structure.
- Central dogma of molecular biology, processes of replication, transcription and translation, post-translational processing of proteins.
- Principles of genetic engineering, techniques including, creating recombinant DNA molecules, screening libraries, blotting techniques, PCR and DNA sequencing.
- The Human Genome Project and the post-project era.
- Examples of applications in biotechnology.
- Mendelian genetics, traits, types of crosses, gene pools, Hardy-Weinberg Law.
- Cytogenetics, karyotypes, mutations and gene defects. Inborn errors of metabolism.
- Genetic issues including genetic determinism and eugenics, gene therapy, GM foods and GMOs, patenting of life.
- Relevant practical exercises.

References

HES1700 Environmental Health Management 1
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Group and Individual Exercises • Assessment: Assignments, Tests
A subject in the Bachelor of Health Science (Public and Environmental Health)

Aims & Objectives
- To introduce the student to the basic principles of communication, negotiation and conflict resolution skills appropriate to the needs of the environmental health professional.
- 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, recognising 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 environment protection.
• An overview of appropriate legislation, policies and codes.

References

HES1715 Environmental Measurement
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: Lectures, Demonstrations, Computer Laboratory Practicals • Assessment: Assignments, Examinations

A subject in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
• Develop an appreciation of personal computer applications and software relevant to environmental health management.
• Provide an introduction to computer programming using QBasic.
• 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-DOS, MS-Word and MS-Excel.
• Show an understanding of computer programming using QBasic as the model.
• 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.

Content
• Computer hardware, peripheral devices, CPU, Operating systems, DOS, Windows.
• Application packages such as word processors, spreadsheets, databases etc.
• Data acquisition from instruments, incorporation into Excel.
• Use of Excel for simulation.
• Principles of scientific instrumentation.
• Electrical technology.
• Mechanical and electrical devices with applications.
• Radiation sources: materials and detection.
• Acoustics.

References
**HES1905 Commercial Pilot Licence 1**

12.5 Credit Points • 1 Semester • 72 Hours • Hawthorn • Prerequisite: HES1800

Teaching methods: Classroom • Assessment: Examination 60%. Assessed work 40%. In addition candidates must achieve satisfactory progress in their flying training towards the CASA PPL to receive a pass in this subject.

A subject in the Bachelor of Technology (Aviation), and Bachelor of Technology (Aviation)/Bachelor of Business.

**Aims & Objectives**

To consolidate the theory taught at GPT and to further develop the additional knowledge necessary for the student to undertake practical cross-country flying training.

**Content**

Advanced Flight Planning 1:
- Use of ERS(A).
- Aerodromes and Authorised Landing Areas.
- Density height, take-off and landing performance, climb, cruise and descent performance.
- Loading.
- Flight plan preparation, flight planning, equi-time point and point of no return.
- Airworthiness and equipment.

Advanced Procedures 1:
- Documentation.
- Pilot licences, privileges and limitations.
- Rules and conditions of flight.
- Air service operations.
- Aerodromes.
- Airspace and traffic services.
- Emergencies, accidents and incidents.
- Security.
- Radio telephony.

Navigation Theory 1:
- Form of the Earth.
- Time.
- Charts and publications.
- Computations, navigation and radio navigation aids.

Aviation Meteorology 1:
- Composition of the atmosphere.
- Heat, temperature, pressure and humidity.
- Atmospheric stability.
- Clouds and precipitation.
- Visibility.
- Winds, air masses and fronts.
- Flight considerations.
- Synoptic meteorology.
- Weather services.
- Climatology.

Advanced Aircraft General Knowledge 1:
- Engines, propellers, power plants, systems and instruments.
- Advanced aerodynamics.

Human Performance and Limitations 1:
- 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.

**Textbooks**

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, Civil Aviation Orders, Amendments.

Civil Aviation Safety Authority, *Aeronautical Information Publication*.
Civil Aviation Safety Authority, Operational Notes (CASA), NDB, VOR, and DME.

**HES1910 Human Factors, Communication Skills and Leadership**

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: Nil

Teaching methods: Lectures 6 Hours, Assignments/Tutorials 30 Hours. Note: A one-hour lecture and two-hour laboratory will be conducted by the School of Information Technology on database concepts and application of Microsoft Access.

Assessment: Examination 50% Assignments 35% Presentations 15% Participation 10%

A subject 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.

**Content**

Structure and Organisation Operation:
- Types of meetings, chairing meetings, conduct of meetings, roles and responsibilities, organisational cultures, multicultural 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.
- Introduction to the concept of Crew Resource Management (CRM).

Organisational Skills:
- Filing, correspondence, product control.
- Program Evaluation Review Technique (PERT).
- Referencing documents.

Information Technology:
- Role of information technology, use of computers, word processing, Internet, Microsoft, PowerPoint, Access. Excel is covered in Mathematics.

**References**


**HES1915 Occupational Health and Safety**

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Nil

Teaching methods: Classroom • Assessment: Examinations 40% Assessed work 60%

A subject 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 subject includes a CASA-approved Dangerous Goods course and an extensive treatment of aviation medicine.

**Content**

**Occupational Safety:**
- Safety hazards and safety systems.
- Noise and vibration: theory, measurement, analysis and control.
- Fire: combustion theory, types of fires and extinguishers, fire-fighting techniques, evacuation, protection from fire and smoke.

CASA-approved Dangerous Goods Course:
- 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.
- 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:**
- Aviation medicine: human responses to altitude change, atmosphere, acceleration, noise, workloads.
- Vision, balance, spatial disorientation, allusions, hypoxia, hyperventilation, physiology and pathology of the human ear, audiometry, hearing loss prevention, respiration, air sickness, 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**

Ewing, Aviation Medicine and Other Human Factors for Pilots, 2nd edn, Enviromedix.

**References**

IAIA, Dangerous Goods and Regulations.
Civil Aviation Safety Authority, Civil Aviation Orders, Regulations, Amendments.
DLO, Manual Handling: Regulations and Code of Practice, Department of Labour, Melbourne, 1983.

**HES1920 General Flying Progress Theory**

12.5 Credit Points • 1 Semester • 6 Hours per Week • Prerequisite: Nil • Teaching methods: Classroom • Assessment: Examination 80% Assessed work 40%.

A subject 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 basic understanding of flight planning, procedures, navigation theory, general meteorology, aircraft general knowledge and human performance and limitations sufficient to enable practical flying training to the General Flying Progress Test.

**Content**

Basic Flight Planning to GFPT:
- Purpose, use and value of the Flight Manual.
- Take-off and landing performance, aircraft weight and loading restrictions.
- Pressure height, density height, limitations, airworthiness and aircraft equipment.

Basic 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.

Basic Navigation Theory:
- Charts and publications, reading maps, symbols.

General Meteorology:
- Standard atmosphere, adiabatic lapse rate, weather services, forecasts, climatology and local weather.

Basic Aircraft General Knowledge:
- Terminology, direction, time, vertical measurement and other units.
- Power plants and systems, fuels and oils, engine handling, malfunctions, engine icing and flight instruments.
- Basic 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., Flight Rules and Air Law, Series 4, Aviation Theory Centre.
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, Civil Aviation Orders, Regulations, Amendments.
HES1935  Internal Combustion and Gas Turbine Engines

12.5 Credit Points  • 1 Semester  • 60 Hours  • Hawthorn  • Prerequisite: HET124  • Teaching methods: Classroom  • Assessment: Examination 80% Assessed work 40%

A subject 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.

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.

References

Kerrebrock, J.L., Aircraft Engines and Gas Turbines, MIT.

HES1945  Aircraft Electrics and Avionics

12.5 Credit Points  • 1 Semester  • 48 Hours  • Hawthorn  • Prerequisite: Nil  • Teaching methods: Lectures 36 hours, Assignment/Tutorials 12 hours  • Assessment: Examination 70% Assignments 30% Presentations 10%

A subject 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, including automatic pilots and automatic landing operations and electrical power generation, including control and supply. Successful completion of this subject should enhance discussion with relevant aviation specialists relating to aircraft operations.

Content

- Aircraft electrical and electronic systems: an overview.
- Voltage, current, resistance, power, Ohm’s Law, Kirchhoff’s Law.
- Alternating and direct current circuit analysis.
- Batteries (aircraft): lead-acid, nickel-cadmium, nickel-iron.
- Magnetic circuits, flux density, field strength, permeability, hysteresis.
- Electric motors and generators (aircraft) ac/dc, single and three phase.
- Transformers, rectification, transducers.
- Electronic theory, semi-conductors, thyristors, JFETS, MOSFETS, zener diodes.
- Analogue and digital electronics, binary numbers, and/or/not nor circuits.
- Aircraft electronic devices, systems and equipment.
- Electrical wiring and installations, electrical distribution, control and protection.
- Fire protection systems.
- Right instruments: ASI, altimeters, gyrosopes, AH, DG, VG, central computers.
- Avionic systems and equipment: general/specific.
- Control systems: open/closed loop, stability, methods of assessment, s-plane.
- Automatic pilots, automatic landing systems - failure probability assessment.
- Navigation: ADF, VOR, FDS, DME, ILS, GPS, TACAN, ADS, FMS, INS.
- Instruments (other): temperature, RPM, fuel contents, fuel flow.

Textbook


References

CAA Operational Notes on NDB, ADF, DME, VOR, ILS.

HES2120  Structural Mechanics

12.5 Credit Points  • 1 Semester  • 60 Hours  • Hawthorn  • Prerequisite: HES1125  • Teaching methods: Lectures; Tutorials: tutorials will be run in groups of 30 students; Laboratory: two lab sessions will be arranged for smaller groups; Flexible Delivery: subject will be supported online  • Assessment: Examinations, Laboratory Projects, Tests

A subject in: Bachelor of Engineering (Civil), Bachelor of Engineering (Civil)/ Bachelor of Business, Bachelor of Engineering (Mechanical)/Bachelor of Business, Bachelor of Engineering (Mechanical)/Bachelor of Business, Bachelor of Engineering (Robotics & Mechatronics), and Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering).

Aims & Objectives

During the course, we aim:

- To develop an understanding of structural and material behaviour.
- To develop skills in analysis of statically determinate and indeterminate structures.
- To understand basic design formulae against structural and material failure.

At the completion of this subject, 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%):
  - Modelling of structures; equilibrium, statical and kinematic 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

Textbook

References

HES2125 Design of Concrete Structures
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES1125, HES2120 • Teaching methods: Lectures (24 hours), Tutorials (20 hours), Assignments (4 hrs), Web-based subject presence (Blackboard), Videotapes • Assessment: Examination (70%), Concrete Design Project (20%), Lab Report (5%), Test (5%) A subject in the Bachelor of Engineering (Civil), Bachelor of Engineering (Civil)/Bachelor of Business

Aims & Objectives
The aims of this subject 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 states 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
- Properties and influence of concrete constitutes (Portland cement, water, aggregate, admixtures).
- Properties of fresh concrete (slump test, bleeding, shrinkage, compaction, curing).
- Properties of hardened concrete (cracking, durability, corrosion, creep, strength).
- Steel specifications and properties of reinforcing.

Design of Concrete Members
- Ultimate bending moment capacity of beams using a simplified stress-strain relationship for concrete.
- Design of beams for durability and fire in accordance with AS3600.
- Capacity of beams in shear.
- Analysis of continuous beams and one-way slabs using the simplified method.
- Deflections and crack control in beams and one-way slabs.
- Detailing of reinforcement for beams and one-way slabs.
- Design of short reinforced concrete columns.
- Introduction to prestressed concrete technology and bending capacity of prestressed concrete beams.
- Use of design charts.

Textbooks and Notes
Lecture and study notes as provided by course coordinator.

Recommended reading
Hibbeler, R.C., Structural Analysis, 4th edn, Prentice Hall.

Useful Websites
Cement and Concrete Association of Australia: www.ccaa.com.au
Concrete Institute of Australia: www.coninst.com.au
Steel Reinforcing Institute of Australia: www.sria.com.au
Smorgon ARC: www.smorgonarc.com.au
OneSteel reinforcing: www.reinforcing.com

HES2131 Topographical Engineering
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Substantial completion of first year, including HMS111, HMS112, and HES1105 • Corequisites: HES2148 • Teaching methods: Lectures, Tutorials, Field practical exercises, Assignments, Graphic presentations • Assessment: Examination (70%), Practical Projects (30%) A subject in Bachelor of Engineering (Civil), and Bachelor of Engineering (Civil)/Bachelor of Business

Aims & Objectives
During the course we aim:
- To provide the students with sufficient Surveying knowledge to appreciate the importance and precision of measurement.
- To be able to analyse a data set and to make the necessary decision to accept or reject the said data.
- To be able to place practical requirements on data sets for acceptability.
- To undertake the necessary calculations to prove or disprove data accuracy.
- To be able to undertake field exercises and apply the survey theory and computations in a practical manner.
Aims & Objectives
During the course we aim:

• 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:

• 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.

References

Recommended reading
Underwood, R.T., Road Engineering Practice, 1st edn, Macmillian Education, Australia, 1995.
- Produce engineering drawings according to professional standards.
- Create mathematical models using standard software (e.g., Excel, Mathemtica).
- Implement computer-aided solutions for engineering problems.
- Prepare written or graphical reports on engineering problems.

**Content**

**CAD (50%)**
- Introduction to CAD: screens, menus, toolbars, commands, drawing elements, editing, filling, 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 standards.

**Computer Application (50%)**
- Computer software applications (e.g., Excel, Mathematica, Word, PowerPoint).
- Specialised computer software applications (e.g., SpaceGas, Terramodel).

**References**

This part of the subject has no assigned textbook. All material to be covered will be delivered online and through printed tutorials. However, students are encouraged to explore the Internet for relevant information regarding applications of this part of the subject. 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 • Prerequisite: HES1125, HES1219 • Teaching methods: Lectures (24 Hours); Tutorial (18 Hours); Laboratory (6 Hours) • Assessment: Laboratory Practical Test (5%), Examinations (50%), Investigation Project (10%), Research Assignment (10%), Oral presentation (10%), Class Tests (15%) • A subject in the Bachelor of Engineering (Civil), and Bachelor of Engineering (Civil)/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/sediment specimens, construct simple geological cross sections, and conduct a basic soil classification, 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 Standard 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 fields and/or laboratory tests.
- Understand the principle of settlement and the distinct difference between immediate settlement and consolidation.
- Be able to simulate external soil loads 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 magma, 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 Forms 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, Cobbles 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).
- 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.

**Textbook**


**References**


**HES2230 Engineering Materials**

12.5 Credit Points • 1 Semester • 52 Hours • Hawthorn • Prerequisite: HES1230 • Teaching methods: Lectures (36 hours), Tutorials (12 hours), Laboratory (4 hours). 2 practical laboratories on: (i) Heat treatment; and (ii) Fatigue testing • Assessment: Oral Presentation (10%)/Examination (70%), Lab Reports (10%), Written Assignments (10%)

A subject in the Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical)/Bachelor of Business, and Bachelor of Engineering (Product Design).

**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 students’ 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.

• 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 subject, students should be able to:

• 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, and thereby explain the effect of microstructure on properties.

• 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.

• To describe the basis on which surface engineering and methods of strengthening in all major classes of materials.

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-carbon phase diagram, 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: rod/plate, 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/plasma treatments.

• Surface Coating: electroplating, electrochemistry, decorative/industrial applications, thermal spraying, methods, microstructure/properties/
• 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.

Quality and measurements (12%):
• Metrology: standards of accuracy, linear, thread, gear, angular measurements, measurement of surface roughness, roundness, flatness. Concepts of quality, quality control and quality assurance, quality control tools.

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, shearing, extrusion, selection of cutting tools, die sets design for metal forming and plastic moulding dies.

Textbook

References

HES2310 Machine Dynamics 1
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HET124, HMS112 or equivalent • Teaching methods: Web-based subject presence (Blackboard); Subject will be supported online • Assessment: Examination (75%), Tests (25%)
A subject in the Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical)/Bachelor of Business, Bachelor of Engineering (Product Design Engineering), Bachelor of Engineering (Robotics & Mechatronics), and Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering).

Aims & Objectives
During the course, we aim:
• To derive, as with other engineering subjects, 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

At the completion of this subject, students should be able to:
• Understand the basic machine dynamic principles of simple machine elements.
• Be prepared to study higher-level machine dynamics (Machine Dynamics 2)

Content
Dynamics of a particle (25%)
• A review of rectilinear motion
• Plane curvilinear motion
• Use of rectangular, polar and normal-tangential coordinates in plane motion
• Use of Newton’s second law in plane motion
• Plane 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, R.L., Kinematics and Dynamics of Planar Machinery, Prentice-Hall.

References
Bedford, A., Fowler, W., Dynamics, Addison-Wesley.

HES2330 Thermodynamics 1
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HET124, HMS112 or equivalent • Teaching methods: Web-based subject presence (Blackboard); Lectures; Tutorials; Laboratory; Assignments • Assessment: Examinations, Labs, Class Tests
A subject in the Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical)/Bachelor of Business.

Aims & Objectives
During the course we aim:
• To develop a basic understanding of thermodynamics
• 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

At the end of this subject 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 gasses.

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, reheats, 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.

Textbook

References

HES2340 Fluid Mechanics 1
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: HET124, HMS112 • Teaching methods: Web-based subject presence (Blackboard); Lectures; Tutorials; Laboratory; Assignments • Assessment: Examinations, Labs, Class Tests
A subject in the Bachelor of Engineering (Civil), Bachelor of Engineering (Civil)/Bachelor of Business, Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical)/Bachelor of Business

Aims & Objectives
During the course we aim:
• 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 subject 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 (8%)
• 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 (8%)
• Orifice, anemometers, venturi meters, weirs.

Dimensional Analysis & Similitude (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.

Textbook

References

HES2510 Investigative Chemistry Prac 1
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HES1500, HES1525 • Teaching methods: Laboratory Classes. Each of the five experiments contributes equally to the final mark in the subject. • Assessment: Reports (50%) Demonstrator assessment (30%) Laboratory test (12%) and Written test (8%)
A subject in the Bachelor of Science (Biochemistry)/Chemistry, Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology)/Bachelor of Arts (Media & Communications), and Bachelor of Science (Biotechnology)/Bachelor of Business.

Aims & Objectives
• 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.

Content
Laboratory practical experiments in quantitative analysis using volumetric titration, UV-visible spectrophotometry, atomic absorption spectroscopy, gas chromatography and high-performance liquid chromatography.

References
Bowater, I.C., Atomic and Molecular Spectroscopy, (printed notes), Swinburne Press.
Cross, R.F., Chromatography, (printed notes), Swinburne Press.

HES2515 Investigative Chemistry Prac 2
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HES1500 & HES1525 • Teaching methods: Laboratory Classes. Each of the five experiments contributes equally to the final mark in the subject. • Assessment: Reports 50% Demonstrator assessment 30% Laboratory test (12%) and Written test (8%)
A subject in the Bachelor of Science (Biochemistry)/Chemistry, Bachelor of Science (Psychology)/Biochemistry, Bachelor of Science (Biotechnology), and Bachelor of Science (Biotechnology)/Bachelor of Arts (Media & Communications).

Aims & Objectives
• To building 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.

**Content**

Experiments will be performed using organic chemicals which expose students to the following techniques: extraction, distillation, purification, Instrumental analysis, macroscale 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 IB, employers.
• Orientation to Occupational Health and Safety (OHS) legislation and issues.
• Talks on Intellectual Property and Patents and quality issues (TQM, GLP, GMP).

**References**


**HES2500 Chemistry 3**

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HES1500 & HES1525 • 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 subject in: Bachelor of Science (Biotechnology), Bachelor of Engineering/Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology)/Bachelor of Business, Bachelor of Science (Biochemistry).

**Aims & Objectives**

- 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 Gibb's Phase Rule, the lever rule, one and two component phase diagrams, fractional and steam distillation, solvent ex-traction, melting point test for purity, fractional crystallisation and zone refining.


**References**

Computers in Chemistry (printed notes), Swinburne Press.

**HES2540 Forensic and Analytical Science**

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HES1525 • Teaching methods: Lectures • Assessment: Examinations

A subject in: Bachelor of Science (Biotechnology), Bachelor of Science (Biochemistry)

**Aims & Objectives**

- 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.
• Huckel rule.
• Arenes.
• Electrophilic and nucleophilic aromatic substitution.
• Carbocations.
• Stabilisation.
• Rearrangements.

**References**


Organic chemistry textbook (latest edition of McMurry or Morrison and Boyd).

Bowater, I.C., *Atomic and Molecular Spectroscopy*, (printed notes), Swinburne Press.

Cross, R.F., *Cross Chromatography*, (printed notes), Swinburne Press.

**HES2621 Introduction to Biochemistry**

12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Practical Demonstrations, Practical Classes, Extensive Use of Multimedia Learning Resources. Learning Extension Program via the Internet • Assessment: Assignments 10%, Short tests 10%, Final exam 40%; Practical reports 30%; Practical test 10%

A subject in the Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology) / Bachelor of Business, Bachelor of Science (Psychology/Biochemistry), Bachelor of Science (Biochemistry)/Bachelor of Arts (Media & Communications).

**Aims & Objectives**

- To acquaint students of the structural complexity of biomolecules and their functions.
• To provide a detailed understanding of the structure, function and kinetic properties of enzymes and their role in metabolic activities in the living cell.
• To examine the main catabolic pathways of the cell and how they are integrated with other reaction sequences within the cell.
• To develop basic practical biochemical skills for the handling and analysis of biomoecules.

Content
• Structure, chemical properties and function of the main classes of biomoecules including monosaccharides, polysaccharides, amino acids, peptides and proteins, fatty acids, triacylglycerols and related lipids, nucleotides and nucleic acids.
• Enzyme kinetics, reaction mechanisms, Michaelis-Menten kinetics, methods for analysis, inhibition of enzyme activity.
• Principles of bioenergetics, strategies of metabolism, types of metabolic reactions.
• Reactions of glycolgenolysis, 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 spectrophotometry, quantitative and qualitative analysis of carbohydrates and proteins, handling of enzymes and determination of their kinetic properties.

References

HES2626 Biochemistry of Genes and Proteins
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Practical Demonstrations, Practical Classes, Extensive Use of Multimedia Learning Resources. Learning Extension Program via the Internet • Assessment: Written assignment 10%, Final exam 50%, Practical reports 30%, Practical test 10%
A subject in the Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology) / Bachelor of Business, Bachelor of Science (Psychology/Biochemistry), Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology) / Bachelor of Arts (Media & Communications)

Aims & Objectives
• To explore the molecular detail of the flow of genetic information within both prokaryotic and eukaryotic cells and the control mechanisms used.
• To provide an insight into the complexity of the structure of different types of proteins and our understanding of structure-activity relationships of proteins and their roles in biological processes.
• To further develop basic biochemical laboratory skills essential in modern biotechnology laboratories.

Content
• Review of structure of DNA and RNA.
• Replication of DNA.
• Restriction, repair, recombination, rearrangement and amplification of DNA sequences.
• Transcription, mechanisms of regulation of transcription, processing of eukaryotic mRNA, splicing, ribozymes.
• Processes involved in translation, control mechanisms, chain folding and post-translational modification.
• Physical organisation of genomes, repetitive sequences, introns.
• Protein targeting and transport, degradation, caspases and apoptosis.
• Protein structure: organisational levels, folding pathways, interactions that underlie protein structure, types of functional domains and motifs, structural analysis.
• Functional analysis of different classes of proteins including storage, transport, regulatory, messengers, antibodies and structural proteins.
• Mechanism of activity of model proteins including haemoglobin, allosteric behaviour of proteins.
• Contractile systems and molecular motors.
• Evolution of proteins.

The theory component will be supported by relevant practical exercises that will illustrate some of the principles covered, including analysis of DNA, purification of proteins and their characterisation and computerised analysis of protein structure. Also practical lectures on GLP and GMP, data handling and recording, interpretation and reporting.

References

HES2631 The Microbial World
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil • 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 subject in the Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology) / Bachelor of Business, Bachelor of Science (Psychology/Biochemistry), Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology) / Bachelor of Arts (Media & Communications), Bachelor of Health Science (Public & Environmental Health)

Aims & Objectives
• 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.

The theory component will be supported by relevant practical exercises that will illustrate some of the principles covered in lectures, including methods for growing, isolating and handling micro-organisms and their identification.

References

HES2636 microbes in the Environment
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil • 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 subject in the Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology) / Bachelor of Business, Bachelor of Science (Psychology/Biochemistry), Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology) / Bachelor of Arts (Media & Communications), Bachelor of Health Science (Public & Environmental Health)

Aims & Objectives
• 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.
Aims & Objectives

- To examine the most appropriate methods of liquid waste water treatment & disposal.
- To study water chemistry in terms of sources of pollutants and their effects.
- Related practical exercises.

References

**HES2700 Food Science**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES1500E & HES1616 • Teaching methods: Lectures, Laboratory Practicals • Assessment: Assignments, Examinations, Lab Reports

A subject in the Bachelor of Health Science (Public and Environmental Health).

**Aims & Objectives**

- To study food chemistry analytical techniques used in the food industry.
- To study the use purpose and function of permissible food additives.
- To examine natural hazards associated with food.
- To study basic organic chemistry relevant to food composition.

**Content**

- Organic chemistry: Molecules which play a major role in food composition.
- Food chemistry: Techniques used in determination of 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 or joule content of foods.
- Other manual and instrumental techniques used in food analysis to determine compliance with the Food Standards Code.
- Chemical additives to food will be considered under the following headings: chemical classes of food additives, 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 the following: preservatives, antioxidants, flavouring compounds, sweetening agents, flavour enhancers, nutrients, emulsifiers.
- Natural hazards associated with food including MSG, solanine, mycotoxins, seafood toxicosis, ciguatera.

References
Food Standards Code.

**HES2705 Water Science**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES1500E • Teaching methods: Lectures, Field Visits, Laboratory Practicals • Assessment: Assignments, Examinations, Lab reports

A subject in the Bachelor of Health Science (Public and Environmental Health).

**Aims & Objectives**

- To study water chemistry in terms of sources of pollutants and their effects.
- To study the analysis of water for polluting material.
- To study swimming pool chemistry.
- To examine the most appropriate methods of liquid waste water treatment & disposal.

**Content**

- Use of portable test equipment for the evaluation of natural water purity: 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 layouts.
- Site evaluation. Land assessment. Soil percolation tests. Soil characteristics.
- Maintenance of systems. Legislative and code requirements.

References
Swinburne resource books.

**HES2725 Food Safety**

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HBSL200 • Teaching methods: Lectures, Field Demonstrations, Group Work • Assessment: Assignments, Examinations, Tutorials

A subject in the Bachelor of Health Science (Public and Environmental Health).

**Aims & Objectives**

- To develop the skills necessary to effectively monitor food safety against statutory and other requirements, and to institute legal proceedings if required.
- To develop a practical understanding of the principles of HACCP and HACCP plan development, particularly in relation to the retail sector.
- To describe major public health pests pertinent to the food industry, including measures for prevention, detection and control.

**Content**

- Food safety legislation: Food Act codes. Statutory requirements and obligations of the food industry including food safety programs.
- Registration. Legal proceedings, warranties, due diligence defences.
- Food handling hygiene: personal hygiene, cross-contamination, safe/unsafe handling, case studies.
- Food premises fit-out guidelines: space, product flow, lighting, ventilation. Surfaces and equipment construction, design and installation, plan review.
- Food premises assessment: effective communication technique, assessment procedure, equipment requirements and use. Sampling techniques.
- Pest management: Pest vectors pertinent to the food industry. Detection, identification and control procedures. Integrated pest management strategies.

References
Construction Guidelines for Food Premises, Dept of Human Services, Victoria, 1996.

**HES2735 Communicable Disease Control**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures • Assessment: Examinations, Tests

A subject in the Bachelor of Health Science (Public and Environmental Health).

**Aims & Objectives**

- 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 in a local and global context.

Content
- Overview, nature and scope of communicable diseases of public health significance, including nature, transmission and control.
- Immunology: Immunisation procedure. Immunisable diseases eg: diphtheria, tetanus, measles, rubella, poliomyelitis, pertussis, mumps, meningitis, hepatitis.
- Diseases spread by contact and aerosols including Mycobacterium marinum, Leptospirosis spp. Legionnaires disease, toxic cyanobacteria, Pseudomonas aeruginosa, tuberculosis.
- Disease spread by ingestion, including bacterial, protozoa, viruses eg: cholera, typhoid and paratyphoid fevers, shigellosis, E. coli (ETEC etc), campylobacter, salmonella, cryptosporidia, giardia, entamoeba, hepatitis, rotavirus, Norwalk.
- Diseases spread by direct contact inc: impetigo caused by S. aureus, S. pyogenes, S pneumonieae, herpes, pediculosis, scabies.
- Zoonotic diseases, including anthrax, brucellosis, hydatids, taeniasis, toxoplasmosis.
- Vector-borne diseases: malaria, dengue, arbo viruses.
- Infection control for skin penetration practices.
- Principles of epidemiology. Approaches, data sources and measurements.
- Surveillance and outbreak investigations.

References
Jekel, J.F., Epidemiology, Biostatistics and Preventative Medicine, W.B. Saunders Company, 1996.

Relevant Codes and Standards.

HES2740 Environmental Health Technology
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil
- Teaching methods: Lectures, Field Exercises • Assessment: Assignments, Tests
A subject in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
- 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.

References

Relevant Codes and Standards.

HES2900 Commercial Pilot Licence 2
12.5 Credit Points • 1 Semester • 72 Hours • Hawthorn • Prerequisite: HES1805 • Teaching methods: Classroom • Assessment: Examination 80% Assessed work 40%. Candidates must in addition achieve satisfactory progress in their flying training towards the CASA CPL to receive a pass in this subject.
A subject in the Bachelor of Technology (Aviation), Bachelor of Technology (Aviation) / Bachelor of Business.

Aims & Objectives
To consolidate the theory taught at CPL 1 and to further develop the knowledge necessary for the student to undertake practical training for the Commercial Pilot Licence.

Content
Advanced Flight Planning 2:
Use of ERS(A); Aerodromes and Authorised Landing Areas; Density height, take off and landing performance, climb, cruise and descent performance; Loading; Flight planning, flight planning, equi-time point and point of no return; Airworthiness and equipment.
Advanced Procedures 2:
Documentation; Pilot licences, privileges and limitations; Rules and conditions of flight; Air service operations; Aerodromes; Airspace and traffic services; Emergencies, accidents and incidents; Security; Radio telephony.
Navigation Theory 2:
- Form of the Earth; Time; Charts and publications; Computations, navigation and radio navigation aids.
- Aviation Meteorology 2:
- Composition of the atmosphere; Heat, temperature, pressure and humidity; Atmospheric stability; Clouds and precipitation; Visibility; Winds, air masses and fronts; Flight considerations; Synoptic meteorology; Weather services; Climatology.
- Advanced Aircraft General Knowledge 2:
- Engines, propellers, power plants, systems and instruments; Advanced aerodynamics.
- Human Performance and Limitations 2:
- 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.

Textbooks
Thom, T., Flight Rules and Air Law, Series 4, Aviation Theory Centre.
Thom, T., Meteorology and Navigation, Series 4, 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, Civil Aviation Orders, Amendments.
Civil Aviation Safety Authority, Aeronautical Information Publication.
Civil Aviation Safety Authority, Operational Notes (CASA), NDB, VOR, and DME.

HES2905 Air Transport Pilot Licence 1
12.5 Credit Points • 1 Semester • 72 Hours • Hawthorn • Prerequisite: CASA CPL(A) Theory Examination Credit • Teaching methods: Classroom • Assessment: Examination 70% Assessed work 30%. Students must also achieve satisfactory progress in their flying training towards the CASA CPL to receive a pass in this subject.
A subject in the Bachelor of Technology (Aviation), Bachelor of Technology (Aviation)/Bachelor of Business.

Aims & Objectives
To provide the student with a knowledge of heavy jet flight planning and performance to a level required for operational situations encountered in the airline industry.

Content
Operation Performance and Flight Planning to ATPL:
Aims & Objectives

To introduce the student to aviation human factors and its importance in the operation of modern commercial aircraft.

Content

- Stress and stress management.
- Human error and workload.
- Attention, monitoring and fatigue.
- Basic decision-making/pilot judgement.
- Flight crew error.
- Systems theory.
- Managing risk and apportioning blame.
- Effective teamwork and communication.
- Flight safety audit and key flight safety issues.
- Personality.
- Ergonomics.
- Automation.
- Simulation.
- Advanced decision-making.
- Case studies.

Textbook


References


HES2915 Airline Operations

12.5 Credit Points  • 1 Semester  • 48 Hours  • Hawthorn  • Prerequisite: Nil  •
Teaching methods: Classroom  • Assessment: 2 Assignments worth a total of 70% Examination 30%

A subject in the Bachelor of Technology (Air Transportation Management) and Bachelor of Technology (Air Transportation Management)/Bachelor of Business.

Aims & Objectives

To facilitate understanding of the functions, processes and relationships involved in airline ground operations. To consider the development of a model for examining some of the complexities of planning, coordinating and controlling a modern airline fleet in the context of operational and commercial environments.

Content

- Systemic overview.
- Interrelationships between airline and non-airline functions.
- Airport passenger and freight terminal management.
- Port coordination.
- Liaison, gate utilisation, passenger and staff displays, special arrangements.
- Airside traffic operations.
- Engineering, catering, cabin cleaning, refuelling, passenger, baggage and freight unloading/loading.
- Scheduling.
- Schedules planning, aircraft route and type selection.
- Operational control.
- Liaison, tasks, responsibilities, aircraft utilisation, planning and current day control.
- Crew scheduling.
- Technical and flight attendant crewing: tours of duty, restrictions.
- Maintenance scheduling.
- Maintenance release hours, line and hangar servicing.

Reference


HES2925 Air Transport Pilot Licence 1

12.5 Credit Points  • 1 Semester  • 72 Hours  • Hawthorn  • Prerequisite: HES1920  •
Teaching methods: Classroom  • Assessment: Examination 70%, Assessed work 30%

A subject 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 knowledge of heavy jet flight planning and performance to a level required for operational situations encountered in the airline industry.

Content

Operation Performance and Flight Planning to ATPL.
Broading understanding of flight manual; Density altitude; Aerodynamics; Take-off and landing performance; Cruise performance; Weight and balance requirements of CAO 20.7.1B; Purpose, use, value and limitations of a flight plan.

Enroute Performance and Methods of Cruise Control:
Presenting performance data; Use of graphs and tabulations; Methods of cruise control; Flight at high speed and high altitude; 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, LPSD.

Textbook

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 • 60 Hours • Hawthorn • Prerequisite: HET124 • Teaching methods: Classroom • Assessment: Examination 60% Assessed work 40%

A subject in the Bachelor of Technology (Aviation), Bachelor of Technology (Air Transportation Management), Bachelor of Technology (Aviation/Bachelor of Business, 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.

Content
• Structural loading, aerodynamic and inertia.
• Load analysis.
• Structurally determine struts, ties, beams, shafts and simple frames.
• Shear force, axial force, torque and bending moment diagrams.
• Stress and 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 concentrations, crack propagation. Fatigue life determination and fatigue test methods.

References
Middleton, D., Composite Materials in Aircraft Structures.
IAP Inc., Aircraft Corrosion Control, EA-CC-1, IAP Inc.

HES2935 Aircraft Maintenance

12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Classroom and Hangar • Assessment: Examination 50% Assessed work 50%

A subject in the Bachelor of Technology (Aviation), Bachelor of Technology (Air Transportation Management). Also as an elective in: Bachelor of Technology (Aviation)/Bachelor of Business, Bachelor of Technology (Air Transportation Management)/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.

Content
Maintenance Practices:
CASA maintenance requirements, aircraft less than 5,700kg, aircraft greater than 5,700kg; Hard time, on condition, soft time; Airline maintenance practices; Gas turbine condition trend monitoring and oil analysis; Maintenance controller and systems of maintenance, ACARS/Data Recorders; Logbooks/maintenance release/ legal documents; MEL (Minimum Equipment List), CDL (Configuration Deviation List), PUS (Permissible Unserviceabilities); Reporting of incidents and failures; ETOPS (engine aspects).

CASA-Approved Schedule 8 Course:
Removal and installation of landing gear tyres, 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; Changing 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 • 60 Hours • Hawthorn • Prerequisite: HET124 • Teaching methods: Classroom • Assessment: Examination 70% Assessed work 30%

A subject 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 explanation for the observed effects of flight parameter changes.

Content
The atmosphere:
• Air as a fluid.
• Compressible and incompressible flow, fluid, viscosity, pressure distribution of a body in fluid flow.

Airfoils and wings, planform effects:
• Aspect ratio, sweep, taper, high lift devices (flaps, slots, slats), aerodynamic characteristics (M.A.C., camber, coefficients, ratios).

• Lift/drag relationship.

Drag analysis:
• Parasite, induced, boundary layer.

Aircraft Performance:
• Maneuvering: bank angle, turn radius.

• Take-off: speeds (V1, Vr, Vmu, Vmcg, Vmca).

• Climb: Thrust/Powder available and required, rate of climb, climb gradient, flap retraction, ceiling.

• Cruise: range and endurance – effects of temperature/altitude/speed, minimum drag, engine inoperative driftdown and Vol, wind effects on descent profile.

Introduction to Static Stability:
• Longitudinal stability, neutral point, aerodynamic effects, directional stability, lateral stability.

Introduction to Dynamic Stability:
• Dihedral effects, Dutch Roll, flutter, centre of gravity and sweepback effects.

Control considerations:
• Stallng, spinning, deep stall, rudder lock.

Textbook

References

HES2945 Aircraft Design and Operation

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Nil

Teaching methods: Lectures 2 hours, Assignments/Tutorials 2 hours • Assessment: Examination 50% Assignments/tutorials 50%

A subject in: 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.

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
McCormick, B., Aerodynamics, Aeronautics, and Flight Mechanics, John Wiley & Sons
Hoefer, S., Fluid-Dynamic Drag.
Anon., Code of Federal Regulations, Aeronautics and Space, 1ACFR1.1, US Govt. Printer

HES2985 Aviation Business Management

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Nil

Teaching methods: Lectures 2 hours, Assignments/Tutorials 2 hours • Assessment: Examination 50% Assignments/tutorials 50%

A subject in: 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.
• To prepare students for both broad-based and highly focused business careers.
• To introduce the multidisciplinary nature of management and the aviation business.

Content
• Organisational structures.
• Models, line and staff, flat, multiple reporting, office, line maintenance, flying operations.
• Risk management.
• Finance, purchasing versus leasing, human response management, employment practices.
• Human resources.
• Issues in staffiing and employment contracts.
• Employee relations/industrial relations climate and culture.
• Employee relations and the Australian Competition and Consumers Commission (ACCC).
• Responsibility, authority and accountability.
• Nature of delegation.
• Aviation business.
• Management practices, accounting practices, costing – direct and indirect.
• General aviation and charter.
• Certification, Air Operators Certificate (AOC), aircraft selection and acquisition, passenger/freight pricing, yield management, preparing quotations, pilot and staff salaries.
• Aviation information technology.
• Information Management systems, practioci and processes.

References
CAOs BU and 82, 100-104 series, CASA.
CARs, CASA.

HES2990 Airport Planning and Management

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Nil
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 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.

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.
- Choice and location of navigation aids.
- Aircraft noise.
- Overview of pavement design.

Textbook

Reference

HES3111 Urban Civil Design
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HES2340, HES2131 and HES2155 • Teaching methods: Lectures; Tutorial; Assignments; Field trips; Web-based subject presence (Blackboard). Subject will be supported online.
- Assessment: Examinations; Project(s); Tests

Aims & Objectives
During the course we aim to:
- 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
  - current stormwater best management practices
- 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

At the end of this course students will be able to:
- Ability to understand and apply systematic approaches to the design of civil engineering systems and develop skills in writing design specifications
- Apply basic principles of hydraulics and hydrology in urban environmental projects
- 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

Content
- Design Specification in Civil Engineering
- Intro to civil engineering systems
- Engineering design process
- Problem formulation and design specification
- Design requirements
- Components of Hydrological Cycle and Rainfall
- Precipitation measurements and analysis
- Intensity-Duration-Frequency analysis
- Infiltration and estimation of effective precipitation
- Flood Estimation and Hydrograph Analysis
- Surface runoff and hydrograph analysis
- Rational method

Stormwater Detention for Quality and Quantity Management
- Components in urban stormwater pollutions
- Water sensitive urban design
- Stormwater reuse applications
- Stormwater wetland design principles

References

HES3121 Design of Steel Structures
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HES1125, HES2120 & HES2125 • Teaching methods: Lectures (24 hours); Tutorials (20 hours); Assignments (4 hrs); Web-based subject presence (Blackboard); Videotapes • Assessment: Examinations (70%), Tests (10%), Steel Design Project (20%)

Aims & Objectives
The aims of this subject 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 subject 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 length of compression members in both braced and sway conditions
- Determine the ultimate capacity of compression members taking into account both yielding and buckling
• 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 tresses 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
• Provisions of the Building Code of Australia (BCA)
• 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 serviceability
• Design of welded connections for fillet and butt welds
• Analysis of bolt and weld groups
• Column base plates
• Steel detailing.

Textbooks and Notes
Standards Australia, Handbook 4B Steel Structures Design Handbook, 1999. (to be purchased before week 3 of the semester)
Lecture and study notes as provided by course coordinator.

Recommended reading
Hibbeler, R.C., Structural Analysis, 4th edn, Prentice Hall.

HES3150 Geotechnical Engineering
12.5 Credit Points • 1 Semester • 60 Hours • Prerequisite: HES1125
Mechanics of Structures, HES2120 Structural Mechanics, HES2131 Topographical Engineering, HES2136 Road Engineering, HES2340 Fluid Mechanics • Teaching methods: Lectures (36 Hours), Tutorials (24 Hours) • Assessment: Oral Presentation (10%), Major Assignment (10%) Minor Assignment (5%) Examinations (60%), Class tests (15%)
A subject in Bachelor of Engineering (Civil), and Bachelor of Engineering (Civil)/Bachelor of Business.

Aims & Objectives
During this subject we aim to introduce engineering students to the fundamentals and basic techniques used in geotechnical engineering. This subject 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 subject, 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.
• 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 AS2670 for various site/soil 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 analyse 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 (20%)
• 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.

Bearing Capacity and Design of Shallow Foundations (25%):
Subject Details

Aims & Objectives

To develop the ability to determine a system's transfer function and performance characteristics using theoretically and experimentally derived data.

To determine transfer functions from response data for systems having a single input and output.

To develop an understanding of the operational behaviour of a wide range of control systems.

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

To work as a trainee under the direction of a professional and be an effective part of a multidisciplinary team.

To establish and refine personal development skills in order to develop competence towards the professional level.

To implement and gain further understanding of management skills and practices operating within organisational structures.

To observe and appreciate significant trends in employment work groups and industrial relations.

To understand and apply quality control and assurance techniques.

References

As suggested by the Swinburne academic supervisor to support the student's task environment.

HES3310 Industry-Based Learning

50 Credit Points • 1 Semester • Full • Hawthorn • Prerequisite: Completion of 5 Semesters • Teaching methods: Industrial Practice, Industry Supervision, Academic Supervision • Assessment: Satisfactory achievement of employer requirements. Satisfactory report covering the period of Industry-Based Learning experience.

A subject in the Bachelor of Engineering (Civil), Bachelor of Engineering (Mechanical), Bachelor of Engineering (Product Design), Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Civil) / Bachelor of Business, Bachelor of Engineering (Mechanical) / Bachelor of Business.

Aims & Objectives

To implement and gain further understanding of management skills and practices operating within organisational structures.

To observe and appreciate significant trends in employment work groups and industrial relations.

To understand and apply quality control and assurance techniques.

To develop and document professional practice for all assignments and to communicate professionally in written and oral forms.

To develop and document personal development skills in order to develop competence towards the professional level.

To complete 12 weeks of full-time paid employment in an appropriate industrial setting.

To work as a trainee under the direction of a professional and be an effective part of a multidisciplinary team.

To establish and refine personal development skills in order to develop competence towards the professional level.

To implement and gain further understanding of management skills and practices operating within organisational structures.

To observe and appreciate significant trends in employment work groups and industrial relations.

To understand and apply quality control and assurance techniques.

References

As suggested by the Swinburne academic supervisor to support the student's task environment.

Aims & Objectives

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.

At the completion of this subject, students should be able to:

To develop the ability to determine a system's transfer function and performance characteristics using theoretically and experimentally derived data.

To develop an understanding of the operational behaviour of a wide range of control systems.

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.

At the completion of this subject, students should be able to:

To develop the ability to determine a system's transfer function and performance characteristics using theoretically and experimentally derived data.

To develop an understanding of the operational behaviour of a wide range of control systems.

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.

At the completion of this subject, students should be able to:

To develop the ability to determine a system's transfer function and performance characteristics using theoretically and experimentally derived data.

To develop an understanding of the operational behaviour of a wide range of control systems.

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.

At the completion of this subject, students should be able to:

To develop the ability to determine a system's transfer function and performance characteristics using theoretically and experimentally derived data.

To develop an understanding of the operational behaviour of a wide range of control systems.
• 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

Textbook

Recommended reading

HES3334 Thermofluid Systems
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HET2124 • Teaching methods: Lectures (24 hours), Tutorials (24 hours), Laboratory (4 hours); Class Tests (4 hours) • Assessment: Pracs Class & Lab Report (20%), Tests (20%), Examination (60%)

A subject in the Bachelor of Engineering (Product Design), and an elective Bachelor of Engineering (Robotics & Mechatronics)

Aims & Objectives
During the course we aim:
• to introduce the fundamentals of thermodynamics.
• to develop the ability to use thermodynamics in product design.
• to introduce the fundamentals of fluid mechanics.
• to develop the ability to use fluid mechanics in product design.
• to 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.
• to develop control volume approach that based on fundamental principle such as conservation of mass and energy
• to articulate the linkage between theory and various practical applications
• to know the thermal efficiency of all basic engineering systems and thermodynamic cycles
• to know the basic principles of fluid mechanics

• to recognise the complexity involved in various fluid flow systems
• to know three basic modes of heat transfer (Conduction, Convection and Radiation)
• to 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, Boussinesq’s equation, momentum, continuity, dimensional analysis, drag and lift, scaled models, applications to product design.
• Heat Transfer (20%): Mechanism of Heat Transfer, Steady Heat Conduction, Heat Exchangers

Textbook

References

HES3350 Machine Design
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Completion of 1st Year, plus HES2124 • Teaching methods: Web-based subject presence (Blackboard); Lectures (24 hours); Tutorials (24 hours); Competitive Projects.

A subject in: Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical /Business, Bachelor of Engineering (Product Design Engineering), Bachelor of Engineering (Robotics and Mechatronics), and Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & 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%)
To introduce the fundamental principles of ergonomics (human factors).

During the course, we aim:

Bachelor of Engineering (Product Design).

Science (Computer Science & Software Engineering), and an elective in the:

Mechatronics), and Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Engineering (Mechanical)/Bachelor of Business, Bachelor of Engineering (Robotics and Mechatronics)/Bachelor of Business.

12.5 Credit Points 1 Semester 60 Hours  Hawthorn  Prerequisite: Completion of 1st Year  Teaching methods: Web-based subject presence (Blackboard); Lectures; Tutorials; Laboratory; Assignments  Assessment: Examinations (50%), Group Assignment (25%), Individual Assignment (25%)

A subject in the: Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical)/Bachelor of Business, Bachelor of Engineering (Robotics and Mechatronics), and Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering), and an elective in the:

Bachelor of Engineering (Product Design).

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

After completing 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%)

Functional description of musculoskeletal structure of the human body and human performance

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

Vibration: Effect of vibration on human beings, methods of improvement and use of standards

Engineering Psychology (25%)

Cognitive processing concepts, reaction time, psychophysics and signal detection theory.

Controls and displays, and use of screen based equipment.

Introduction to task evaluation and workplace design principles (25%)

Manual handling problems, use of regulations and codes of practice, case studies

Use of screen-based equipment including keyboards, monitors and furniture

Introduction to higher level analysis such as NASA TLX and VPA

Laboratory work (10%)

Anthropometry, noise and light measurement, choice and simple reaction time, thermal conditions, manual handling

Textbook

There is no set textbook for this subject, but the books listed below will be useful. Additional materials will be recommended in lectures and tutorials.

Recommended Texts


Kroemer, K.H.E., Grandjean, E., Fitting the Task to the Human, Taylor and Francis, 1997


Journals
Students will be expected to review material in the professional journals. Examples of journals include: Ergonomics, Applied Ergonomics, Human Factors and Ergonomics.

Other journals will be recommended in lectures and tutorials.

HES3380 Engineering Management 1
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Completion of 1st Year • Teaching methods: Web-based subject presence (Blackboard); Lectures; Tutorials; Assignments • Assessment: Assignments (40%), Examinations (40%), Participation (20%)

A subject in the Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Civil), Bachelor of Engineering (Mechanical), Bachelor of Engineering/Bachelor of Science (Biotechnology), Bachelor of Engineering (Robotics & Mechatronics), and Bachelor of Multimedia (Networks & Computing)

Aims & Objectives
During the course, we aim:
• To provide a foundation engineering management skill set to prepare candidates for their professional careers.
• To begin the preparation of engineering students for a world in which successful engineering requires more than the straight-forward solution to clean-cut problems and demands the exercise of broad-based knowledge, skills and judgement.
• To introduce the multi-disciplinary nature of management and the profession of engineering.

At the end of this subject students will be able to:
• 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
• employ 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
• 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

Content
• Engineer and society (24%). Australian industrial society, national technical-scientific policies, engineer and society, environment, sustainability and community, engineer as a change agent in OHS & innovation and competition, engineering ethics, professional practices, organisations and societies.
• Introduction to engineering management (16%). Evolution of engineering management thought, functions of technology management, managing technology and its elemental parts, engineering management processes.
• Managing people (25%). Engineering supervision and management, decisions, orders and instructions, authority, responsibility and delegation, accountability in areas of engineering endeavour. Division of work: organisation principles, objectives and structure. Design of technical organisations for engineering projects and enterprises. Power and influence in organisations: politics stake-holders, pressure groups, group dynamics, group motivation and morale.
• Organisation behaviour (35%). Attitudes, motivation, leadership and morale within technical teams. Organisation culture, change and group dynamics. Organisation for OH&S. Interpersonal skills: self awareness, listening, goal setting, providing feedback, running meetings, delegating, persuading, politicking, coaching, team building, conflict management, resolving conflicts.

Textbooks

References

HES3500 Industry-Based Learning
50 Credit Points • 1 Semester • Full-time Employment in Industry for 24 Weeks • Hawthorn • Prerequisite: All Year 1 & 2 Subjects • Teaching methods: Industrial Practice, Industry Supervision, Academic Supervision • Assessment: Satisfactory achievement of employer requirements. Satisfactory report covering the period of Industry-Based Learning experience.

A subject in the Bachelor of Science (Biochemistry), Bachelor of Science (Biochemistry)(Honours), Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology)(Bachelor of Business, and Bachelor of Science (Psychology/ Biochemistry).

Aims & Objectives
• To complete 24 weeks of full-time paid employment in an appropriate industrial setting.
• To work as a trainee under the direction of a professional and be an effective part of a multi-disciplinary team.
• To develop and document professional practice for all assignments and to communicate professionally in written and oral forms.
• To establish and refine personal development skills in order to develop competence towards the professional level.
• To implement and gain further understanding of management skills and practices operating within organisational structures.
• To observe and appreciate significant trends in employment work groups and industrial relations.
• To understand and apply quality control and assurance techniques.

Content
Work requirements are established by the employer in consultation with Swinburne staff.

References
As suggested by the Swinburne academic supervisor to support the student’s task environment.
HES3515  Industry-Based Learning
50 Credit Points • 1 Semester • Hawthorn • Prerequisite: All second year subjects
Aims & Objectives
• 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 an accredited environment health practitioner 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 an environmental health staff of the University.

References
As suggested by the academic and placement supervisors to support the student’s progress and professional development.

HES4126  Structural Engineering
12.5 Credit Points • 1 Semester • 48 hours • Hawthorn • Prerequisite: HES1125, Mechanics of Structures, HES2120 Structural Mechanics, HES2125 Design of Concrete Structures, HES3121 Design of Steel Structures • Teaching methods: Lectures (24 hrs), Tutorials (18 hrs), Assignment (4 hrs), Case Study (2 hrs), Web Based Subject Presence (Blackboard) • Assessment: Examinations (75%), Design Project (25%)
Aims & Objectives
The aims of this subject 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 tilt-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 subject 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

HES3700  Industry-Based Learning
50 Credit Points • 24 Weeks • Hawthorn • Prerequisite: All Subjects in Years 1 & 2
Aims & Objectives
• 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 an accredited environment health practitioner 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 an environmental health staff of the University.

References
As suggested by the academic and placement supervisors to support the student’s progress and professional development.

HES4136  Transport Engineering
12.5 Credit Points • 1 Semester • 54 Hours • Hawthorn • Prerequisite: HES1125, Mechanics of Structures, HES2120 Structural Mechanics, HES2125 Design of Concrete Structures, HES3121 Design of Steel Structures • Teaching methods: Lectures (36 hours); Tutorials/Assignments (4 hours); Students will be given time to work collaboratively on team-based projects; Web-based subject presence (Blackboard) • Assessment: Examination (60%), Team based projects (40%)
Aims & Objectives
The aims of this subject are to:
• Design of Timber Structures
  • Timber characteristics, grading and properties
  • Design of tension members
  • Design of compression members
  • Design of bending members in shear, bearing and flexure
  • Combined actions
  • Design of connection using screws, nails and bolts
• 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
  • Techniques in repairing and strengthening concrete structures

Textbooks and Notes
Standards Australia, Handbook 2.2 Australian Standards for Civil Engineering Students Part 2: Structural Design, 2002. (Same text book used in HES2125 and HES3121) Lecture and study notes as provided by course coordinator.

Recommended reading
Concrete Institute of Australia, C/IA 248-2002 Precast Concrete Handbook: Standards Australia, AS 3850-1990 Tilt-up Concrete and Precast Concrete Elements for Use in Buildings.
Standards Australia, HB 84-1996 Guide to Concrete Repair and Protection.
Standards Australia, AS1720-1997 Timber Structures.

HES4136  Transport Engineering
12.5 Credit Points • 1 Semester • 54 Hours • Hawthorn • Prerequisite: HES1125, Mechanics of Structures, HES2120 Structural Mechanics, HES2125 Design of Concrete Structures, HES3121 Design of Steel Structures • Teaching methods: Lectures (36 hours); Tutorials/Assignments (4 hours); Students will be given time to work collaboratively on team-based projects; Web-based subject presence (Blackboard) • Assessment: Examination (60%), Team based projects (40%)
Aims & Objectives
The aims of this subject are to:
• Design of Timber Structures
  • Timber characteristics, grading and properties
  • Design of tension members
  • Design of compression members
  • Design of bending members in shear, bearing and flexure
  • Combined actions
  • Design of connection using screws, nails and bolts
• 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
  • Techniques in repairing and strengthening concrete structures

Textbooks and Notes
Standards Australia, Handbook 2.2 Australian Standards for Civil Engineering Students Part 2: Structural Design, 2002. (Same text book used in HES2125 and HES3121) Lecture and study notes as provided by course coordinator.

Recommended reading
Concrete Institute of Australia, C/IA 248-2002 Precast Concrete Handbook: Standards Australia, AS 3850-1990 Tilt-up Concrete and Precast Concrete Elements for Use in Buildings.
Standards Australia, HB 84-1996 Guide to Concrete Repair and Protection.
Standards Australia, AS1720-1997 Timber Structures.
Aims & Objectives

During the course we aim:

- 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 un-signalised 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 subject area and identify current best practice research and literature.
- To develop mathematical knowledge and skills appropriate to the content area.

At the end of this subject 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 un-signalised 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 designing 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.

References

- Text
- Subject notes posted on Blackboard

Recommended reading

- Underwood, R.T., Road Engineering Practice, 1985.
- www.sciam.com/1097issue/1097rillings.html
- www.itsonline.com/index.htm

HES4146 Water & Environmental Engineering

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES2340 Fluid Mechanics 1, and HES3111 Urban Civil Design • Teaching methods: Consultation, Projects, Field trips, Web Based subject Presence (Blackboard) • Assessment: Consultation, Oral Presentation, Literature Review

A subject in the Bachelor of Engineering (Civil), and Bachelor of Engineering (Civil)/Bachelor of Business

Aims & Objectives

During the course we aim:

- To prepare students in a professional team-working environment.
- To direct students to appropriate resources and recognise 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 experience peer reviewed oral presentations.
- To develop student’s confidence in public speaking and enhance communication skills.

At the end of this course students will be able to:

- Plan, manage, coordinate and deliver water and environmental projects from start to finish.
- Integrate sustainability theme in the project appropriately and practically.
- Identify problems in the project and consult productively amongst group members.
- Examine and assess the validity of supplied 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.

References

- Department of Sustainability and Environment: Water, www.nre.vic.gov.au
HES4250 Design for Manufacture

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Completion of Intermediate studies • Teaching methods: Lectures (36 hours); Laboratory (12 hours); CAD • Assessment: Assignments (40%), Examination (60%)

A subject in: Bachelor of Engineering (Product Design), and an elective in the Bachelor of Engineering (Robotics & Mechatronics).

Aims & Objectives

During the course, we aim:

- To provide an understanding of the importance of Design for Manufacture in manufacturing industry
- To develop a competence in the design of tooling, robot grippers, design for assembly and quality control systems.
- To give students the opportunity to develop an understanding of die design and heat transfer mechanisms.
- To provide students with the opportunity to experience peer reviewed oral presentations.
- To develop computer aided drafting skills for design purpose.

At the completion of this subject, 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.
- Die design (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.

References


HES4280 Manufacturing Technology 2

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Completion of Intermediate studies • Teaching methods: Lectures (40 hours); Laboratory (4 hours); 2 practical laboratories on: i) Plastic rheology; ii) Metal extrusion; Industry Visit (4 hours) • Assessment: Assignments (10%), Examinations (80%), Lab Reports (10%)

A subject in the Bachelor of Engineering (Product Design) and an elective in the Bachelor of Engineering (Mechanical).

Aims & Objectives

During the course, we aim:

- 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 subject, students should be able to:

- Demonstrate knowledge of bulk and sheet metal forming processes.
- Analyze, 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, cavities dimensions, swelling considerations. Film moulding: output die requirements, material output consideration, freeze line analysis.

Textbook


References


HES4300 Industry-Based Learning

50 Credit Points • 1 Semester • Full • Hawthorn • Prerequisite: Completion of 5 Semesters, plus 1st Semester of IBL • Teaching methods: Industrial Practice, Industry Supervision, Academic Supervision • Assessment: Satisfactory achievement of employer requirements. Satisfactory report covering the period of Industry-Based Learning experience.

A subject in the Bachelor of Engineering (Civil), Bachelor of Engineering (Mechanical), Bachelor of Engineering (Product Design), Bachelor of Engineering (Robotics & Mechatronics, Bachelor of Engineering (Civil)/Bachelor of Business, Bachelor of Engineering (Mechanical)/Bachelor of Business.
Aims & Objectives

- To complete 24 weeks of full-time paid employment in an appropriate industrial setting.
- To work as a trainee under the direction of a professional and be an effective part of a multidisciplinary team.
- To develop and document professional practice for all assignments and to communicate professionally in written and oral forms.
- To establish and refine personal development skills in order to develop competence towards the professional level.
- To implement and gain further understanding of management skills and practices operating within organisational structures.
- To observe and appreciate significant trends in employment work groups and industrial relations.
- To understand and apply quality control and assurance techniques.

Content

Work requirements are established by the employer in consultation with Swinburne staff.

References

As suggested by the Swinburne academic supervisor to support the student’s task environment.

HES4330 Thermodynamics 2

12.5 Credit Points  
1 Semester  
48 Hours  
Hawthorn  
Prerequisite: HES2330 or equivalent  
Teaching methods: Web-based subject presence (Blackboard); Lectures; Tutorials; Laboratory; Assignments; Assessment: Assignments, Examinations, Projects

A subject in the Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical)/Bachelor of Arts, Bachelor of Engineering (Mechanical)/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.
- 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.

At the end of this subject students will:

- demonstrate an understanding of the heat transfer process and numerical heat transfer with computer applications.
- demonstrate an appreciation of the design principles in thermo-fluid systems.
- demonstrate 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.
- Conduction Equation (10%)
- Heat Conduction in plain walls, thermal contact resistance, resistance networks, heat conduction in cylinders and spheres, critical radius of insulation, finned surfaces.
- Boundary Conduction (8%)
- Heat conduction in plain walls, thermal contact resistance, resistance networks, heat conduction in cylinders and spheres, critical radius of insulation, finned surfaces.
- Laboratory (16%)
- Lump 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 exchangers, the Log-Mean-Temperature-Difference method, the effectiveness-NTU method

Textbook


References


HES4350 Mechanical Systems Design

12.5 Credit Points  
1 Semester  
48 Hours  
Hawthorn  
Prerequisite: HES3350  
Teaching methods: Web-based subject presence (Blackboard); Lectures (24 hours); Tutorials (24 hours); Design Projects; Design Assignments; Assessment: Design Project (30%), Assignment (20%), Examination (50%)

A subject in the Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical)/Bachelor of Arts, and Bachelor of Engineering (Mechanical)/Bachelor of Business.

Aims & Objectives

During the course, we aim:

- To develop advanced mechanical design skills applied to more complex and diverse engineering systems.
- 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 (20%)
- Design process
- Design specifications
- Engineering requirements
- Design targets and value analysis
- Australian and international standards
- Codes of practice and regulations
- Introduction to system modelling
- 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, load estimation; energy balance
Aims & Objectives

- To plan experiments to achieve stated goals and validate the results.
- To develop problem solving skills by attempting to identify compounds from experimental data and spectra.
- To learn new and reinforce previously learnt experimental techniques, while doing experiments related to topics in the HES4500 lectures.
- 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

- Qualitative analysis of an unknown liquid mixture using distillation, physical measurements, infrared spectra, PMR spectra, CMR 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.

References

HES4510 Practical Manual, Swinburne Press.

HES4520 Advanced Chemistry 1

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES2520 • Teaching methods: Lectures and Practical Laboratory • Assessment: One or two topics will be examined during the semester. Each topic is worth 25% and all topics will have an examination. Some topics may also include a contribution from an assignment.

A subject in the Bachelor of Science (Biotechnology), Bachelor of Science (Biochemistry).

Aims & Objectives

- To predict the NMR and MS spectra of organic compounds and deduce structural information from spectra.
- To study the general principles of colloid chemistry.
- To be confident and competent using a personal computer with the software packages DDS, Windows, Excel, Word, Access, ChemWindows and a web-browser to access, manipulate and analyse scientific data.

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; Complications in PNIR spectra; FT instrumentation (IR and NMR);
- Analysis of CMR spectra; Principles of MS; MS instrumentation;
- Interpretation of mass spectra.

Colloid Chemistry:
- Characterisation of nanoparticles: particle size and surface charge; The nature and stability of dispersions, emulsions and foams; Coagulation and flocculation; Biocolloids – liposomes, vesicles, bacteria and viruses – their physical properties, structure and colloid characterisation; Applications of colloid systems, e.g. drug delivery; The measurement of surface charge and particle size; How to make and how to destroy a dispersion.

Computers in Chemistry:
- Data access using the World Wide Web, including bioinformatics and access to relevant databases; Creation of organic diagrams; Prediction of pH, end points; Statistical treatment of chemical data using Excel; Errors, normal distribution, confidence limits, significance tests, lines and curves of best fit and quality control charts; Methods of noise reduction.

References

Computers in Chemistry (printed notes), Swinburne Press.
Bowater, I.C., NMR and MS (printed notes), Swinburne Press
Harding, I.H., Colloid Science (printed notes), Swinburne Press.

HES4525 Advanced Chemistry 2

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES2520 • Teaching methods: Lectures and Practical Laboratory • Assessment: Assignments, Examinations

A subject in the Bachelor of Science (Biotechnology), Bachelor of Science (Biochemistry).

Aims & Objectives

- 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.

Content

Surface Chemistry: This unit will introduce the basic principles of surface and colloid chemistry by reference to the properties and applications of commonly
encountered liquid surfaces and interfaces. Topics, including surface tension measurement, adsorption at interfaces and contact angle measurement to assess solid surface properties, will be discussed and applied to commonly encountered systems, both in the household and industry.

Electrochemistry: A study of fundamental thermodynamic and kinetic principles of modern electrochemistry and the application of these principles to common industrial applications of electrochemistry. Faraday’s law, Nemst equation, Butler-Wilson equation, mass transport limitations of electrochemical cells. Applications include selections from: electrosynthesis (organics, C12, A1), batteries, fuel cells, bioelectrochemical phenomena, sensors, water and waste purification, metal refining, machining and corrosion.

Stereochemistry: To understand the relationship between structure and properties of organic molecules. Stereoisomerism, conformational analysis, organic reactions. Selectivity, prochirality, topic, current topics.

Molecular Modelling: The study of the geometry and properties of molecules by computer-aided techniques.

References
The references for each topic will be advised by the lecturer concerned.

HES4621 Advanced Biochemistry
12.5 Credit Points  1 Semester  60 Hours  Hawthorn  Prerequisite: HES2621, HES2626  Teaching methods: Lectures, Set Exercises, Selected Web Resources  Assessment: Examination 80%, Test 20%

A subject in the Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology)/Bachelor of Business, Bachelor of Science (Psychology)/Biochemistry, Bachelor of Science (Biochemistry)/Honours, and Bachelor of Science (Biotechnology)/Bachelor of Arts (Media & Communications)

Aims & Objectives
The aim is to provide students with a depth of knowledge of a number of selected topics in biochemistry that will relate to and build upon the foundations laid in second-year subjects. Two themes are explored: biochemistry of human diseases and the techniques that underpin the developments of molecular biology and biotechnology.

Content
- Human Biochemistry: Biochemical basis of selected functions (e.g. exercise, metabolic regulation), biochemical basis of certain diseases (e.g. AIDS), clinical biochemistry.
- Analytical Biochemistry: Protein chemistry techniques, molecular biology techniques, purification techniques, introductory bioinformatics.

References

Specific references, websites.

HES4626 Biotechnology
12.5 Credit Points  1 Semester  60 Hours  Hawthorn  Prerequisite: HES2621, HES2626

A subject in the Bachelor of Science (Biotechnology), Bachelor of Science (Biotechnology)/Bachelor of Business, Bachelor of Science (Psychology)/Biochemistry, Bachelor of Science (Biochemistry)/Honours, and Bachelor of Science (Biotechnology)/Bachelor of Arts (Media & Communications)

Aims & Objectives
In this subject students will learn how basic science is applied in biotechnology to the development of products, process and services. Students will also learn about the role of biotechnology in preserving/improving the environment and sustainability. Students will also be introduced to ethical issues in relation to biotechnology.

Content
- Genetic engineering of microbes, plants and mammalian cells: methodology 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.

References
Aims & Objectives
The aim is to allow students to develop laboratory-based inquiry skills in a relatively unstructured environment, using the techniques acquired in first semester (HES4640) 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
Lab-based biochemical research project.

References
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: HES4715 • Teaching methods: Lectures, Class Discussion • Assessment: Assignments, Tests
A subject 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.

References

HES4705 Research Project
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES4700 • Teaching methods: Staff/Student Consultation • Assessment: Project report
A subject 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 subjects.
- 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.

References
As required by the specific research project.

HES4715 Health Planning and Promotion
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: Lectures, Group Work • Assessment: Assignments, Group Work, Tests
A subject in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
- 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.

References

HES4720 Environmental Management
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: Lectures, Field Visits • Assessment: Assignments, Examinations, Tests
A subject in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
- To study major causes and effects of environmental pollution.
- To examine the dangers inherent in the use hazardous substances and control measures required to minimise or eliminate hazards.
- To study the effects of soil contamination and remedial measures available.

Content
- Basic ecology, "indicator" organisms and their role in ecosystems, nutrient cycles and the effects of imbalances, biological effects of heavy metals contamination, sewage treatment, biological aspects of soil remediation.
- Hazardous substances and hazardous waste overview, types of hazardous substances and associated environmental and health hazards including class labelling of dangerous goods, material safety data sheets, human and ecotoxicity, environmental chemical processes in the unpolluted environment (air, water and soil). Current environmental issues, including greenhouse effect, ozone depletion, photo chemical pollution, acid rain.
- Contaminated sites, including sources of contamination, organics, heavy metals, site remediation, including vapour extraction, bioremediation, stabilisation, soil washing, cap and contain, removal and disposal.
- Environmental auditing.
- Use of process flow diagrams. Simple process calculations. Disposal and disposal of pollutants (air, water, and land).

References
Manahan, S.E., Hazardous Waste, Chemistry, Toxicology & Treatment, Chelsea Lewis, 1990.
HES4725 Occupational Health and Safety
A subject in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
- 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.
- Fire and explosion.
- Chemical safety in the workplace.
- Handling, hazard identification.

References

HES4730 Food Safety 2
A subject in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
- 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).

References
ANZFA, Food Standards Code (As amended).

HES4740 Environmental Control
A subject in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
- 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.
- 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.

References
NH&MRC, Australian Drinking Water Guidelines, 1996.

HES4900 Air Transport Pilot Licence 2
A subject in the Bachelor of Technology (Aviation) and Bachelor of Technology (Aviation)/Bachelor of Business.

Aims & Objectives
To provide 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. To provide knowledge of human performance and limitations relevant to Airline operations.

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 navais; Calculation of track and ground speed.

Area Navigation Systems:
Types of systems; General principles; RNAV systems; inertial navigation systems; VLF/OMEGA; Satellite navigation systems; Updating area navigation systems.

High-Altitude Meteorology:
Structure of the atmosphere; Pressure temperature and density; Humidity; Clouds and their 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; Airframe icing; Engine icing; Reports of icing; Properties of air masses; Classification of air masses; Basic synoptic 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; Monsoonal weather; Tropical storms; Meteorological observation methods; Q codes; In-flight observations; Satellite observations.

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.

References
Thom, T., Aviation Human Factors, Aviation Theory Centre.
Civil Aviation Safety Authority, Civil Aviation Orders.
Civil Aviation Safety Authority, Aeronautical Information Publication.
Civil Aviation Safety Authority, ATP Flight Syllabus.

HES4905 Air Transport Pilot Licence 3
12.5 Credit Points • 1 Semester • 72 Hours • Hawthorn • Prerequisite: CASA CPL (A) Examination Credit • Teaching methods: Classroom • Assessment: Examination 70% Assessed work 30%. Candidates must in addition have achieved a CASA CPL to receive a pass in this subject.
A subject in the Bachelor of Technology (Aviation), Bachelor of Technology (Aviation)/Bachelor of Business.

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 the flight rules and procedures applicable to IFR flight.

Content
Airframe and Systems: Flight controls, landing gear, actuating systems, air conditioning and pressurisation, ice and rain protection, fuel systems, electrical systems.
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.

HES4915 Crew Resource Management and Instructional Techniques
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HES2910 (desired but not mandatory) • Teaching methods: Classroom • Assessment: Examination 80% Assignment 30% Presentation 10%.
A subject in the Bachelor of Technology (Aviation), Bachelor of Technology (Air Transportation Management), and an elective in the Bachelor of Technology (Air Transportation Management)/Bachelor of Business, and Bachelor of Technology (Aviation)/Bachelor of Business.

Aims & Objectives
To develop further understanding of aviation human factors with emphasis on the psychology of learning and the importance of practical human factors training programs, such as Crew Resource Management (CRM) in aviation.
To provide an understanding of the history, evolution and techniques of CRM training.
To examine the theoretical aspects and practical applications of the psychology of learning.
To enhance teamwork and leadership skills.

Content
Basic learning theories.
Conditioning and learning.
Memory and forgetting.
Language and thought.
Thinking and problem-solving.
Optimising learning.
Instructional techniques.
Understanding human error.
Crew Resource Management.
• CRM overview.
• CRM in practice.
• Extending CRM beyond the cockpit door.
• Organisational Resource Management.
• CRM research and evaluation.
• Cross-cultural perspectives.
• Situational awareness and decision-making.
• Contemporary problems in automation management.
• Hazardous attitudes.
• Error management.

Textbook

References
Dietz, A., Thoms, T., Pilots, Personality and Performance.

HES4960 Aviation Project

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Completed a substantial part of the 2nd-year subjects of the course. • Teaching methods: Classroom • Assessment: Assessed work 100%

A subject 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.

Content
Major private research exercise in the field of aviation and presentation to a group forum for critical appraisal.

References
Lambers, et al., Writing Technical Reports and Essays, Swinburne University of Technology.

HES4980 Aviation Facilities Management and Contemporary Issues

12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures 2 hours, Tutorial/Project 3 hours • Assessment: Examination 50%, Assignments/tutorial/project 50%

A subject 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 a detailed understanding of the requirements for managing aviation and similar business facilities.

Content
A range of issues are addressed to enable students to understand management related to keeping airline and operator organisations safe, reliable, legally compliant and profitable. While examining each issue in detail the ever-pervading aspect of related information technology must be addressed. This is examined in a total aviation context and perspective. In aviation, time and safety is the essence and thus the accuracy of information systems, particularly when the thrust needs to be balanced with economic operations, is paramount.

While all aspects in the course outline are related to organisational effectiveness the matter of economic deregulation, airline alliances, code sharing, and marketing are examined also. Other very important issues include fuel integrity and management, Extended Twin Engine Operations, air cargo, total security and related issues, emergency management and risk management and related insurance implications.

Flight simulation is a highly important example of information technology, particularly as it relates to artificial intelligence and security. The cost-effectiveness of flight simulators is becoming extremely important as the Civil Aviation Safety Authority (CASA) permits, in ‘approved’ cases, that this type of technology may be credited towards approved flying hours in lieu of actual flying. Naturally, the security, safety and reliability of such systems is paramount and that it accurately simulates actual flying conditions.

General management procedures and practices in aviation and related organisations must be efficient. Errors of judgment in any department can lead to safety problems, hence the need for optimum overall efficiency and due diligence in all aspects of aviation. Information Technology is an important element in this subject and pervades the total management structure of aviation.

This subject includes the theory of information systems, including the use of Microsoft Access (using ‘North Wind’ Database examples) together with practical aviation examples, thus giving a strong theoretical and practical base.

Flight simulation; Fuel; Importance of quality, integrity and supply and its management; Extended Twin Engine Operations (ETOPS); Air cargo operations; Airport development and planning; Security: Airport: passenger/visitor/others screening, Aircraft: on ground and on board; International conventions and national laws; Emergency management; Risk management/aviation insurance; Safety systems; Quality management, auditing; Human factors: stress/fatigue and flight time limitations schemes; Economic deregulation; Contemporary issues; Airline alliances; Code-sharing; Computer reservation systems; Marketing.

Textbook

References
Smith, Michael J.T., Aircraft Noise, Civil Aviation Safety Authority.
Anon, Safety Oversight Manual DOC934-AN958, ICAO.
Anon, ASSP Manual, CASA.

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 subject in the Bachelor of Technology (Aviation), Bachelor of Technology (Air Transportation Management), and and elective in: Bachelor of Technology (Aviation) /Bachelor of Business; and Bachelor of Technology (Air Transportation Management)/Bachelor of Business.
Aims & Objectives
To equip both non-flying and flying graduates with the skills to operate effectively in an International Civil Aviation Organisation (ICAO) model airspace.

Content
The subjects studied in detail in this subject will be drawn from the following:
- The establishment of airspace including the services provided.
- Aircraft performance and air traffic services.
- Navigation charges and flow management.
- The Australian Advanced Air Traffic System.
- Future air navigation systems.

Textbooks

References
Airservices Australia, Aeronautical Information Publication Text.

HES4990 Aviation Law
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil •
Teaching methods: Lectures 2 hours, Assignments/Tutorials 3 hours • Assessment: Examination 50%, Assignments/tutorials 50%
A subject 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 Australian aviation legal system and extending this into the international scene, particularly as to how national and international flying and organisation and business operation may be affected. To provide an understanding of common law and its relationship with aviation law such as with aircraft accident and incident investigations, as well as coronial inquiries.

Content
- World aviation organisations (ICAO/IATA).
- Chicago Convention, including Annexes.
- Air service agreements.
- Standards.
- Australian legal system.
- Government operational requirements.
- Professional liability.
- Business operations.
- Both at the organisation structural and operational levels and related legal responsibilities aviation insurance.
- Contracts (both national and international) including leasing and purchase of aircraft, facilities and personnel aircraft ownership.
- Passenger safety and security.

References
Bartsch, R., Aviation Law in Australia, LBC Information Services, 1996.
Hutcheson, S., Introduction to Air Transport; Aviation Training International, Maroochydore, Queensland, 1996.

HES5106 Research Project
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Total completion of the course up to the end of third year and substantial completion of fourth year • Teaching methods: Web-based subject presence (Blackboard); Lectures; Oral presentations; Project-based learning • Assessment: Literature Review; Oral Presentation; Major Research Report; Student Performance

A subject in the Bachelor of Engineering (Civil), Bachelor of Engineering (Civil)/Bachelor of Business, Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical)/Bachelor of Arts, and Bachelor of Engineering (Mechanical)/Bachelor of Business.

Aims & Objectives
During the course we aim:
- 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
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
Further references as recommended by the supervisor to support the student’s project.

HES5175 Cost Engineering
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: HES2125
Teaching methods: Blackboard/whiteboard presentations; Overhead transparencies; Videos for construction aspects of major projects, with discussion and questionnaire; Individual assignments, some class-wide and some unique to the individual • Assessment: Assignments, Tutorials
A subject in the Bachelor of Engineering (Civil)

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 subject 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, NPWF, 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 - 1982 Method of measurement of civil engineering works and associated building works, and prepare 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 and
- 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 4360-1999), 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 Standard Conditions 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

References

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 (eg 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 • Prerequisite: Total completion of the course up to the end of third year and substantial completion of fourth year with passes in HES4126 Structural Engineering & HES4146 Water and Environmental Engineering • Teaching methods: One hour each week lecture/ briefing session; 20-minute consultation per group per week; Total student time spent on the project per week - 10 hours; Web-based subject presence (Blackboard) • Assessment: Oral Presentation, Major Design Project Based Report

A subject in the Bachelor of Engineering (Civil), and Bachelor of Engineering (Civil)/ 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
- To develop the techniques and principles for the evaluation and assessment of design projects
- To apply such knowledge to a practical design situation, analysing the techniques and data required
- To enable students to appreciate and evaluate the impact of construction and maintenance on design
- To further develop team work skills
- To independently organise a team to achieve specified objectives within time constraints
- To review your teams work, including comment and editing
- To gain further experience in the design process, working in a consultative environment
- To produce reports of high standard, suitable for presentation to industry

At the end of this course students will be able to:

- To synthesise knowledge gained in previous years in the course
- To analyse a complex problem and propose feasible solutions
- To understand the influence of non technical factors on engineering decision making
- To develop skills in planning and executing a design project.
- To develop skills in writing a major design 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.

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 subject 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

HESS191 Infrastructure Deterioration and Assessment

12.5 Credit Points • 1 Semester • 48 hours • Hawthorn • Prerequisite: Completed three and substantially completed fourth year of the Civil Engineering degree program, including HES4138 Transport Engineering and HES4146 Water and Environmental Engineering • Teaching methods: Lectures (24 hours), Tutorials/ Workshops/site visit (10 Hours); Laboratories (6 Hours); Assignments and consultations (8 Hours); Web-based subject presence (Blackboard) • Assessment: Examinations (80%), Team-based Projects (40%)

A subject in the Bachelor of Engineering (Civil), and Bachelor of Engineering (Civil)/ Bachelor of Business.
Aims & Objectives
During the course we aim:

- Develop understanding of the deterioration mechanisms of the structural components and services of 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 will 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 gained knowledge in assessing the health and/or services of an infrastructure using the appropriate performance measures and identify those reached the terminal levels for maintenance or rehabilitation.
- To identify the differences between the practices locally and internationally in infrastructure assessment and the limitations in developing reliable deterioration models.
- To independently organise a team to achieve specified objectives within time constraints and produce reports of high standards.
- Demonstrated ability to use modeling techniques such as bi-variate and multiple regression and neural network analyses in developing deterioration models, explain and report the significance of any parameter included in a deterioration model of an infrastructure, how the model reliability is affected and assessed.
- Develop an understanding of the negative impacts deteriorated (functional and structural deterioration) civil infrastructure systems would have on the community, the natural and built environment and the associated costs and appreciate the importance of developing sustainable infrastructure systems and 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.

Content
Types of infrastructure considered in this subject include road pavements, bridges, drainage and sewer systems, and water supply systems. Topics covered include:

- Deterioration of infrastructure elements and services.
- Performance measures used locally and internationally.
- Deterioration models, local and overseas experiences.
- 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-layer profiler, non-destructive testing, Accelerated load Testing, etc.
- Performance Indicators used locally and internationally to assess the functional and structural performance of road pavement. International roughness index, Pavement Serviceability Index, Pavement Serviceability rating, Structural Condition Index, Structural Number, Pavement Condition Index.

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, over deflection.
- Pipe joint pulling, inoperable valves an 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
- Types, geometry, articulation, components and materials, Timber, steel, concrete, 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 deteriorations models, deterioration models under different loading and environmental conditions.

Reading Materials
Text
Subject notes posted on Blackboard

Recommended reading
- Martin, T.C., 1998 State-of-the-Art Pavement Performance Modelling at a Network

References
Aims & Objectives

During the course we aim at providing the students with the opportunity:

- To meet with potential employers and explore opportunities of employment.
- To synthesise knowledge gained in previous years in the course.
- Learn about the factors considered and techniques adopted in the different phases of managing the life cycle of a civil infrastructure system.
- To learn to treat each stage in the life of a civil infrastructure system as a part of an integrated process of evaluation to achieve sustainability.
- To gain knowledge in the different management aspects of civil infrastructure systems including planning, programming and budgeting, design, construction, operations, maintenance, repair and renewal, and disposal.
- 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 at the different stages of the life cycle of an infrastructure.
- To develop teamwork and communication skills required for multi-disciplinary civil and engineering projects and develop research and report writing skills.
- 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.

At the end of this course students will be able:

- To synthesise knowledge gained in previous years in the course and articulate the linkage between the different stages of a system’s life cycle and critically assess and report case studies on the design and construction of an infrastructure.
- To work within a team and take responsibility for the team’s performance as a whole to achieve the best outcomes.
- To identify and articulate the latest innovations in design, construction, maintenance and rehabilitation techniques (locally and internationally) for the different civil infrastructure system and identify opportunities for further developments.
- To identify how risk is assessed and managed at the different stages of the life cycle of an infrastructure.
- To demonstrate ability to participate in constructive discussions with peers and supervisors about all aspects of the project.
- To develop an understanding of the principles of sustainability in managing a civil infrastructure system over its whole life, appreciation of the constraints and ability to critique the current processes or techniques in achieving a sustainable development at the different stages of the life cycle of an infrastructure.
- To develop an appreciation of the fast developing field of civil infrastructure management and the importance of keeping up with the change to restore the condition and service of the decaying infrastructure using the best practice in terms of economical, social and environmental sustainability.

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, sustainability, cost and quality, and design for whole life; environmental impacts; 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). In this subject, students will work in teams of four. Each team member will be responsible for investigating and reporting (with case studies) on one of the following management stages of a life cycle of a civil infrastructure system:

- Design and Construction
- Performance and Operation
- Maintenance, Rehabilitation and Renovation
- Risk Assessment at different stages

Civil engineering/infrastructure systems considered in this subject include: Highway pavements, Local Roads, Water supply, Sewerage, Drainage, Gas pipelines, Buildings, Bridges, Light rail, Heavy rail, Airports, Seaports.

References


Austroads Guidelines: Road Design and Pavement Design


Improved Surface Drainage of Pavements, books.nap.edu/books/nch016/html/R1.html


ASCE, Pipeline Infrastructure, 1988, Conference Proceedings.


HESS195 Infrastructure Management Project

12.5 Credit Points  • 1 Semester  • 48 Hours  • Hawthorn  • Prerequisite: Completed HES182 Infrastructure Deterioration Assessment, Teaching methods: Lectures (18 Hours); Assignments & consultations (18 Hours); Oral presentations (12 Hours); Web-based subject presence (Blackboard)  Assessment: Oral Presentation (40%); Written Report (40%); Summary (20%)

A subject in the Bachelor of Engineering (Civil), and Bachelor of Engineering (Civil)/Business of Hawthorn.

Aims & Objectives


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). In this subject, students will work in teams of four. Each team member will be responsible for investigating and reporting (with case studies) on one of the following management stages of a life cycle of a civil infrastructure system:

- Design and Construction
- Performance and Operation
- Maintenance, Rehabilitation and Renovation
- Risk Assessment at different stages

Civil engineering/infrastructure systems considered in this subject include: Highway pavements, Local Roads, Water supply, Sewerage, Drainage, Gas pipelines, Buildings, Bridges, Light rail, Heavy rail, Airports, Seaports.

References


Austroads Guidelines: Road Design and Pavement Design


Improved Surface Drainage of Pavements, books.nap.edu/books/nch016/html/R1.html


ASCE, Pipeline Infrastructure, 1988, Conference Proceedings.


HESS210 Industrial Systems

12.5 Credit Points  • 1 Semester  • 48 Hours  • Hawthorn  • Prerequisite: HET182 Teaching methods: Lectures (36 hours); Tutorial/Project Consultations (12 hours)  Assessment: Assignments (40%) Examinations (60%)

A subject in the Bachelor of Engineering (Product Design) and an elective in the Bachelor of Engineering (Mechanical)

Aims & Objectives

Aims of the course can be identified as follows:

- 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 subject, 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

Textbook

There is no set textbook for this subject, 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 • 7 Semester • 48 Hours • Hawthorn • Prerequisite: Completion of at least 2.5 years of any engineering course • Teaching methods: Lectures; Tutorials: 10x2 hour; Laboratory: 2x2 hour; Assignments; Web-based subject presence (Blackboard); Subject will be supported online • Assessment: Assignments, Examinations

A subject in the Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics) & Bachelor of Science (Computer Science & Software Engineering), and an elective in Bachelor of Engineering (Mechanical).

Aims & Objectives

During the course we aim:

- To provide a general understanding of the role of Robotic Technology in industry
- To learn how to analysis and synthesise an articulated robot arm
- To learn how to design an automated assembly task
- To gain practical experience in designing an automated robotic movement
- To develop the understanding of how the selection and application of different robots can meet various manufacturing requirements
- To develop the ability to combine various elements of automation to create systems which improve manufacturing productivity (hand-eye coordination).
- To develop an appreciation of the social and financial impact of decisions relating to implementation of automation, particularly robotics.
- To be able to design Pneumatic and Hydraulic circuits
- To develop the knowledge of advanced automated 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 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.
- 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 robotic technology utilised in industry
- Apply laser technology to automate manufacturing process
- Apply machine vision to automate robotic assemblies
- To be able to utilise laser measurement devices for robotic application
- Demonstrate an understanding of social and financial impacts of using robotic technology for automation
- To be able to design and analyse pneumatic and hydraulic circuits

Content

Robot Cell Design:

- Robot cell layout
- Multiple robot operation
- Workcell control.

Robot Implementation Principles and Issues:

- Safety Requirements in robotic installations
- Training
- Maintenance
- Human factors

Financial and Social Implications of Robot Installations:

- Robot Applications in Manufacturing (Material handling)
- Robot Kinematic Analysis
- Robot Trajectory Planning
- Robot Programming
- Robot Hand-eye Coordination Project

References


HES5290 Advanced Technologies

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Completion of at least 2.5 years of any engineering course • Teaching methods: Lectures; Laboratory: 2x2 hour computer laboratories; Assignments; Web-based subject presence (Blackboard); Subject will be supported online • Assessment: Assignments, Examinations

To learn about advanced automated processes in industry
A subject in the Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering), and an elective in Bachelor of Engineering (Product Design), and Bachelor of Engineering (Mechanical).

### 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 techniques
  - the application of advanced 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.
- 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 regimes utilised in industry
- 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 quenching, effect of microstructure and properties of dies
- Laser based technology: laser cutting, hardening glass 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
- Lead bearing capacity, Hertzian stress calculation

**Robotic technology:**

- Human Computer Interaction
- Visual Data Analysis
- Robotic navigation and use of satellite positioning data
- Intelligent robotics

### References


Invited lecturers advise the reference for each lecture.

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**HES5310 Machine Dynamics 2**

12.5 Credit Points • 1 Semester • 80 Hours • Hawthorn • Prerequisite: HES2310 •

Teaching methods: Lectures (28 hours), Tutorials (10 hours), Web-based subject presence (Blackboard), Laboratory Assessment: Tests (15%), Laboratory Assignment (15%), Examinations (70%)

A subject in the Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical) / Bachelor of Arts, and Bachelor of Engineering (Mechanical) / Bachelor of Business.

### Aims & Objectives

During the course, we aim:

- To develop the ability to solve problems involving the analysis and synthesis of mechanisms and machines.
- To develop the ability to design reliable mechanism solutions to real, unstructured engineering problems.

At the completion of this subject, 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
- Centrodes, 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 (35%)**

- 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
- Shaking 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


### References


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**HES5320 Solid Mechanics**

12.5 Credit Points • 1 Semester • 80 Hours • Hawthorn • Prerequisite: HES2120 •
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 subject, 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 coordinates, strain-displacement relation, 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%)
- Basic 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, axis-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 analysis, scale models, transmission and reflection photoelasticity, brittle lacquer

Textbook

References

HES5340 Fluid Mechanics 2
12.5 Credit Points  •  1 Semester  •  60 Hours  •  Hawthorn  •  Prerequisite: HES2340  •  Teaching methods: Lectures (36 hours), Tutorials (20 hours), Web-based subject presence (Blackboard)  •  Subject will be supported online; Laboratory, Assignments  •  Assessment: Tests (15%), Assignments (15%), Examinations (70%)

Aims & Objectives
During the course, we aim:

- 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 subject, 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
- Quantitative relations for 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
- Pump and turbine theory
- 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
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HES3350
Teaching methods: Web-based subject presence (Blackboard); Lectures (24 hours); Tutorials (24 hours); Design/Projects • Assessment: Assignments; Examinations; Projects
A subject in Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical)/Bachelor of Arts, Bachelor of Engineering (Mechanical)/Bachelor of Business

Aims & Objectives
During the course, we aim:
• To develop an understanding of the product design cycle.
• To develop an appreciation of design principles in both engineering and nature.
• To develop the ability to creatively design quality products for a sustainable environment.

At the completion of this subject, 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.
Design for production (8%):
• Material selection, manufacturing processes.
• Design for assembly, Design for automation.
• Manufacturing costs.
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.
• Probabilistic design (8%):
• Prediction of product failure rate.
• Prediction of performance degradation.
• Robust design (8%):
• Concept of robustness.
• Visualisation.
• Taguchi’s Quality Loss Function.
• Analytical methodology, Examples.
• Case Study.
Simulation in design (8%):
• Concept of simulation.
• Monte Carlo and Latin Hypercube methods.
• Demonstration.
• Case studies.
• Simulating wear and deterioration.
• Prediction of reliability trends.
• Experimental design (8%):
• Level orthogonal designs.
• Scaling.
• Determination of significant effects.

References

HES5380 Engineering Management 2
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HES3380.
No prerequisites are required for students undertaking this subject in the:
• BEng(Telecommunications & Internet Technologies); the BSc(Computer Science & Software Engineering)/BEng(Telecommunications & Internet Technologies); and the
• BMon(Networks & Computing)/BEng(Telecommunications & Internet Technologies).
• Teaching methods: Web-based subject presence (Blackboard); Lectures; Tutorials; Assignments • Assessment: Participation (15%), Assignments (45%), Examinations (40%)
A subject in the Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Engineering (Civil), Bachelor of Engineering (Mechanical), Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics) & Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Product Design), Bachelor of Engineering (Telecommunications & Internet Technologies), and Bachelor of Science (Computer Science & Software Engineering)/Bachelor of Engineering (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 subject students will be able to:
- recognise and assess management requirements of project initiation, implementation and termination
- use project management tools, techniques and practices to plan and control projects that achieve stated requirements on time and within budget
- understand the importance of project selection and selection models
- appraise the role, tasks, functions and characteristics 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

HES5385 Engineering Management 3

12.5 Credit Points  1 Semester  48 Hours  Hawthorn  Prerequisite: HES5380.
No prerequisites are required for students undertaking this subject in the
BEng(Telecommunications & Internet Technologies); BSc(Computer Science & Software Engineering)/BEng(Telecommunications & Internet Technologies); and the
BMm(Networks & Computing)/BEng(Telecommunications & Internet Technologies).
Teaching methods: Web-based subject presence (Blackboard); Lectures; Tutorials;
Assignments  Assessment: Participation (15%), Assignments (45%), Examinations (40%)
A subject in the Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Engineering (Civil), Bachelor of Engineering (Mechanical), Bachelor of Engineering (Product Design), Bachelor of Engineering (Robotics & Mechatronics) and Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Telecommunications & Internet Technologies), and Bachelor of Science (Computer Science & Software Engineering)/Bachelor of Engineering (Telecommunications & Internet Technologies).

Aims & Objectives
During the course, we aim:
- To provide a basis for continuing self-education to enable graduates to
  perform professionally in times of rapid change and to kindle interest in
  further studies in management after graduation.
- To provide an extending engineering management skill set to prepare
  candidates for their role in business planning and strategy development
  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 processes of engineering business planning and business
  plan creation, engineering business performance evaluation and turnaround,
  investment opportunity analysis and measuring investment return.

At the end of this subject students will be able to:
formulate vision-mission-goals-objectives-targets for a form of business endeavour
analyse an engineering business’ competitive situation through SWOT analysis
analyse the external environment of an engineering business through PEST analysis
appraise the role, task, functions and characteristics required of an effective project manager
create recommendations for future company strategies based on results of SWOT and PEST analyses
profile the background and market within which a company will compete
explain why an engineering product or service will be competitive [based on forecasts of cost, price and volume for annual production/service targets]
recognise and identify the dimensions of a product for it to create competitive advantage
formulate an implementation process to achieve a quality culture within a business enterprise
create a bankers business plan to secure venture capital to fund a business opportunity
recognise how strategic, marketing, operational, management and financial plans are integrated into a business plan
create an appropriate business plan for a chosen/allocated business opportunity
sell a business planning proposal to a venture capitalist to secure required funding
appraise the business performance health of an operational engineering business
identify the key contributing factor[s] to poor performance of an operational engineering business
brief executive management of a poor performance engineering business on the problem confronting them, the changes required and how the changes can be implemented to turn business performance around

Content
Engineering Economics (25%):
Engineer in the business environment, corporate decision making, turning a business around, business communications and corporate memory
Engineering economics and management, changes occurring in Australian public and private sectors and their effect on engineering management practice
Business opportunity investment analysis, measures of return [including BEA, ROI, MARR and IRR] and their application to business investment decision.

Business Planning for Engineers (25%):

Unit 1: Innovation and Strategy (25%)
- Enterprise Innovation issues, exploring opportunities, creation of wealth, starting a business and the role, structure and elements of Business Plans, types of business plans their purpose and content [Bankers Business Plans and Operational Business Plans]
- Strategic issues, strategic planning and the creation of strategic plans, SWOT analysis and PEST analysis
- Financial issues, financial planning and the creation of financial plans

Unit 2: Marketing (25%)
- Marketing issues, the marketing function and the creation of a marketing plan, marketing strategy, product life cycle, innovation and pricing, the 4Ps in successful marketing of technology, products and services.

Unit 3: Operations (25%)
- Operational issues, importance of operational planning and the creation of an operational plan, the management of quality and building quality into manufacturing and service operations, managing quality-performance-cost relationships, Kaizen by design and quality in Australian service and manufacturing industry
- Management and organisational issues and the creation of a management plan, human resource requirements, organisational requirements

Textbooks

References

HES5540 Honours Lectures
12.5 Credit Points • 2 Semesters • 1 Hour per Week • Hawthorn • Prerequisite: Acceptance into Honours Course • Teaching methods: Lectures • Assessment: Tests, Assignment and Attendance at compulsory lectures
A subject in the Bachelor of Science (Applied Chemistry)(Honours).

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 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 and Industrial Catalysis.

References
To be notified by the lecturers concerned.

HES5580 Honours Project
37.5 Credit Points • 2 Semesters • 12 Hours per Week Minimum • Hawthorn • Prerequisite: Acceptance into Honours Course • Teaching methods: Project Supervision • Assessment: Honours report, Oral presentation
A subject in the Bachelor of Science (Biochemistry)(Honours).

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 oral presentation.

Content
The content of the research project will depend on the project being undertaken.

HES5590 Honours Project
75 Credit Points • 2 Semesters • 25 Hours per Week Minimum • Hawthorn • Prerequisite: Acceptance into Honours Course • Teaching methods: Project Supervision • Assessment: Honours report, Oral presentation
A subject in the Bachelor of Science (Biochemistry)(Honours).

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 oral presentation.
Content
The content of the research project will depend on the project being undertaken.

HESS640 Honours Lectures
25 Credit Points • 2 Semesters • 1 Hour per Week • Hawthorn • Prerequisite: Acceptance into Honours Course • Teaching methods: Lectures • Assessment: Tests, Assignment and Attendance at compulsory lectures
A subject in the Bachelor of Science (Biochemistry)(Honours).

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 and Industrial Enzyme Technology.

References
To be notified by the lecturers concerned.

HES6132 Managing Modern Distribution
12.5 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Teaching methods: Distance Education & Tutorials • Assessment: Assignments (40%), Examination (60%)
A core subject in: Graduate Certificate in Logistics, Graduate Diploma in Logistics, and Master of Technology Management (Logistics), Bachelor of Technology (Air Transport Management)

Aims & Objectives
On completion of this unit, students should have an understanding of the skills required for supply chain management and modern distribution process management.

Content
• Concept and components of modern distribution management, role played in the supply chain.
• Use of decision support models to minimise costs of distribution and for supply chain optimisation.
• Outsourcing distribution processes (3rd party logistics).
• Importance of distribution at strategic marketing level.
• Planning and managing modern distribution methods.
• Management Information Systems (MIS).
• Importance of distribution management to the provision of service and quality.
• Optimising distribution to provide appropriate service and maximise ROI.
• Role and impact of information technology and electronic commerce on current distribution practices.
• International distribution.

References

HES6721 Risk Management Principles
12.5 Credit Points • 1 Semester • Hawthorn • Prerequisite: Nil • Teaching methods: Distance Education & Tutorials • Assessment: Assignments (100%)
A core subject in the: Graduate Diploma in Risk Management, and Master of Technology Management (Risk Management), Bachelor of Technology (Air Transportation Management), and Bachelor of Technology (Air Transportation Management)/Bachelor of Business.

Aims & Objectives
Students who pass this subject will possess:
- An awareness of fundamental principles related to loss prevention and a fundamental understanding of functional management concepts and processes.
- Practical applications concerning the effectively management of risk.
- An awareness of the legal structures and processes within Australia.
- An introductory understanding of health and safety law and related legal obligations.

Content
Risk management systems:
• Organisational and national structures, crisis management systems, and assessment of organisation effectiveness, functional management.
• Concepts and definitions of risk control, organisational and risk management objectives, risk evaluation and decision analysis techniques, the balance between risk, benefits and costs.
• Overview of risk management models: process model; assets, vulnerability, exposure and threats model, functions and activities model, prevention of property and production loss.
• Personal and small-group risk evaluation principles.
• Forecasting techniques and trend diagrams.

Overview of legal issues:
• Common law principles in the areas of occupation, public and product health and safety, duty and standard of care, tests of negligence.
• Development of health and safety law and doctrines: common employment, contributory negligence and voluntary assumption of risk.
• Legal relationships involving employers, employees, manufacturers and suppliers, service; providers, consumers and occupiers.
• The role and standing of codes of practice and standards. Legal implications of product guarantees, warranties and usage information; Application of Australian New Zealand Standard on Risk Management AS/NZ4360–1995.
• The role of an expert witness.

References

HET1005 Engineering Project
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures (12 hours), Supervised Workshop/Tutorials (24 hours) • Assessment: Project(s)
A subject in the Bachelor of Engineering (Electronics & Computer Systems)

Aims & Objectives
By the completion of the project subject 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.
• Constructed 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.
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 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 generic research skill development.

HET102 Introductory Physiology

A subject in the Bachelor of Science (Biomedical Sciences), Bachelor of Biomedical Engineering, Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Arts (Psychology/Psychotherapy), Bachelor of Science (Psychology)/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 subject 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.

HET103 Photonics 1

A subject in the Bachelor of Science (Photonics), Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies).

Aims & Objectives

The aim of this subject 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 Photons.
- Geometric Optics.
- Simple Optical Instruments.
- Fibre Optics.
- Polarisation.
- Interference and Interferometry.
- Fraunhofer Diffraction.

Textbooks


HET104 LAN Principles

A subject in the Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & 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 (Telecommunications & Internet Technologies), and Bachelor of Science (Research and Development)/Bachelor of Engineering (Electronics & Computer Systems).

Aims & Objectives

To provide a basis for understanding of human physiology.

Content

This subject 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.
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 LANs and WANs layer by layer.
• Describe the internal configuration components of a router, access the router, and test network connectivity.
• Describe and perform a basic router configuration.
• Explain TCP (segment format, port #s, handshakes) and IP (IP datagrams, ICMP, ARP, RARP).
• Address and configure a network.
• Compare and contrast static and dynamic routing, routed protocols versus routing protocols, and distance vector versus link state routing.
• Explain the function of network management tools.
• Address a network, given a topology and starting IP address.
• Design and construct a simple telecommunications device.

Content


Reference


HET105 Professional Skills - Telecommunications

(Replacing HET121 Introduction to Telecommunications)

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: Lectures, Labs and Tutorials • Assessment: Assignments, Examinations, Journal, Research Paper, Tutorials

A subject in the: Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Computer Science & Software Engineering)/Bachelor of Engineering (Telecommunications & Internet Technologies), and Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies).

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.

HET113 The Internet and World Wide Web 1

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: Lecture, Tutorials and Laboratory-based Exercises and Practical Work • Assessment: Assignments, Examinations, Pracs

A subject 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 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.
• The impact on society of the global network.
• Internet tools: Telnet, FTP, Gopher etc.
• How Web browsers and plug-ins 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.

Reference


HET123 The Internet and World Wide Web 2

12.5 Credit Points • 1 Semester • 3 Hours per Week (on average) • Hawthorn • Prerequisite: HET113 or HET121 or equivalent • Teaching methods: Lectures, Laboratory-based Exercises, Online Delivery • Assessment: Assignments, Computer-based Tests, Discussion Threads, Labs

A subject in the: Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Media
HET124 Energy and Motion

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: kinematics; Newton’s laws; momentum; energy and work.
- Rotational mechanics: circular motion.
- Fluid mechanics: buoyancy; Pascal’s law; Bernoulli’s principle.
- Thermodynamics (heat): zeroth and first law of thermodynamics; heat transfer and expansion; kinetic theory.
- Vibrations and waves: simple harmonic motion; resonance and damping.

Reference

HET128 Physics 2

Aims & Objectives
To develop in students a familiarity with selected areas of classical and modern physics, particularly those areas relevant to modern applied science.

Content
- Quantum mechanics and solid state physics: quantum phenomena, probability and wave functions.
- Time-dependent and time-independent Schrodinger equations.
- Applications of Schrodinger equation.
- Quantum states, energy levels and degeneracy.
- Reflection and transmission at a potential barrier: tunnelling, averages and the Heisenberg uncertainty principle.
- Many-body quantum mechanics.
- Identical particles and Pauli exclusion principle.
- Quantum distribution functions.
- Free electron theory.
- Fermi-Dirac distribution.
- Fermi level.
- Conductivity in metals.
- Failures of free electron model.
- Weak binding approximation.
- Forbidden energies and effective mass.
- Strong binding approximation.
- Band theory and intrinsic semiconductors.
- Extrinsic semiconductors and semiconductor devices.
- Electromagnetism and optics.
- Electric and magnetic fields and Maxwell’s equations.
- Scalar and vector potentials.
- Fields in dielectric.
- Magnetic and conducting materials.
- Polarisation and magnetisation.
- Constitutive relations.
- Maxwell’s equations in ‘macroscopic form’.
- Energy in electromagnetic fields.
- Electrostatic problems.
- Solutions of Poisson’s equation.
- Magnetostatic problems: electromagnetic waves in vacuum and in simple non-conducting and conducting media.
- Reflection and transmission at boundaries.
- Lasers and other light sources.
- Total internal reflection and optical wave guides.
- Optical fibre fundamentals, types of fibres and their transmission properties.
- Sources, modulators and detectors, communications via optical fibres.
- Holography and holographic optical devices.

References
HET133  Human Physiology

**12.5 Credit Points  • 1 Semester  • 4 Hours per Week  • Hawthorn  • Prerequisite: HET102  • Teaching methods: Lectures and Laboratories  • Assessment: Examinations, Project**

A subject in the Bachelor of Science (Psychology/Psychophysiology), Bachelor of Arts (Psychology/Psychophysiology), Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Sciences), Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), and Bachelor of Science (Research and Development)/Bachelor of Engineering (Electronics & Computer Systems).

**Aims & Objectives**

To develop further understanding of anatomy and physiological processes, as related to physiological measurements.

**Content**


**References**


HET148  Technology and Data Acquisition

**12.5 Credit Points  • 1 Semester  • 4 Hours per Week  • Hawthorn  • Prerequisite: Nil  • Teaching methods: Lectures, Tutorials, Laboratories and Online/Flexible Delivery  • Assessment: Examinations**

A subject in the Bachelor of Science (Biomedical Sciences), Bachelor of Arts, (Psychology/Psychophysiology), and Bachelor of Science (Psychology/Psychophysiology).

**Aims & Objectives**

Understanding of information technology, data acquisition and analysis applied to psychophysiology.

**Content**

This subject 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 analog-to-digital conversion and sampling theorem. Students are given the opportunity to operate all the necessary recording instruments in practical classes. The technology component of the subject looks at relevant information technology, particularly the Internet and WWW.

**Reference**


HET182  Electronic Systems

**12.5 Credit Points  • 1 Semester  • 5 Hours per Week  • Hawthorn  • Prerequisite: Nil  • Teaching methods: Lectures, Laboratory Work and Tutorials  • Assessment: Assignments, Computer-Managed Learning, Examinations, Labs, Lab Reports, Tutorials**

A subject in the Bachelor of Engineering (Biomedical Engineering), Bachelor of Engineering (Civil), Bachelor of Engineering (Civil), Bachelor of Science, 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 (Engineering (Electrical), Bachelor of Engineering (Electrical)/Bachelor of Business, Bachelor of Engineering (Engineering (Mechanical), Bachelor of Engineering (Mechanical)/Bachelor of Business, Bachelor of Engineering (Engineering (Product Design), Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Biomedical Sciences), Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Photons), Bachelor of Science (Photons)/Bachelor of Engineering (Telecommunications & Internet Technologies), and Bachelor of Science (Research and Development)/Bachelor of Engineering (Electronic & Computer Systems).

**Aims & Objectives**

This subject provides a basic introduction to analog and digital electronics (including analog DC circuit theory, digital logic and digital electronics, analog AC circuit theory, and amplification). The subject also provides a basic introduction to electromagnetism (including electric and magnetic fields, and the generation of electricity). The subject is structured around ‘real-life’ examples.

**Content**

Analog DC electronics: charge, current, voltage, Ohm’s law, Kirchhoffs laws series and parallel ccts., voltage divider, current divider, simplifying resistor networks, power and power transfer.

Analog AC electronics: alternating current and voltage, frequency, period, phase, amplitude: P-P, Peak, RMS; capacitor circuit and reactance, inductor circuit and reactance, RC, RL circuits (series and parallel), phasor notation; impedance, admittance frequency response of LandC, resonance; ideal transformers.

Amplification: ideal opamp, model, Open loop gain; inverting and non-inverting configuration.

Digital electronics: introduction, digital logic, number systems; boolean operators and truth tables; design and simplification of circuits; boolean laws and identities, S of P representation; K maps; combinatorial logic.

Electromagnetism: electric and magnetic fields, static and changing, magnets, magnetic induction AC generators.

**References**


HET201  Research and Development Project 2

**12.5 Credit Points  • 1 Semester  • Students are expected to spend a day per week during semester working on their project in the research centre/group concerned except by agreement with the project supervisor.  • Hawthorn  • Prerequisite: Nil  • Assessment: Assignments, Class Presentations**

A subject 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 with an 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 generic research skill development.

HET202  Digital Electronics Design

**12.5 Credit Points  • 1 Semester  • 5.5 Hours per Week (on average)  • Hawthorn  • Prerequisite: HET182  • Teaching methods: Lectures, Tutorials, Laboratories, Project  • Assessment: Examinations, Labs, Project(s)**

A subject in the Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software
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
Boolean Algebra and Logic Design
- Basic Theorems of Boolean Algebra
- Canonical and Standard Forms
- Logic Gate Implementations and Characteristics: fan out, propagation delays, power dissipation, logic levels and compatibility.

Simplification of Boolean Functions
- Cubes, Subcubes, Prime Implicants, etc
- Map and Tabulation Methods
- Technology Mapping for Gate Arrays
- Hazard-free Design

Introduction to CMOS Logic Circuits
- Combinatorial Components
- Adders/Subtractors
- Logic and Arithmetic Units
- Decoders/Selectors
- Buses
- Priority Encoders
- Magnitude Comparators
- Shifters and Rotators
- Multipliers

Programmable Logic Devices
- Read Only Memory
- Programmable Logic Arrays (PLAs)
- Programmable Array Logic (PALs) Devices
- Field Programmable Gate Arrays (FPGAs)

Synchronous Sequential Logic
- Latches
- Flip Flops
- Finite-State Machine (FSM) Model
- Synthesis and Analysis
- Designing State Machines using State Diagrams
- Designing State Machines using ASM (Algorithmic State Machine) Charts
- State Minimisation, Optimisation and Timing

Textbook

References
Textbook

Recommended reading

HET205 Introduction to Modern Optics
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET203 Teaching methods: Lectures, Tutorials, Laboratory Work • Assessment: Assignments, Examinations, Lab Reports
A subject in the Bachelor of Science (Photonics), Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies).

Aims & Objectives
The aim of this subject 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.

Textbook

Recommended reading

HET206 Modern Physics
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET128 Teaching methods: Lectures, Tutorials, Laboratory Work • Assessment: Assignments, Examinations, Lab Reports
A subject in the Bachelor of Science (Photonics), Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies).
Note: This subject will be offered from 2007.

Aims & Objectives
The aim of this subject is 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
Quantum Physics:
• Functions and operator algebra.
• Conservation principles.
**HET208  3D Animation and Special Effects**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil
- Teaching methods: Lectures, Studio (Computer Laboratory), Tuition with Practical Experience through Exercises and Set Tasks • Assessment: Assignments, Practical Work and CLM Test

A subject 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 & Computing)/Bachelor of Engineering (Telecommunications & 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 subject 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.

**Reference**

**HET209  Fibre Optics Communication & Optical Instrumentation**

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET182 & HMS112 • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Lab Reports

A subject in the Bachelor of Science (Photonics) and 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).

**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).

**Reference**

**Recommended reading**

**HET210  Electronics**

12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: HET182 & HMS112 • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Computer-Managed Learning, Examinations, Pracs

A subject in the Bachelor of Science (Computer Science & Software Engineering)/Bachelor of Engineering (Telecommunications & Internet Technologies), 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 (Telecommunications & Internet Technologies), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Robotics & Mechatronics) and Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Science (Photonics), and Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies).

**Aims & Objectives**
- To be familiar with the basic digital building blocks, such as gates, flip-flops and counters.
- The ability to analyse 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.
• Amplifiers: Input and Output Impedance, Loading Effects, Voltage Gain, Current Gain, Power Gain, Frequency.
• Response Classifications, Bode Diagrams.
• Ideal Operational Amplifiers: Ideal Model, Unity Gain Buffer, Inverting, Non-Inverting Configurations, Summing and Differential Amplifiers, Integrators and Differentiators.
• Filters: Second Order Active Filters, LP, HP, BP Filter Examples.
• Non-Ideal Op-Amp: Effect of Finite Op-Amp Gain, Bandwidth, Input Offset Voltage, Input Bias Current, Bias Current, CMRR, Instrumentation Amplifiers.
• Non-Linear Op-Amp Applications: Clipping and Clamping Circuits, Precision Diode, Peak Detector, Comparators.

Digital Electronics:
• Combinational Logic.
• SSI & MSI Building Blocks: Adders, Subtractors, ALUs, Multiplexers, Demultiplexers,
Encoders, Decoders.
• Sequential Logic (Latches and Flip-flops), MSI Building Blocks (Counters, Registers, Shift Registers).
• Logic Devices and Family Characteristics: Fan Out, Loading, Propagation Delays and Power Dissipation.
• 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

HET212 Circuits
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HMS112 and HET182 • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Labs
A subject in the Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences)/Bachelors of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Business, 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 electrical engineering subjects, including electronics, controls, fields and power systems.

Content
• Review of circuit analysis techniques.
• Network theorems.
• Response of first-order RC and RL circuits.
• Sinusoidal analysis.
• Power factor correction.
• Balanced three phase circuits.
• Introduction to two-port and three-port networks.
• Graphical solution of non-linear components.

Reference
HET219 Neurological Monitoring

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 18-20 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.

Reference

HET222 Digital Video and Audio

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
- Camera & 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

References
• Random access / non-destructive editing
• Digital signal processing
• Audio file formats and compression
• Internet audio
• Digital audio disk and tape media

References
Lecture handouts containing relevant course material. There is no prescribed textbook for this subject.

HET225 Electrical Machines
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: HET182 and HME213 recommended • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Pracs
A subject in the 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 (Robotics & Mechatronics) and Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering).

Aims & Objectives
To introduce the principles of electromechanical energy conversion and study, in an introductory sense, the construction, operation and applications of the transformer, the AC and DC machines. The study will also include a quantitative treatment of the magnetic circuits and the terms associated with them. The subject will conclude with an application where all machines are interconnected and interact in the one power system.

Content
Magnetic Quantities:
• Definition of the terms magnetic flux, flux density, magnetic field intensity, reluctance, permeability and permeance.
• Study of series magnetic circuits.
• Permanent magnets, magnetic materials and B-H loops.
• Self and mutual inductance.
• Energy stored in a magnetic field.
• Energy density and the force between the faces of a magnet.
• Force on a conductor carrying a current in a magnetic field.

The Transformer:
• Construction of a single phase power transformer.
• Calculation of the size and number of turns for a given kVA rating.
• EMF equation and phasor diagram for the transformer.
• Definition and calculation of efficiency and voltage regulation.
• Introduction to the high frequency transformer and the pulse transformer.

The DC Machine:
• Construction of a DC machine and a description of the armature, commutator and field.
• EMF equation and torque equation.
• Permanent magnet and separately excited machines, series and shunt connections.
• Volt-amp characteristics for the DC generator and torque-speed characteristics for the DC motor.
• Calculation of the steady state performance of DC machines.
• Starting methods.

Power Electronics:
• Study of the characteristics of the power diode, and the thyristor family of devices to the conversion of an AC supply to a controlled DC supply.
• Prediction of current and voltage wave shapes associated with resistive and inductive loads connected to a controlled DC supply with and without a freewheeling diode.
• Application to the control of DC motors and other DC supplies for industrial equipment.

AC Machines:
• Introduction to the operation of the induction motor and the synchronous machine.

The Power System:
• Descriptive treatment of the interconnection of prime movers, generators, transformers, transmission lines, and consumers of electrical energy.
• The problem of harmonics generated by modern electronic equipment.

Reference

HET226 Sensory Systems
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET133 • Teaching methods: Lectures and Practical Work • Assessment: Assignments, Examinations, Pracs
A subject in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronic & Computer Systems), Bachelor of Arts (Psychology/Psychophysiology) and Bachelor of Science (Psychology/ 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, transduction at 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.

References

HET227 Neurophysiology
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET133; and HET148 or HET182 • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Pracs
A subject taught in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronic & Computer Systems), Bachelor of Arts (Psychology/Psychophysiology) and Bachelor of Science (Psychology/ 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; drug dynamics, clearance, routes of administration, drug treatment in some clinical disorders.
• Neuroendocrinology: Introduction to interactions between nervous system and endocrine systems, effects on metabolism and arousal, hypothalamic pathways, pituitary-hypothalamic interactions and axes, hypothalamic-pituitary-adrenal axis, control and homeostasis.

References

HET230 Cardiovascular Biophysics
12.5 Credit Points  1 Semester  4.5 Hours per Week  Hawthorn  Prerequisite: HET240  Teaching methods: Lectures, Laboratory Work and Online/Investigations.

A subject in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering) and Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & 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, flow 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.

References

HET231 Perception and Motor Systems
12.5 Credit Points  1 Semester  4.5 Hours per Week  Hawthorn  Prerequisite: HET227 and HET219  Teaching methods: Lectures, Laboratory Work and Online/Investigations.

A subject in the Bachelor of Science (Psychology), Bachelor of Science (Psychophysiology), Bachelor of Science (Psychology)/Psychophysiology.

Aims & Objectives
To develop an understanding of human motor control systems and an understanding of psychophysics, perception, human performance and experimental systems.

Content
• Physiology of the motor system.
• Peripheral motor system, effector pathways, and muscle performance.

References

HET232 Embedded Microcontrollers
12.5 Credit Points  1 Semester  5 Hours per Week  Hawthorn  Prerequisite: HET210 or HET202 (from 2005) and HIT280 or HIT105 and HIT1052 (corequisite in certain courses)  Corequisites: HIT1052 for students enrolled in Bachelor of Science (Research and Development)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & electronic/Sciences)/Bachelor of Science (Computer Science & Software Engineering)  Teaching methods: Lectures, Laboratory Work and Tutorials  Assessment: Assignments, Examinations, Pracs

A subject in the Bachelor of Engineering (Telecommunications & 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 & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Arts, Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Business, Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Telecommunications & Internet Technologies) and Bachelor of Multimedia (Networks & 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.

Textbook

Reference
Kelley, A., Poit, I., A Book on C: Programming in C, 4th edn, Addison-Wesley
HET235  Biomedical Electronics
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET210 • Teaching methods: Lectures and Laboratory Work • Assessment: Assignments, Examinations
A subject in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems) and Bachelor of Engineering (Electronics & Computer Systems).

Aims & Objectives
This subject 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.
- Magnetic 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
Webster, J.G., Medical Instrumentation, Haughton Miflen.

HET240  Cellular Biophysics
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET133 and HET124 or HET182 • Teaching methods: Lectures, Tutorials and Practical Work • Assessment: Assignments, Examinations, Pracs
A subject in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering) and Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems).

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, Nemst and Donnan equilibrium, osmosis, Goldman equation, Using 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, exciton-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.

References

HET260  Renal and Respiratory Biophysics
12.5 Credit Points • 1 Semester • 4.5 Hours per Week • Hawthorn • Prerequisite: HET240 • Teaching methods: Lectures and Practical Work • Assessment: Assignments, Examinations, Pracs
A subject in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering) and Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems).

Aims & Objectives
To establish an understanding of the respiratory and renal physiological processes and the application of monitoring techniques and instrumentation.

Content

References
A subject in the Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics & 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.

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.

**HET306 Unix For Telecommunications**
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil
- Teaching methods: Lectures, Labs and Tutorials • Assessment: Examination, Laboratory Work, Practical Examination, Tests
A subject in the Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & Internet Technologies) and Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies).
Note: This subject will be offered from 2007.

**Aims & Objectives**
- 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.

**Content**
- Why Unix? Comparison of FreeBSD, Linux, Windows, etc. Installation of Unix and software packages, editors, admin tasks.
- Configuring client services, printing, backing up file systems.
- Automating tasks with at, cron, and anacron.
- X Window system
- The Unix kernel.
- Shells and shell scripts
- DHCP, NFS, SAMBA file and print sharing to Windows clients
- Web server: Apache with PHP4 and MySQL DB Server
- Remote access, Inetd, Ftpd pppd SSH Sendmail
- Bridges, routers, and gateways
- NAT, firewalls
- TopDump and other tools

**References**
FreeBSD Manual.

**HET307 Advanced Routing & Switching**
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET424 or approved CNAP Sem 4
- Teaching methods: Lectures, Labs and Tutorials • Assessment: Examinations, Labs, Practical Examination, Tests
A subject in the Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Engineering (Telecommunications 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 (Telecommunications and Internet Technologies).
Note: This subject will be offered from 2006.

**Aims & Objectives**
The student should be able to:
- Understand Layer 2 Technologies
- Configure VLANs
- Understand advanced routing protocols
- Configure router with appropriate protocols
- Understand and use classless IP Addressing
- Understand IPv6

**Content**
- Introduction to VLANs
- Spanning Tree Protocol (STP) and Redundant Links
- Routing between VLANs
- VLANs and Trunking
- MPLS
- Scalable routing protocols
- Comparison of routing protocols
- Classes IP Addressing: VLSMs
- OSPF & BGP
- Ipv6 vs Ipv4
- IP traffic management

**References**
TBA

**HET308 Circuits and Electronics 2**
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Prerequisite: HET214
- Teaching methods: Lectures, Tutorials, Practical, Laboratory and Project Work • Assessment: Assignments, Examinations, Labs
A subject in the Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Business, Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics & Computer Systems).
Note: This subject will be offered from 2006, replacing subject HET310 Analog Electronics Design.

**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 heatsinks.
Textbooks

References

HET310 Analog Electronics Design
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: HET210 • Teaching methods: Lectures, Tutorials, Practical, Laboratory and Project Work • Assessment: Assignments, Examinations, Pracs
A subject 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 Engineering (Electronics & Computer Systems)/Bachelor of Arts, Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Business.

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
• BJTs: models, biasing, DC and AC analysis and applications.
• Multi-transistor amplifiers: cascode, differential pair, etc.
• Current sources.
• Frequency response of amplifier circuits.
• 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, inverisona and pulse width modulation, switch mode power supplies and heatinks.

Reference

HET312 Control and Automation
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: HET1B2 and either HMS213 or HMS211 • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Pracs
A subject 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 Engineering (Electronics & Computer Systems)/Bachelor of Arts, Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Business, Bachelor of Science (Research and Development)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Robotics & Mechatronics) and Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & 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-plans 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 tacho-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.

References

HET313 Telecommunication Technologies
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Pracs
A subject in the: Bachelor of Science (Computer Science and Software Engineering)/Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Engineering (Telecommunications 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 (Telecommunications & Internet Technologies).

Aims & Objectives
The student should become familiar with 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 (UL, 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

References

HET315 Communications Information Theory
12.5 Credit Points  1 Semester  5.5 Hours per Week  Hawthorn  Prerequisite: HET314 and HET214  Teaching methods: Lectures, Tutorials and Laboratory Work  Assessment: Assignments, Examinations, Labs, Lab Reports, Laboratory Practical Test, Pracs, Practical Examination

A subject in the Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Electronics & Computer Systems), BEng (Telecommunications & Internet Technologies) and Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Photonics), Bachelor of Science (Photronics)/Bachelor of Engineering (Telecommunications & Internet Technologies).

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.

Content
- Digital communication systems, discrete sources and entropy, channel and channel capacity.
- Run-length-limited codes.
- Linear block error-correcting codes.
- Cyclic codes.
- Convolutional codes.
- Trellis-codes modulation.
- Turbo-coding (if time permits).
- Information theory and cryptography.
- Shannon’s coding theorems.

Textbook

References

HET316 Electromagnetic Waves
12.5 Credit Points  1 Semester  5.5 Hours per Week  Hawthorn  Prerequisite: HETS214  Teaching methods: Lectures, Tutorials and Laboratory Work  Assessment: Assignments, Examinations, Lab Reports, Tutorial Tests

A subject in the Bachelor of Engineering (Telecommunications & 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 Engineering (Electronics & Computer Systems), Bachelor of Engineering (Telecommunications & Internet Technologies) and Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & 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 antennae and microwave propagation technology.

Content
- Review of relevant circuit theory.
- Maxwell’s 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.
• Step and pulse 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 EM compatibility, shielding and noise reduction techniques.
• Electromagnetic safety and standards.

References

HET320 Psychophysiological Project
12.5 Credit Points • 1 Semester • Variable depending upon project typically an average of 1 Hour per Week • Hawthorn • Prerequisite: HET527 or HET528 • Teaching methods: Student Research • Assessment: Report, Seminar
A subject in the Bachelor of Science (Psychology/Psychophysiology) and Bachelor of Arts (Psychology/Psychophysiology).

Aims & Objectives
To apply skills to a research project within the area of psychophysiology.

Content
This subject 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.

HET324 Interactive Animation
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET123, HET332 • Teaching methods: Laboratory and lecture based tuition with continual practical experience through exercises and set tasks. • Assessment: Assignments, Hurdle Tasks, Practical Examination
A subject 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 the Bachelor of Multimedia.

Aims & Objectives
To provide hands-on development with Flash and database integration to produce rich media dynamic data applications.

Content
• Basic understanding of software and programming issues in multimedia.
• Advanced scripting techniques for web-based multimedia.
• Understanding programming standards, naming conventions and syntax.
• Working with predefined and custom objects.
• Debugging in different environments.
• Revision of database principles.
• Interactive information presentation
• Interactive information retrieval
• Event driven effects.

References

HET325 Principles of Game Design
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET215, HET208 • Teaching methods: Laboratory-based tuition with continual practical experience through exercises and set tasks. • Assessment: Major Assignments, Hurdle Tasks, Practical Examination
A subject 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 the Bachelor of Multimedia.

Note: This subject will be offered from 2006.

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 milieu.
• 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

References

HET329 Digital Signal and Image Processing
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: HMS211 or HMS213 • Teaching methods: Lectures, Tutorials and Practical Sessions • Assessment: Examinations, Pracs
A subject in the Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Biomedical Sciences), 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 & 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 (Telecommunications & Internet Technologies) and Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Photonics), Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies).

Swinburne University of Technology | Undergraduate Course Handbook 2004
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.

References

HET332 Multimedia Development
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET215 • Teaching methods: Laboratory based tuition with continual practical experience through exercises and set tasks • Assessment: Major assignments, Hurdle Tasks, Practical Examination

A subject 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 the Bachelor of Multimedia.

Note: This subject will be offered from 2005.

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.

References
References

HET343 Mechatronics
12.5 Credit Points  • 1 Semester  • 5.5 Hours per Week  • Hawthorn  • Prerequisite: HET222, or HET1015 and HET3047 (for Bachelor of Software Engineering)  • Teaching methods: Lectures and Project Work  • Assessment: Class Presentations, Examinations, Projects, Project Report
A subject in the Bachelor of Engineering (Robotics & Mechatronics) and Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & 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 technical/electronic components.
• To further develop team skills in cooperation, coordination and scheduling of time and resources.

Content
Design of ratings (dimensioning) of electrical and mechanical components for a variety of applications.
Review of:
• Mechanical transmission (gears, belts & pulley drives).
• Electrical machines and industrial applications.
• Power electronics (pulse width modulation, regenerative braking, electrical switching devices).
• Methods of speed control (electrical and mechanical methods).
• Transducers for position, velocity, temperature etc. (analogue and digital).
• Real time constraints in programming embedded systems.
• The use of multitasking and event driven programming.
• The use of CAE Tools in Electronics Design.

References

HET378 Integrated Circuit Design
12.5 Credit Points  • 1 Semester  • 5.5 Hours per Week  • Hawthorn  • Prerequisite: HET431 or HET202 (from 2005)  • Teaching methods: Lectures and Practical Work  • Assessment: Class Presentations, Examinations, Pracs
A subject in the Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Research and Development)/Bachelor of Engineering (Electronics & Computer Systems) and Bachelor of Engineering (Electronics & 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.

References
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.

HET401 Multimedia Project 1
12.5 Credit Points  • 1 Semester  • Variable depending on project: typically an average of 1 hour per week  • Hawthorn  • Prerequisite: Must be taken in the final stage of the course  • Assessment: Project(s)
A subject in the Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Networks & Computing), Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia and Bachelor of 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 subject is a subject for students in the final stage of the Bachelor of Multimedia course. The project subject 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.

Reference

HET402 Multimedia Project 2
12.5 Credit Points  • 1 Semester  • Variable depending on project: typically an average of 1 hour per week  • Hawthorn  • Prerequisite: HET401  • Teaching methods: Project  • Assessment: Project
A subject in the Bachelor of Multimedia, Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Networks & Computing) and Bachelor of 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 subject is a subject for students in the final stage of the Bachelor of Multimedia course. The project subject 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.

Reference

HET404 Multimedia Systems
12.5 Credit Points • 1 Semester • 4.5 Hours per Week (average) • Hawthorn • Prerequisite: Nil • Assessment: Examinations, Labs, Tests
A subject in the Bachelor of Multimedia, Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Networks & Computing), Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & Internet Technologies) and Bachelor of Multimedia (Software Development).

Aims & Objectives
- To introduce students to a range of technologies used in multimedia systems.
- To make students aware of existing standards and basic techniques related to the recording and reproduction of sound and vision.

Content
- Information representation: analog and digital information, types of information, data images and sounds.
- Information compression and transmission: analog and digital signals, radio, TV, satellite, cable, telephone, fibre optics, computer busses and ports, compressed signals.
- Information storage: analog recording, digital recording, magnetic disks, CD and DVD systems.
- Virtual reality: input and output devices. Applications.

References

HET405 Research & Development Placement (Project 4)
50 Credit Points • Minimum 14 Weeks • Full-time placement in industry/research unit for a minimum of 14 weeks • Hawthorn • Prerequisite: This subject is normally scheduled in the first semester of 4th year (7th academic semester). Students must have successfully completed at least 250 credit points of their course. Students will not be permitted to undertake this subject after the penultimate semester of their course. Assessment: This subject will be assessed as pass or fail on the basis of written reports from the student and the project supervisor. A subject in the Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics & Computer Systems).

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 convenor.

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 • Prerequisite: HET329 • Corequisites: HET329 • Teaching methods: 36 Hours Lectures, 12 Hours Tutorials, 4 X 3-Hour Laboratory Sessions • Assessment: 15% Assignments, 70% Examinations, 15% Laboratory Work
A subject 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.

References

HET407 Multimedia Technology
12.5 Credit Points • 1 Semester • 4.5 hours per week • Hawthorn • Prerequisite: HET215 • Assessment: Examinations, Labs, Tests

A subject 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 the Bachelor of Multimedia.

Note: This subject will be offered from 2006.

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.

References
Online resources.

HET408 Biomedical Imaging and Emerging Technologies
12.5 Credit Points • 1 Semester • Average Weekly Contact of 3.8 Hours • Hawthorn • Prerequisite: HET128 and HMD213 • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Pracs

A subject in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering) and Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & 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, radiosotope imaging, gamma scintigraphy, emission computed tomography, miscellaneous imaging modalities.

General aspects of image display.
Diagnostic and confocal microscopy: multiphoton imaging nanotechnology.
Fabrication methods including excimer 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 biocompatible materials: woven fabrics, PMMA, ceramics, fibres, metals. Electrode materials.
Examples of devices: cochlear implant, glucose sensors, optical and membrane-based biosensors, implantable pumps operated by feedback.
Rehabilitation technology: gait analysis.

Reference

HET409 Advanced Multimedia
12.5 Credit Points • 1 Semester • 3.5 Hours per Week • Hawthorn • Prerequisite: HET208. This subject must be taken in the final stage of the course • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Discussion Forum Contribution, Laboratory Work

A subject in the Bachelor of Multimedia, Bachelor of Multimedia (Business Marketing), Bachelor of Multimedia (Networks & Computing), Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Software Development) and Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & Internet Technologies).

Aims & Objectives
This subject explores emerging issues in multimedia.

Content
Advanced 3D animation and modelling: character animation.
eCommerce developments.
Digital video and streaming technologies.
Digital audio and streaming technologies.
Interactive TV.
Exploiting higher bandwidth networks.
Emerging multimedia authoring tools.
Establishing a multimedia startup.
Emerging broadband internet technologies.

Reference

HET410 Network Administration
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Tutorials and Practical Sessions • Assessment: Examinations, Tests

A subject in the Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Multimedia (Networks & Computing), Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Engineering.
(Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering) and Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & Internet Technologies)

Aims & Objectives
- To introduce administration issues in the information system environment.
- Network planning.
- Installation.
- User and domain management.
- System performance tuning.
- Security.
- Intranet/Internet (Web server).
- Hardware considerations.

Content
- General and advanced network configuration, including DNS, DHCP, routing.
- User management and access control.
- File systems, including striped and fault-tolerant file systems.
- Sharing file systems via the network.
- Disk configuration and administration.
- Effective backup and restore system.
- Managing printers, including local printers, network printers, and printer pools.
- Managing processes, performance optimisation and capacity planning.
- Securing systems, including implementing security policies and system auditing.
- Automating system administration tasks with scripts.
- Secure connection technologies over regular Internet: virtual private network (VPN).
- Remote network access.
- Web server installation and configuration.
- System management tools.
- Troubleshooting and maintenance.

References
Microsoft Official Curriculum 880B Accelerated Training for MS Windows NT 4.0: 883 + 822.
MCSE Training Kit, Networking Essentials Plus, 3rd edn.

Students should be aware that resource materials (texts and laboratory material) required for this subject may cost up to $200.

HET416 Computer Systems Engineering
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: HET232, HET308 • Teaching methods: 38 Hours Lectures, 11 Hours Tutorials, 22 Hours Laboratory and Project Work • Assessment: Examination 80%, Laboratory and Project Work 40%

A subject in the 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.

Reference

Recommended reading

HET417 Photonics and Fibre Optics
12.5 Credit Points • 1 Semester • 4.3 Hours per Week • Hawthorn • Prerequisite: NIL • Teaching methods: Lectures, Laboratory Sessions and Tutorials • Assessment: Assignments, Computer-Managed Learning, Examinations, Labs, Tutorials

A subject in the Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Science (Biomedical Sciences), Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Research and Development)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Telecommunications & Internet Technologies) and Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Photonics), Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies), 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 subject, students should have a basic understanding of:
- Models of light.
- The history of fibre optics.
- Fibre optics operating principles and manufacture.
- Light sources and detectors.
- Light modulation.
- Transmitters and receivers.
- Fibre optic components.
- Fibre optic telecommunication systems.
- Fibre optic sensors and imaging.

Content
- Overview and historical introduction.
- Models of light used in photonics.
- Optical fibre basics (including fibre modes and transmission speeds, numerical aperture, transmission and attenuation, bandwidth and dispersion).
- Optical fibre manufacture (including production methods, fibre types and cabling).
- Incoherent light sources (including broadband 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.
Understand and describe the techniques and technologies of modern Internet

Students should be able to:

Aims & Objectives

Engineering (Telecommunications and Internet Technologies)/Bachelor of Science

Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Multimedia (Networks and Computing), Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems).

HET419 Physiological Modelling

12.5 Credit Points • 1 Semester • 6 Hours per Week • Hawthorn • Prerequisite: HET128 or HMS213 • Teaching methods: Lectures, Practical and Tutorials • Assessment: Assignments, Examinations, Pracs

A subject in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering) and Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & 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.

Reference


HET424 IP Technologies

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET432 and HET1104 • Teaching methods: Online self study augmented by a weekly lecture/tutorial, laboratory work, kinaesthetic role plays and assignment work • Assessment: Online Tests, Assignments and Laboratory Work and Written Final Exam

A subject in the Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Multimedia (Networks and Computing), Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Engineering (Telecommunications and Internet Technologies)/Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives

Students should be able to:

- Understand and describe the techniques and technologies of modern Internet Protocol (IP) based LAN/WAN and computer communications.

- Configure and understand the operation of routers and use access lists to control the flow of traffic.
- Connect and set up a small LAN/WAN.
- Understand protocols used with routers such as PPP.
- Understand the concept of LAN switching and virtual LANs.
- Understand technologies such as frame relay, ISDN.

Content

This subject provides training to prepare for sitting the external CCNA certification examinations. Note the CCNA exam is conducted independently of SUT and there is a fee charged by the testing body.

The following areas will be covered:

- LAN switching, VLANs, LAN design.
- IGRP.
- Access lists.
- Novell IPX.
- WANs and WAN design.
- PPP, ISDN, frame relay.

Reference

Cisco Networking Academy Online Curriculum: Cisco-Semester-3 plus Cisco-Semester-4.

HET425 Nucleons and Spectroscopy

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET182 and HET1118 or HET124 • Teaching methods: Lectures and Practical and Tutorials • Assessment: Assignments, Examinations, Practical.

A subject in the Bachelor of Science (Biomedical Sciences), Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems) and Bachelor of Science (Research and Development)/Bachelor of Engineering (Electronics & 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 subject 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


References

AN34 ORTEC Practical Manual.


Wehr, M.R., Elementary Modern Physics, Addison-Wesley.

HET426 Instrumentation Project

12.5 Credit Points • 1 Semester • Variable depending upon project: Typically an average of 1 Hour per Week • Hawthorn • Prerequisite: Recommended completion of years 1 and 2 • Teaching methods: Independent Investigation, Meetings with Supervisors, Project Report and Seminar Presentation • Assessment: Assignments, Class Presentations, Pracs

A subject in the Bachelor of Science (Biomedical Sciences).
Aims & Objectives
The aim of this open-ended team project is to develop independent learning through practical investigation. The project develops thorough technical skills in a particular chosen area and develops leadership and communication skills.

HET431 Digital Electronic Design
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: HET210 • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Pracs, Projects)
A subject in the 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 & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Arts, Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Business, Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Business, Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering) and Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & Internet Technologies).

Aims & Objectives
To provide the student with a variety of application-oriented digital electronics design skills, including the design of complex synchronous and asynchronous systems, timing and hazard analysis for reliable design, and the use of CAD tools for design, analysis and simulation.

Content
• Family logic characteristics and interoperability.
• State machine analysis and synthesis.
• ASM models: Mealy and Moore models, register transfer notation.
• Asynchronous circuits.
• Minimisation of functions, hazards.
• Programmable logic devices: gate arrays, PLAs, PALs, PROMs, FPGAs.
• CAE tools for simulation and design.
• Hierarchical design approach.
• CAE design overview.
• Device databases.
• Schematic capture.
• Modelling and simulation.
• Synthesis tools for FPGAs.
• Logic circuit testing and testable design.

References

HET432 Internetworking
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET224 • Teaching methods: Online self study which is augmented by a weekly lecture, tutorial and laboratory work and, in some weeks, kinesthetic role plays and assignments • Assessment: Online Tests, Assignments and Laboratory Work and Written Final Exam
A subject in the Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Multimedia (Networks & Computing), Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Research and Development)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Photronics), and Bachelor of Science (Photronics)/Bachelor of Engineering (Telecommunications & Internet Technologies).

Aims & Objectives
The student should be able to:
• Explain logging into the router, user and privileged modes, help and editing features; console into the router, in user and privileged modes, and use editing and help features.
• Describe in detail the internal configuration components of a router and the role of show commands; access various router components, remotely access the router and test network connectivity.
• Flowchart the router startup sequence, and detail the role of internal components config files, and IOS:
• Diagram now to work with 11 .x config files, compare and contrast router config modes, and flowchart 11 .x config files: perform a basic router configuration.
• Flowchart and explain the sources for IOS software; load CISCO IOS software from flash, a TFTP server, and RDM.
• Explain TCP (segment format, port #s, handshakes) and IP (IP datagrams, ICMP, ARP, RARP); monitor ARP tables and remotely troubleshoot a router.
• Address and configure a network.
• Compare and contrast static and dynamic routing, routed and routing protocols, IGPs and EIGPs, and RIP and IGRP; add RIP and IGRP to the router configuration.

Content
• Review: The OSI Model, LANs, Layers 1-7, WANs.
• Routing, Using the Router, Router Components.
• Router Startup & Setup, Router Configuration.
• IOS.
• TCP/IP.
• IP Addressing.
• Routing Protocols.

Reference
Cisco Networking Academy Program On-line Curriculum, Cisco-Semester-2 (all modules)

HET436 Broadband Multimedia Networks
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET328 • Teaching methods: Lectures and Laboratory Work • Assessment: Assignments, Examinations, Labs
A subject in the Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering (Telecommunications & Internet Technologies).

Aims & Objectives
The aim of this subject 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 subject 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—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.

Reference

HET452 Wireless Communications
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET314, HET313 and HET339 • Teaching methods: Lecture, Laboratory and Assignment • Assessment: Assignments, Examinations, Pracs
Aims & Objectives

Students should be able to:

- Understand and use common mobile and personal communications terminology.
- Explain the behaviour of mobile communications systems and techniques.
- Analyse and critically 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, trunking 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, QPSK, QAM, OQPSK, PAM, PSK), constant envelope modulation (FSK, MSK, GMSK), CPM, QAM, DPSK, DQPSK, M-ary PAM.
- Multiple access systems and cellular standards: GSM, CDMA, WCDMA and capacity comparisons.

References


**HET501 Research and Development Project 5**

12.5 Credit Points  •  1 Semester  • Students are expected to spend a day per week during semester working on their project in the research centre/group concerned except by agreement with the project supervisor.  • Hawthorn  • Prerequisite: Nil  • Assessment: Assignments, Class Presentations

A subject in the Bachelor of Science (Research and Development)/Bachelor of Engineering (Electronics & 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 generic research skill development.

**HET489 Robotic Control**

12.5 Credit Points  •  1 Semester  • 6 Hours per Week  • Hawthorn  • Prerequisite: HET312  • Teaching methods: Lectures, Tutorials and Laboratory Work  • Assessment: Assignments, Examinations, Pracs

A subject in the Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Biomedical Sciences), Bachelor of Engineering (Biomedical Sciences), Bachelor of Arts, Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Business, Bachelor of Engineering (Robotics & Mechatronics) and Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & 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

The Z-Transforms

- Discrete control system analysis.
- Discrete proportional integral derivative PID controllers.
- Discrete state variable analysis.
- Stability in discrete control systems.

References


**HET503 Lasers**

12.5 Credit Points  •  1.5 Semesters  • 40 Hours  • Hawthorn  • Prerequisite: Nil  • Teaching methods: Lectures, Informal Discussion Groups  • Assessment: Assignment(s) 20%, Final Examination 80%

A subject in the Bachelor of Science (Biophotonics) Honours, Bachelor of Science (Optronics and Lasers) Honours.

Aims & Objectives

This subject 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, O-switching and mode locking.
- Examples of lasers, optical pumping systems.
- Gaussian beam characteristics and propagation.
- Resonant optical cavities, mode volume and mode selection techniques.

References

**HET504 Quantum Mechanics A**

12.5 Credit Points • 1.5 Semesters • 40 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Assignments during Semester 20%, Final Examination (End of Semester) 80%

A subject in the Bachelor of Science (Optoelectronics and Lasers) Honours

**Aims & Objectives**

This subject 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 subject, students will have sufficient understanding of quantum mechanics to describe and analyse 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.

**References**


**HET505 Advanced Optical Imaging Theory**

12.5 Credit Points • 1.5 Semesters • 40 Contact Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Assignments 50%, Essay 50%

A subject in the Bachelor of Science (Biophotonics) Honours.

**Aims & Objectives**

This subject 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.

**References**


**HET507 Atomic and Molecular Spectroscopy & Non-linear**

12.5 Credit Points • 1.5 Semesters • 40 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Assignments 20%, Final Examination 80%

A subject in the Bachelor of Science (Biophotonics) Honours, Bachelor of Science (Optoelectronics and Lasers) Honours.

**Aims & Objectives**

This subject will provide:

- A detailed understanding of the structure of atoms and molecules.
- An understanding of the main non-linear interactions between light and matter and their applications.

**Content**

The course will include a selection of topics under the following headings:

- Spectroscopic properties: Natural linewidth, doppler broadening, collisional broadening. Homogeneous and inhomogeneous broadening, power broadening. Saturation, optical pumping.
References

HET508 Optical Waveguide Theory and Optical Fibre Sensors

12.5 Credit Points • 1.5 Semesters • 40 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Assignments during Semester 20%, Final Examination (End of Semester) 80%
A subject in the Bachelor of Science (Biophotonics) Honours, Bachelor of Science (Optronics and Lasers) Honours.

Aims & Objectives
The aims of this subject 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, polarimeters 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 interferometry.
- In-fibre Bragg grating sensors.
- Characteristics of FBGs.
- Manufacture of FBGs.
- Type 1 and type 2 FBGs.
- FBG devices and sensor applications.

References

HET509 Advanced Optical Microscopy

12.5 Credit Points • 1.5 Semesters • 5 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Essay 100%
A subject in the Bachelor of Science (Biophotonics) Honours, Bachelor of Science (Optronics and Lasers) Honours.

Aims & Objectives
This subject 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.

References

HET510 Laser Optical Diagnostics in Engineering

12.5 Credit Points • 1.5 Semesters • 40 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Assignments(s) 10%, Final Examination 90%
A subject taught in the Bachelor of Science (Optronics and Lasers) Honours.

Aims & Objectives
- To provide students with a thorough understanding of the principles for selected laser optical 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.

References
Van de Hulst, H.C., Light Scattering Small Particles, Dover, N.Y., 1981.

HET511 Honours Research Project
50 Credit Points • 2 Semesters • 5 Hours per Week • Hawthorn • Prerequisite: Nil
- Teaching methods: Research Project • Assessment: Written Research Report (with Oral Defence) 100%
A subject in the Bachelor of Science (Biophotonics) Honours, Bachelor of Science (Optronics and Lasers) Honours.

Aims & Objectives
This subject aims to develop the ability to undertake original scientific research as part of a research group. At the completion of the subject 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.

References
To be advised.

HET512 Research Methods
8 Credit Points • 1 Semester • 12 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures and Informal Discussion Groups • Assessment: No Formal Assessment. Attendance Only.
A subject in the Bachelor of Science (Biophotonics) Honours, Bachelor of Science (Optronics and Lasers) Honours.

Aims & Objectives
This subject 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.
Scientific writing – Discussion of issues related to:
- Papers: structure of a scientific paper, requirements for inclusion as author, ethics.
- Minor theses: structure and requirements of an honours thesis.
Computational physics: Introduction to a modern symbolic mathematics programming language (e.g. Maple, Mathematica).

References
To be advised.

HET513 Design of DSP Architectures
12.5 Credit Points • 1 Semester • 5.5 Hours per Week (average) • Hawthorn • Prerequisite: HET529 • Teaching methods: Lectures, Labs, Tutorials • Assessment: Assignments, Examinations, Experiments.
A subject in the Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Business, Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), and Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics & Computer Systems).
Note: This subject will be offered from 2007.

Aims & Objectives
This is an advanced subject 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 FIR digital filters, parallel processing and design of parallel FIR 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.

Textbook

References

HET514 Quantum Mechanics B
12.5 Credit Points • 1.5 Semesters • 40 Hours • Hawthorn • Prerequisite: Appropriate Undergraduate Introductory Quantum • Teaching methods: Lectures, Informal Discussion Groups • Assessment: Assignments during Semester 20%, Final Examination (End of Semester) 80%
A subject in the Bachelor of Science (Optronics and Lasers) Honours.

Aims & Objectives
This subject 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.

References
Merzbacher, E., Quantum Mechanics, Wiley, 1981.

HET517 RF Electronics Design
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET232, HET378 • Teaching methods: Lectures (38 Hours), Laboratory and Project Work (30 Hours) • Assessment: Examinations, Labs, Project Work

A subject in the Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Business, Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), and Bachelor of Science (Research and Development)/Bachelor of Engineering (Electronics & Computer Systems). 

Note: This subject will be offered from 2008.

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 subject, 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).

Textbook

Recommended reading


HET527 Sleep and Attention
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET226 or HET219 • Teaching methods: Lectures, Tutorials and Seminars • Assessment: Assignments, Examinations, Labs

A subject in the Bachelor of Science (Psychology/Psychophysiology).

Note: This subject will be offered from 2008.

Aims & Objectives
This subject 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

- Gain practical skills in software design tools.
- Develop an understanding of the building blocks of a wireless telecommunication systems.
- 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.

Recommended Reference Texts

Reference Texts

See lecture notes for further references.

HET528 Telecommunication Systems
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET228 or HET218 • Teaching methods: Lectures, Tutorials and Seminars • Assessment: Assignments, Examinations

A subject in the Bachelor of Science (Telecommunication Systems).

Aims & Objectives
Gain practical skills in software design tools.

Content

- 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.

Recommended Reference Texts

Reference Texts

See lecture notes for further references.
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.

References
Hobson, J., Sleep, Scientific American Library, New York, 1996

HET528 Higher Cortical Functions
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET231 or HET226 • Teaching methods: Lectures, Tutorials and Seminars • Assessment: Assignments, Class Presentations, Examinations
A subject in the Bachelor of Arts; (Psychology/Psychophysiology) and Bachelor of Science (Psychology/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, psychophysiologival studies and models, memory pathology and neurophysiology, connectionism models.
- Speech and language: psychophysiologival models, brain laterality and language processes, disorders of speech and language.

References

HET550 Design and Development Project 1
12.5 Credit Points • 1 Semester • Variable depending upon project: Typically an average of 1 Hour per Week • Hawthorn • Prerequisite: 287.5 Credit Points Excluding IBL • Teaching methods: Staff Supervision • Assessment: The assessment of the subject is based 100% on the initial design, planning and progress as a group and an HTML presentation of the project and its progress. Due to the diversity of projects the exact allocation of marks shall be agreed upon in writing at the beginning of the semester between the student group, the Project Supervisor and the Subject Convener.
A subject in the Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Science (Computer Science & Software Engineering), Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Business, BEng (Telecommunications & Internet Technologies), BMultimedia (Networks & Computing)/BEng (Telecommunications & Internet Technologies).

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 subject 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.

References
As recommended by the supervisor to support the student’s project.

HET551 Design and Development Project 1
12.5 Credit Points • 1 Semester • Variable depending upon project: Typically an average of 1 Hour per Week • Hawthorn • Prerequisite: 287.5 Credit Points Excluding IBL • Teaching methods: Staff Supervision • Assessment: The assessment of the subject is based 100% on the initial design, planning and progress as a group and an HTML presentation of the project and its progress. Due to the diversity of projects the exact allocation of marks shall be agreed upon in writing at the beginning of the semester between the student group, the Project Supervisor and the Subject Convener.
A subject in the Bachelor of Engineering (Robotics & Mechatronics) and Bachelor of Engineering (Robotics & Mechatronics)/ Bachelor of Science (Computer Science & Software Engineering).

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 subject 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.

References
As recommended by the supervisor to support the student's project.

HET552 Design and Development Project 1
12.5 Credit Points • 1 Semester • Variable depending upon project: Typically an average of 1 1/2 Hours per Week including a Fortnightly Seminar • Hawthorn • Prerequisite: Completion of 287.5 Credit Points of the Degree Excluding IBL • Teaching methods: Staff Supervision
A subject in the Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering)
Note: This subject will be offered from 2008.

Aims & Objectives
The objective of the subject is to give the student experience in:

- Planning a complete project where time, availability of hardware, and cost are realistic constraints.
- 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 subject 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.

HET556 Design & Development Project 2
12.5 Credit Points • 1 Semester • Variable depending upon project: Typically an average of 1 Hour per Week • Hawthorn • Prerequisite: HET550 • Corequisites: In some cases the subjects HET550 and HET556 may be studied in the same semester, in which case HET550 is considered to be a corequisite. • Teaching methods: Staff Supervision • Assessment: The subject is based on completion, testing and commissioning of the project, an oral presentation and a written thesis detailing all the work undertaken in HET550 Design and Development Project 1 and HET556 Design and Development Project 2. Due to the diversity of projects the exact allocation of marks shall be agreed upon in writing between the student group, the Project Supervisor and the Subject Convenor.
A subject in the Bachelor of Engineering (Telecommunications 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 Engineering (Electronics and Computer Systems)/Bachelor of Arts, Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Business, Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies) and the Bachelor of Engineering (Robotics & 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 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.

References
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 • Prerequisite: HET551 • Corequisites: In some cases the subjects HET551 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 subject in the Bachelor of Engineering (Robotics & Mechatronics) and Bachelor of Engineering (Robotics & Mechatronics) / Bachelor of Science (Computer Science & 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.

References
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 • Prerequisite: HET225 • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Labs
A subject in the Bachelor of Engineering (Electronics & 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...
Prerequisite: Nil  
Teaching methods: Online, CD-ROM & Internet Links, 
Equivalent to 5 Hours per Week  
Online

HET603 Exploring Stars and the Milky Way

Aims & Objectives
To provide an introduction to the birth, life and death of stars and the structure of our galaxy. The emphasis will be on conceptual astronomy, not mathematical techniques.

Content
- The bulk properties & structure of the Sun.
- Distance, magnitudes, colours and spectral types of the stars.
- Binary star systems and masses of the stars.
- Gas, dust and nebulae and the birth of stars.
- Evolving onto the main sequence.
- Life on the main sequence, lifetime and mass-luminosity relations.
- How a 1 solar mass star evolves off the main sequence.
- Red giants and variables, planetaries and white dwarfs
- Supernovae, supernovae remnants and creation of the elements.
- Neutron stars and pulsars, millisecond pulsars.
- Novae, CVs and supernova type 1s; X-ray astronomy, black holes.
- Globular clusters, the structure of the Milky Way, the galactic centre.
- Missing matter and brown dwarfs.
- The search for extra-solar planets.
- The search for extraterrestrial intelligence.

Reference

HET604 Exploring Galaxies and the Cosmos

Aims & Objectives
This unit is designed to provide an introduction to galaxies and galaxy clustering, theories of dark matter, galactic evolution and introductory cosmology.

Content
- The Milky Way: structure, rotation curve & dark matter, MACHOs and WIMPs, spiral arms and density wave theory, galactic centre, modelling the origin of the Milky Way.
- The structure and classification of normal galaxies: spiral, elliptical and hybrid families.
- 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.

References
Leondard, W., Control of Electrical Drives, Springer-Verlag, 1985.
Reference

HET631 Psychophysiology
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET627 or HET628 • Teaching methods: Lectures, Tutorials and Seminars • Assessment: Assignments, Examinations, Tests
A subject in the Bachelor of Arts (Psychology/Psychophysiology) and Bachelor of Science (Psychology/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.

References

HET701 Research and Development Project 7
12.5 Credit Points • 1 Semester • Students are expected to spend a day per week during semester working on their project in the research centre/group concerned except by agreement with the project supervisor. • Hawthorn • Prerequisite: Nil • Assessment: Assignments, Class Presentations
A subject in the Bachelor of Science (Research and Development)/Bachelor of Engineering (Electronics & 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. 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 • Teaching methods: Lecture and Laboratory classes. • Assessment: Examinations, Computer Skill Test, Workbook
A subject in the Bachelor of Science in Psychology/Psychophysiology (Honours).

Aims & Objectives
This subject provides a conceptual framework for understanding that there is a case for mental states being comprehensible in terms of neurobiological states.

Content
The objective of this unit is to prepare students to be able to analyse scientific concepts in context and to appreciate the origins of scientific method and the history of science.

Recommended reading
Chalmers, A.F. (1982) What is this thing called science? 2nd edn., St, Lucia, Qld, UQP.

HET738 Neuropsychology Methods
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Tutorials • Assessment: Case Studies, Examinations
A subject in the BAppSci (Psychology/Psychophysiology)(Hons), Bachelor of Arts (Honours) - Psychology stream and Postgraduate Diploma of Psychology.

Aims & Objectives
To examine issues in physiological psychology and neuropsychology.

Content
• Methods in neuropsychology
• Frontal, parietal, temporal and occipital lobes structure, function and disorders associated with damage
• Subcortical structure, function and disorders associated with damage
• Hemispheric asymmetry and related asymmetries in cognition
• Child clinical neuropsychology
• Biological bases of neuropsychological disorders.

Reference

HET770 Methodology and Literature Review
25 Credit Points • 1 Semester • Negotiated with Supervisor • Hawthorn • Prerequisite: Nil • Teaching methods: Independent Investigation and Meetings with Supervisor • Assessment: Seminar Presentation and Submission of Literature Review
A subject 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.

References
As recommended by the supervisor to support the student’s project.

HET775 Minor Research Manuscript
37.5 Credit Points • 1 Semester • Negotiated with Supervisor • Hawthorn • Prerequisite: Nil • Teaching methods: Independent Investigation and Meetings with Supervisor • Assessment: Submission of a Research Manuscript
A subject 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 area and develops communication and research skills.

References
As recommended by the supervisor to support the student’s project.

HET780 Research Manuscript
50 Credit Points • 1 Semester • Negotiated with Supervisor • Hawthorn • Prerequisite: Nil • Teaching methods: Independent Investigation and Meetings with Supervisor • Assessment: Submission of a Research Manuscript
A subject 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 area, as well as communication and research skills.

References

As recommended by the supervisor to support the student’s project.

HET801 Honours Project 1

37.5 Credit Points • 1 Semester • At least (4) one hour duration lectures on operational research. Regular contact time negotiated with supervisor. Hawthorn. Prerequisite: BaAppSci or BSc in Biomedical Sciences, Psychology & Psychophysiology, or equivalent. Teaching methods: Supervised research. Assessment: Seminar Presentation and submission of research synopsis. A subject in the Bachelor of Science in Psychology/Psychophysiology (Honours).

Aims & Objectives

The aim of this subject is to prepare students for undertaking their research project. Material which ensures that they are able to plan, execute and analyse 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 subject is meant to allow the student to continue their work in Semester 2 as part of HET802 Honours Project 2.

References

As recommended by the supervisor to support the student's specific project synopsis and project topic.

HET802 Honours Project 2

37.5 Credit Points • 1 Semester • Regular contact time (at least 1 hour per week) negotiated with supervisor. Hawthorn. Prerequisite: BaAppSci or BSc in Biomedical Sciences, Psychology & Psychophysiology, or equivalent. Teaching methods: Supervised research. Assessment: Seminar Presentation and submission of literature review. A subject in the Bachelor of Science in Psychology/Psychophysiology (Honours).

Aims & Objectives

The aim of this subject is to develop independent learning through practical investigation. The project develops thorough skills in a particular chosen area and develops communication skills.

References

As recommended by the supervisor to support the student’s specific project topic.

HET830 Biomedical Research Topics

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn. Prerequisite: BaAppSci or BSc in Biomedical Sciences, or equivalent. Teaching methods: Lectures, seminar, workshops and industry visits. Assessment: Seminar Presentation and submission of critical dissertation. A subject in the Bachelor of Science in Psychology/Psychophysiology (Honours).

Aims & Objectives

The aim of this subject is to expose students to advanced techniques and knowledge in biomedical sciences by means of lectures, seminars and independent investigation. Both theoretical and practical approaches are acceptable. Presentations will be focused 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.

References

As required by the individual topics and lectures.

HFTV000 Industry Based Learning Placement

37.5 Credit Points • 24 Weeks • Prerequisite: Successful completion of semester 3 and 4 subject requirements • Teaching methods: To experience through contact, observation and practice the disciplines of the film, television and multimedia industry 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 subject in the Bachelor of Film and Television

Aims & Objectives

Generally, to provide the opportunities for selected students to further their practical film, television and multimedia education while working in industry. Specifically: to develop practical film, television and multimedia 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 National Institute of Design in cooperation with employers.

HFTV111 Film & Television Technology 1

25 Credit Points • 12 Weeks • 9 Hours per Week • Prerequisite: Nil • Teaching methods: Production studio, laboratory and seminar-based tuition with continual practical experience through exercises and set tasks. Assessment: Projects will be appraised progressively. Assessment criteria will depend upon project content. All areas of activity consist mainly of practical exercises. A subject in the Bachelor 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 instill the importance of working within industry guidelines and practice.

Content

Technology 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 Pre-Visualisation, Production Pathways, and Production Management. It will provide students with a comprehensive and practical introduction to industry standard production equipment, 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 production outcome.

• Introduction to Production Protocols
• Concepts in Visual Language and Realisation
• Introduction to Pre-Visualisation
• Production principles and techniques including Lighting, Cinematography, Editing, Sound Recording and Production Pathways
• Introduction to Production Equipment
• Practical experience in both traditional and digital filmmaking techniques

References

HFTV121 Film & Television Technology 2

25 Credit Points • 12 Weeks • 9 Hours per Week • Pratran • Prerequisite: HFTV111 and HFTV101 • Assessment: Projects will be appraised progressively. Assessment criteria will depend upon project content as all areas of activity consist mainly of practical exercises.

A subject in the Bachelor 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 HFTV111 - F&TV Technology 1

Content
Technology 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 offers students an opportunity 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

References
Bellantonio, J. Type in Motion. TBA.
Curnan, S. Motion Graphics: Graphic design for Broadcast and Film.
be appraised progressively. Assessment criteria will depend upon project content as all areas of activity consist mainly of practical exercises.

A subject in the Bachelor of Film and Television

Aims & Objectives

- To consolidate the scriptwriting skills developed in Semesters One and Two.
- To consolidate the pre-visualisation skills developed in Semesters One and Two.
- To further advance skills in the area of concept and project development.
- To fully develop and document an original project for production in Semester Four.

Content

This subject focuses on the process of ideas development and pre-visualisation. Students develop a new project in preparation for production in Semester 4. 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.

References


HFTV233 Screen Techniques 1

12.5 Credit Points • 12 weeks • 4 Hours per Week • Prahran • Prerequisite: Successful completion of HFTV111 / HFTV121 • Teaching methods: Production Studio, Laboratory and seminar based tuition with self-directed research and production supervision. • Assessment: Project will be appraised progressively. Assessment criteria will depend upon project content as all areas of activity consist mainly of practical exercises.

A subject in the Bachelor of Film and Television

Aims & Objectives

- To further extend the production skills and practices developed in Semesters One and Two.
- 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 subject provides students with the 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 pathways 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 subject may also provide the opportunity for industry based production attachments.

References


HFTV241 Film & Television Technology 4

12.5 Credit Points • 12 weeks • 6 Hours per Week • Prahran • Prerequisite: Successful completion of HFTV231 • Teaching methods: Production studio, laboratory and seminar based tuition with continual practical experience through exercises and set tasks. • Assessment: Projects will be appraised progressively. Assessment criteria will depend upon project content as all areas of activity consist mainly of practical exercises.

A subject in the Bachelor 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

Content

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 subject 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

References

Curran, S. Motion Graphics: Graphic Design for Broadcast and Film.

HFTV242 Film & Television Project Series 2

25 Credit Points • 12 weeks • 7 Hours per Week • Prahran • Prerequisite: Successful completion of HFTV232 • Teaching methods: Production Studio,
Laboratory and seminar based tuition with continual practical experience through exercises and set tasks. Assessment: Projects will be appraised progressively.

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 subject focuses on the practical implementation of the fundamental aspects of film, video and digital imaging production process. 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.

References


HFTV243 Screen Techniques 2

12.5 Credit Points • 12 weeks • 4 Hours per Week • Prahran • Prerequisite: Successful completion of semester 1 and 2 subject requirements • Teaching methods: Production Studio, Laboratory and seminar based tuition with continual practical experience through exercises and set tasks. Assessment: Projects will be appraised progressively. Assessment criteria will depend upon project content.

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 subject 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 subject may also provide the opportunity for industry based production attachments.

References


HFTV351 Film & Television Project Research Series 3

12.5 Credit Points • 12 weeks • 4 Hours per Week • Prahran • Prerequisite: Successful completion of F&TV Technology 1 - 2 • Teaching methods: Production Studio, Laboratory and seminar based tuition with self-directed research and production supervision. Assessment: Projects will be appraised progressively. Assessment criteria will depend upon project content.

Aims & Objectives

- To further consolidate the scriptwriting skills and pre-visualisation skills developed in previous Semesters.
- To further advance skills in the area of concept and project development.
- To fully develop and document an original project for production in Semester Six.
- To develop further independent research skills in relation to industry standard production practice and pathways.

Content

This subject focuses on the process of ideas development and pre-visualisation. Students will again fully develop a new project in preparation for production in Semester Six. They will rehearse their chosen subject, production pathways, production techniques and visual style and will develop industry standard pre-visualisation documentation. This documentation will include a synopsis, treatment, final draft script, style guide, storyboard, animatic, production budget and schedule. Project research will also be documented and submitted for assessment.

References


HFTV352 Film & Television Group Research Project 1

25 Credit Points • 12 weeks • 9 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Production Studio, Laboratory and seminar based tuition with self-directed research and production supervision. Assessment: Assessment will be continuous.

Aims & Objectives

- To further establish the collaborative process of production and post-production within industry standard models.
- To enable a deeper understanding of the various creative and technical roles within the production and post-production processes.
- To foster effective communication within a team production environment.

Content

Within the context of thematic framework for content and/or delivery students will collaborate to produce an industry standard production outcome. Students will establish and perform key creative roles as observed in industry production models. The group will be expected to manage their production and post-production processes in accordance with industry practice. This subject will result in fully
documented and presented research, pre-visualisation, production workbook and post-production outcomes in addition to the project deliverables.

References

HFTV361 Film & Television Project Research Series 2
25 Credit Points • 12 weeks • 9 Hours per Week • Prahran • Prerequisite: Successful completion of HFTV351 • 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 subject in the Bachelor of Film and Television

Aims & Objectives
• To further consolidate the production skills developed in previous semesters.
• To further consolidate the post-production skills developed in previous semesters.
• To further advance skills in specific areas of industry-based production practice.
• To realise the production research and proposal developed in Project Research

Content
This subject 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 according to 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 subject outcome requirements.

References

HFTV362 Film & Television Group Research Project 2
12.5 Credit Points • 12 weeks • 4 Hours per Week • Prahran • Prerequisite: Successful completion of semester 3 and 4 subject requirements • Teaching methods: Projects will be conducted in a studio environment, on location, student consultation/discussion, demonstrations and critiques. • Assessment: Projects will be appraised progressively. Assessment criteria will depend upon project content.
A subject in the Bachelor of Film and Television

Aims & Objectives
• To further develop the collaborative process of production and post-production within industry standard models.
• To enable a deeper understanding of the various creative and technical roles within the production and post-production processes.
• To foster effective communication within a team production environment.
• To further develop levels of expertise within specific production areas.

Content
This subject provides students with a further opportunity to specialise within a collaborative model for a range of creative and technical production outcomes. Within the context of thematic framework for content and/or delivery, students will collaborate to produce an industry standard production outcome. Students will establish and perform key creative roles as observed in industry production models. The group will be expected to manage their production and post-production processes in accordance with industry practice. Students with interests in particular production areas will be encouraged to research and pursue specific pathways in a collaborative production environment. Industry professionals may be invited to provide specialist training within chosen fields of expertise.

References

HFTV471 Film & Television Technology H1
25 Credit Points • 12 weeks • 9 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Projects will be conducted in a studio environment, on location, through lectures, student consultation/discussion, demonstrations and critiques. • Assessment: Projects will be appraised progressively.
A subject in the Bachelor of Film and Television

Aims & Objectives
• To establish independent research methodologies relating to implementation of film, television and digital imaging technologies.
• To develop high levels of expertise within specific production areas.
• To realise industry standard production outcomes from the research of specific technologies.

Content
Students will research and develop project outcomes within a chosen technology area. This subject will provide the opportunity for students to develop innovative production outcomes within a supportive environment. Students will explore the research, creative and technical aspects of their chosen production pathway for a resolved outcome.

References

HFTV472 Film & Television Individual Research Project
12.5 Credit Points • 12 weeks • 6 Hours per Week • Prahran • Prerequisite: Successful completion of semesters 5 and 6 subject requirements • 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 subject in the Bachelor of Film and Television
Aims & Objectives
- To further consolidate the scriptwriting skills and pre-visualisation skills developed in previous semesters and/or industry placement.
- To further advance skills in the area of concept and project development.
- To fully develop and document an original project for production in Semester Eight.
- To develop further independent research skills in relation to industry standard production practice and pathways.

Content
This subject focuses on the processes of ideas development and pre-visualisation. Students will again fully develop a new project in preparation for production in Semester Eight. They will research their chosen subject, production pathways, production techniques and visual style and will develop industry standard pre-visualisation documentation. This documentation will include a synopsis, treatment, final draft script, style guide, storyboard, animatic, production budget and schedule. Project research will also be documented and submitted for assessment.

References

HFTV473 Film & Television Group Research Project H1
12.5 Credit Points • 12 weeks • 3 Hours per Week • Prahran • Prerequisite: Successful completion of semesters 5 and 6 subject requirements • Teaching methods: Projects will be conducted in a studio environment, on location, through lectures, student consultation/discussion, demonstrations and critiques. • Assessment: Projects will be appraised progressively.
A subject in the Bachelor of Film and Television

Aims & Objectives
- To further establish the collaborative process of production and post-production within industry standard models.
- To enable a deeper understanding of the various creative and technical roles within the production and post-production processes.
- To foster effective communication within a team production environment.

Content
Within the context of thematic framework for content and/or delivery student will collaborate to produce an industry standard production outcome. Students will establish and perform key creative roles as observed in industry production models. The group will be expected to manage their production and post-production processes in accordance with industry practice.

References

HFTV482 Film & Television Individual Research Project H2
25 Credit Points • 12 weeks • 6 Hours per Week • Prahran • Prerequisite: Successful completion of HFTV472 • 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 subject in the Bachelor of Film and Television

Aims & Objectives
- To demonstrate high level production skills developed in previous semesters.
- To demonstrate high level post-production skills developed in previous semesters.
- To further advance skills in specific areas of industry-based production practice.
- To realise the production research and proposal developed in HFTV472 - F&T Individual Research Project Series H1.

Content
This subject 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 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 subject outcome requirements.

References

A subject in the Bachelor of Film and Television

Aims & Objectives

- To further establish the collaborative process of production and post-production within industry standard models.
- To enable a deeper understanding of the various creative and technical roles within the production and post-production processes.
- To foster effective communication within a team production environment.
- To further develop levels of expertise within specific production areas.

Content
This subject provides students with a further opportunity to specialise within a collaborative model for a range of creative and technical production outcomes. Students will collaborate to produce an industry standard production outcome. Students will establish and perform key creative roles as observed in industry production models. The group will be expected to manage their production and post-production processes in accordance with industry practice. Students with interests in particular production areas will be encouraged to research and pursue specific pathways in a collaborative production environment.

References

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.

References

Aims & Objectives

- To understand the fundamental concepts of computer systems.
- To gain experience in assembly language programming.

Content

- Functions and components of computers.
- Data representation.
- Computer logic.
- Elementary assembly language programming.
- Secondary storage and input/output devices.

References

Aims & Objectives

- To understand the fundamental concepts of computer systems.
- To gain experience in assembly language programming.

Content

- Functions and components of computers.
- Data representation.
- Computer logic.
- Elementary assembly language programming.
- Secondary storage and input/output devices.

References
Aims & Objectives

- To instil in students the confidence to use information technology, particularly computers.
- To give all students a broad understanding of information systems in the business environment.
- To endow students with computer skills that will be of benefit to them in other discipline subjects, and in their later careers.
- To provide a firm basis as a pre-requisite for second- and third-level computing subjects.

Content

- Theory of information systems, as used by business and organisations.
- Word processing, using Microsoft Word.
- Spreadsheets, using Microsoft Excel.
- Databases, using Microsoft Access.
- Web development

References


HIT1031 Introduction to Software Engineering

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1051 • Assessment: Assignments, Examinations

A subject in the Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Computing), Bachelor of Engineering (Telecommunications & Information Technologies/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Information Systems, Bachelor of Science (Computer Science & Software Engineering), Bachelor of Information Systems/Bachelor of Business, Bachelor of Information Technology, Bachelor of Multimedia (Multimedia Software Development), Bachelor of Software Engineering, Bachelor of Science (Photonic), Bachelor of Science (Photonic)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Multimedia (Networks and Computing) and the Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies).

Aims & Objectives

- To introduce in a small team environment the basic problems that are encountered in the development of software.
- To examine some of the current techniques and tools which are used by industry to address the above problems.
- To allow students to experience the preparation of systems development documentation, working as members of small teams (3–4 persons) and using an object-oriented development perspective.

Content

- What is software engineering?
- The software development lifecycle.
- Techniques for requirements elicitation.
- Software design as an incremental, iterative process.
- Software defect management, including defect identification and fault detection.
- Software validation and verification.

References


HIT1051 Software Development 1

12.5 Credit Points • 1 Semester • 57 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lecture, Tutorial, Laboratory • Assessment: Assignments, Examinations

A subject in the Bachelor of Science (Computing), Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics) / Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Telecommunications & Internet Technologies/Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Systems, Bachelor of Information Systems/Bachelor of Business, Bachelor of Information Technology, Bachelor of Multimedia (Multimedia Software Development), Bachelor of Software Engineering, Bachelor of Science (Photonic), Bachelor of Science (Photonic)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Multimedia (Networks and Computing) and the Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies).

Aims & Objectives

- To introduce basic concepts of object-oriented analysis and design.
- To introduce object-oriented programming using Java.
- To study the main features of the software development process in an object-oriented framework.

Content

- The object-oriented world view.
- Introduction to object-modeling.
- Introduction to implementation of objects and classes.
- Contracts: pre- and post-conditions and assertions.
- Control structures.
- Input–output.
- Event-driven programs.
- Introduction to class libraries.
- Use of an OO notation.

Textbook


Notes

Allen, R.K., Bluff K., Oppenheim, A.B., Object-Oriented Software Development 1, 6th edn, Swinburne, 2002. (Contains lecture notes and laboratory material.)

References


HIT1052 Software Development 2

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HIT1051 • Teaching methods: Lecture (2 Hours per Week), Laboratory/Tutorial (2 Hours per Week) • Assessment: Assignments, Examinations

A subject in the Bachelor of Science (Computer Science & Software Engineering), Bachelor of Science (Computing), Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics) / Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Telecommunications & Internet Technologies/Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Systems, Bachelor of Information Systems/Bachelor of Business, Bachelor of Information Technology, Bachelor of Multimedia (Multimedia Software Development), Bachelor of Software Engineering, Bachelor of Science (Photonic), Bachelor of Science (Photonic)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Multimedia (Networks and Computing) and the Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies).
Aims & Objectives

- To extend and strengthen basic concepts of object-oriented programming using Java.
- To study GUI software development using Java.

Content

- Intermediate programming.
- The dynamic model.
- Java language and Java system.
- Graphical User Interface programming in Java.
- Exceptions.
- Files and streams.
- Design principles and introduction to patterns.

References


HIT1091 Web Development

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT1009 • Corequisites: HIT1051 • Teaching methods: Lecture (2 Hours per Week), Laboratory (1 Hour per Week) • Assessment: Assignments, Examinations

A subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Systems, Bachelor of Software Engineering and Bachelor of Science (Computing)

Aims & Objectives

To introduce the technology of the Internet and World Wide Web and to develop an understanding of the technologies associated with programming for the World Wide Web.

Content

- Introduction to the World Wide Web: definition, history and fundamental concepts.
- HTML: document structure, images, links, maps, tables, frames, forms.
- Protocols and server technology: HTTP, TCP/IP, MIME, URLs, CGI, server technology.
- JavaScript: syntax, DOM, forms processing, common tasks.
- Style sheets: fundamentals, CSS formatting, CSS positioning, standards.
- DHTML: dynamic techniques, proprietary techniques, data-aware documents.
- Web design and usability: principles of navigation, usability, style guides, standards.
- Introduction to XML: syntax, DTDs, XSL, XHTML.
- Multimedia: audio, video, animation, multimedia server and protocol technology.
- Web development tools: editors, site management tools.

Textbook


References


HIT1109 Introduction to Programming

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil

Aims & Objectives

- To teach basic concepts of object-oriented analysis and design.
- To introduce object-oriented programming using Java.
- To study the main features of the software development process in an object-oriented framework.

Content

- The object-oriented world view.
- Introduction to object-modelling.
- Introduction to implementation of objects and classes.
- Contracts: pre- and post-conditions and assertions.
- Control structures.
- Input–output.
- Event-driven programs.
- Introduction to class libraries.
- Use of an OO notation.

Textbook


References

Allen, R.K., Bluff, K., Oppenheim, A.B., Object-Oriented Software Development 1, 6th edn, Swinburne, 2002. [Contains lecture notes and laboratory material.]

Notes

Aims & Objectives

- To extend and strengthen basic concepts of object-oriented programming using Java.
- To study GUI software development using Java.

Content

- Intermediate programming.
- The dynamic model.
- Java language and Java system.
- Graphical User Interface programming in Java.
- Exceptions.
- Files and streams.
- Design principles and introduction to patterns.

References


HIT2005 Information Technology Infrastructure

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HIT1025 • Teaching methods: Lecture, Laboratories • Assessment: Assignments, Examination

A core subject in the Bachelor of Information Technology and available as an elective in the Bachelor of Information Systems and the Bachelor of Information Systems/Bachelor of Business.

Aims & Objectives

- To provide a practical introduction to contemporary computer hardware, operating systems and networks.

Content

- Hardware: PC architecture, components and peripherals.
- Operating systems: Windows and Linux operating systems, architectures, system administration and security.
- Networks: major network architectures, Novell, Microsoft, network administration, security.
- Management of corporate IT infrastructures: acquisition, deployment and maintenance.

References


HIT2013 COBOL Programming

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1051 or HIT1009 or equivalent introductory programming subject • Teaching methods: Lectures, Tutorials, Laboratory • Assessment: Assignments, Examination

A subject in the Bachelor of Information Systems, Bachelor of Information Systems/Bachelor of Business, and Bachelor of Information Technology.

Aims & Objectives

- To provide students a sound understanding of the principles and practice of procedural programming.
- To produce students worthy of immediate hire as trainee programmers in a commercial COBOL environment.

Content

- Programming process, from problem definition through to program testing.
- Designing a logical structured solution to a problem, using structure charts and pseudocode.
- Reading, understanding, modifying and debugging COBOL programs.
- Designing, coding, testing, and documenting attractive, well-structured programs in COBOL, involving sequential files, indexed files, reports, control breaks, data validation, character string manipulation, tables, arithmetic.

References


HIT2016 Database 1

12.5 Credit Points • 1 Semester • 46 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Tutorials, Laboratory • Assessment: Assignments, Examinations

A subject in the Bachelor of Multimedia (Networks and Computing), Bachelor of Multimedia (Networks and Computing)/Bachelor of Computing (Telecommunications and Internet Technologies), Bachelor of Science (Computer Science and Software Engineering), 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 Technology, Bachelor of Information Systems, Bachelor of Information Systems/Bachelor of Business, Bachelor of Multimedia (Multimedia Software Development), and Bachelor of Software Engineering.

Aims & Objectives

- To provide a solid theoretical foundation to the fundamentals of database design and database systems development.
• To provide sufficient practical exposure to designing and using database so as to equip students for basic database tasks in industry and government.
• To provide students with experience in the analysis, design and generation of a simple inquiry and update system, using ORACLE.
• To give students an understanding of the problem in its context, the need for adequate documentation of the system and management of this data to ensure that the information produced is relevant, accurate and maintainable. Students will use conceptual data analysis methods to produce a logical data model.

Content
• Information in the organisation.
• The relational data model.
• Structured Query Language (SQL).
• Functional dependency diagrams.
• Entity relationship analysis.
• Client server database technologies.
• Normalisation of data.
• DBMS terminology and concepts.
• Data integrity.

References

HIT2024 Introduction to Human-Computer Interaction
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: Introductory Programming, e.g. HIT1009 or HIT1051 • Teaching methods: Lecture (2 Hours per Week), Laboratory/Tutorial (1 Hour per Week) • Assessment: Assignments, Examination
A subject in the Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Science (Computer Science and 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 Multimedia (Multimedia Software Development), Bachelor of Software Engineering.

Aims & Objectives
By the end of the subject, 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.
• Conceptual design and metaphors.
• Physical design principles, design guidelines and rules.
• Prototyping techniques.
• Input–output devices and dialogue techniques.
• Principles of human-centred software evaluation.
• Coherence, contextual and participatory design.
• Evaluation without users: Heuristic evaluations, walkthroughs, automated critiques and predictive models (GOMS, Keystoke Level Model).
• Evaluation with users: Usability testing, interviews, questionnaires, ethics of user testing.
• Experimental design and data analysis.

References

HIT2049 Systems Analysis & Design
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1025.
Prerequisite: HIT1031 • Teaching methods: Lectures, Tutorials • Assessment: Assignments, Examinations
A subject in the Bachelor of Information Systems and Bachelor of Information Systems/Bachelor of Business.

Aims & Objectives
• To equip the student with the necessary knowledge, skills, models and techniques to model business problems in both the Structured and Object-Oriented systems development paradigms.
• To concentrate on the front-end phases and activities of the Systems Development Life Cycle (SDLC).

Content
• Understanding a problem in its business context.
• Introduction to project management tools and techniques relevant for a systems analyst.
• SDLC models.
• Approaches to systems development.
• Investigating systems requirements.
• Structured and Object-Oriented modelling techniques to model various perspectives of the system.
• Modelling techniques are structured paradigm, context diagram, data flow diagrams, data element and data flow definitions and process descriptions.
• Object-Oriented Paradigm: OOO context diagram, class analysis diagram, use-case diagram, activity diagram, sequence diagram.

References

HIT2056 Software Project Management
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1031 or HIT2049 • Teaching methods: Lectures, Tutorials • Assessment: Assignments, Examination
A core subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Software Engineering, and Bachelor of Engineering (Telecommunications and Internet Technologies)/Bachelor of Science (Computer Science and Software Engineering), and Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (CS&SE). Also available as an elective in the Bachelor of Science (Computing) and Bachelor of Science (Information Technology).

Aims & Objectives
This subject builds on the work done in HIT1031 on small software development projects, introducing some of the problems of large software development projects. The objectives are:
To introduce the C programming language.

To introduce imperative programming principles.

Aims & Objectives

Note: This course is only available to students in engineering and non-IT courses.

Science (Psychology/Psychophysiology), Bachelor of Science (Medical Biophysics & Instrumentation), Bachelor of Science (Biomedical Sciences), Engineering (Electrical & Electronic Engineering), Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Computational Biology and Biotechnology).

Teaching methods: Lecture, Laboratory (2 Hrs per Week Each)  Assessment:

12.5 Credit Points  1 Semester  48 Hours  Hawthorn  Prerequisite: Nil

HIT2080 Introduction to Programming

12.5 Credit Points  • 1 Semester  • 48 Hours  • Hawthorn  • Prerequisite: Nil  • Teaching methods: Lecture/Tutorial (2 Hrs per Week), Laboratory (2 Hrs per Week)  • Assessment: Laboratory Assignments, Examination

A subject in the Bachelor of Science (Biochemistry) and Bachelor of Science (Biotechnology).

Aims & Objectives

• Introduce students to computing concepts, provide an appreciation of computer systems, their hardware and software.
• Provide training and insights into a selection of relevant software application packages.
• Provide a brief exposure to programming.

Content

• Computer hardware: typical personal computer systems, an overview of computer architecture, peripheral devices, networks and the Internet.
• Software tools: operating system commands; Microsoft Office packages.
• An introduction to programming in a high-level language, including particular reference to its use in the software packages being studied.

References


HIT2079 Computing for Chemists

12.5 Credit Points  • 1 Semester  • 36 Hours  • Hawthorn  • Prerequisite: Nil  • Teaching methods: Lecture/Tutorial (2 Hrs per Week), Laboratory (2 Hrs per Week)  • Assessment: Laboratory Assignments, Examination

A subject in the Bachelor of Science (Biochemistry) and Bachelor of Science (Biotechnology).

Aims & Objectives

• Introduce students to computing concepts, provide an appreciation of computer systems, their hardware and software.
• Provide training and insights into a selection of relevant software application packages.
• Provide a brief exposure to programming.

Content

• Computer hardware: typical personal computer systems, an overview of computer architecture, peripheral devices, networks and the Internet.
• Software tools: operating system commands; Microsoft Office packages.
• An introduction to programming in a high-level language, including particular reference to its use in the software packages being studied.

References


HIT2092 Advanced Web Technologies

12.5 Credit Points  • 1 Semester  • 3 Hours per Week  • Hawthorn  • Prerequisite: HIT1091 or HIT113; and HIT1051 or HIT1009. Preclusion: HIT3041  • Teaching methods: Lecture (2 Hrs per Week), Laboratory (1 Hr per Week)  • Assessment: Assignments, Examination

A subject in the Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Software Engineering.

Aims & Objectives

To introduce the technologies, concepts and techniques associated with the development of complex Web-based applications.

Content

• Web Servers: PWS, IIS
• Active Server Pages (ASP): programming ASP, database connectivity, e-commerce concepts.
• Introduction to CGI Programming/Perl.
• Introduction to PHP

Textbook


References

Wille, et al., Teach Yourself ASP in 24 Hours, SAMS, 1999.

HIT2100 Industry-Based Learning

50 Credit Points  • 20 Weeks  • Nil  • Hawthorn  • Prerequisite: This subject is a mandatory component of the Bachelor of Information Technology program.  • Teaching methods: Active participation in the workplace under the direction and supervision of the sponsoring organisation and a nominated Swinburne supervisor  • Assessment: Written Report, Written Evaluations and an Oral Presentation

A subject in the Bachelor of Information Technology.

Aims & Objectives

While the learning activity is undertaken in commercial environments, the objects are educational, not commercial.

The objectives of the subject are broadly stated as:
• Personal development.
• Exposure to the environment and culture of business/industry.
• Development of information technology skills.

Content

HIT2100 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.

References
Nil.

HIT2110 Programming in VB.NET
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HIT1009 or HIT1051 or equivalent introductory programming subject • Teaching methods: Lecture, Tutorial, Laboratory • Assessment: Assignments, Examinations
A subject in the Bachelor of Information Systems, Bachelor of Information Systems/Bachelor of Business and Bachelor of Science (Computing).

Aims & Objectives
On completion of this subject, students will be able to:
• Create solutions using Visual Studio .NET
• Create DLL and EXE projects in Visual Studio .NET
• Use the .NET Framework class library
• Use the MSDN library to understand how to use standard .NET components
• Develop Windows forms
• Work with class libraries
• Develop complex programs, including the use of: Modules, Classes, Events, Inheritance, Interfaces, Abstract Classes

Content
• Introduction to Visual Basic .NET Syntax
• Detailed examination of Object Oriented Programming
• Console application development
• Windows application development
• Introduction to Object Modelling
• Introduction to working with Classes and Objects

References

HIT2114 Operating Systems (Linux)
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1052 and HIT1015. Preclusions: HIT2082 • Teaching methods: Lecture (2 Hours per Week), Tutorial/Laboratory (1 Hour per Week) • Assessment: Assignments, Examinations
A subject in the Bachelor of Software Engineering and Bachelor of Science (Computer Science & Software Engineering).

Aims & Objectives
To introduce the fundamentals of operating systems.

Content
• An overview of computer systems and future trends.
• Processes and concurrency.
• Processor scheduling.
• Memory management and virtual memory design issues.
• I/O systems and file management.
• Case studies: UNIX, Microsoft Windows.

References

HIT2120 Data Communications and Security
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HIT1052 • Teaching methods: Lecture (2 Hours per Week), Laboratory (2 Hours per Fortnight) • Assessment: Assignments, Examinations
A subject in the Bachelor of Science (Computer Science & Software Engineering), Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Multimedia (Multimedia Software Development), Bachelor of Software Engineering.

Aims & Objectives
• To introduce the fundamental concepts and components involved in data communications.
• To develop an understanding of 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.

References

HIT2253 Data Structures and Algorithms
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HIT1052 • Teaching methods: Lectures, Laboratories • Assessment: Assignments, Examinations
A subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Computing), Bachelor of Science (Mathematics and Computing), Bachelor of Engineering (Robotics and Mechatronics)/Bachelor of Science (Computing Science and Software Engineering), Bachelor of Engineering (Telecommunications and Internet Technologies)/Bachelor of Science (Computer Science and Software Engineering), Bachelor of Multimedia (Multimedia Software Development), Bachelor of Software Engineering.

Aims & Objectives
• To understand and use the common data structures and algorithms.
• To improve skills in Java programming.

Content
• Time analysis of algorithms.
• Collection classes in general.
• Linked lists, iterators, stacks, queues, trees, graphs, has tables.
• Searching and sorting algorithms.
• Relevant facilities in the Java Foundation Class Library.

References

HIT3007 Business Computing Applications
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT2008 or HIT1004 • Teaching methods: Lectures, Tutorials, Laboratory • Assessment: Assignments, Examinations
A subject in the Bachelor of Information Systems and Bachelor of Information Systems/Bachelor of Business.

Aims & Objectives
• To provide students with an understanding of the characteristics and requirements of business information systems applications, including accounting, marketing, manufacturing, financial and human resources computer-based systems.
• To examine the impact of information quality and effective reports and reporting on both the operational and managerial area of an organisation.
• To consider the roles of information and communications technology within enterprise wide and global business contexts, especially electronic commerce.
• To identify the essential elements of Decision Support Systems, especially on Enterprise Information System and Executive Information System.
• To design, implement and manipulate files using electronic spreadsheet, DBMS and MIS software.
• To facilitate mastery of an Executive Information System (Model)/MIS package.

Content
• Relationship and distinction between different types of application systems within the business environment, with major emphasis on computer-based information systems.
• Typical business systems, including project management, spreadsheet, DBMS, EIS and MIS software.
• Strategies for the management of technology within a business environment.

References

HIT3017 Database 2
12.5 Credit Points • 1 Semester • 46 Hours • Hawthorn • Prerequisite: HIT2016 and (HIT1051 or HIT1009) • Teaching methods: Lecture (2 Hours per Week), Laboratory/ Tutorial (2 Hours per Week) • Assessment: Assignments, Examination
A subject in the Bachelor of Information Systems, Bachelor of Information Systems / Bachelor of Business, Bachelor of Information Technology, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Computing), Bachelor of Software Engineering.

Aims & Objectives
The major objective of this subject is to equip students with a practical and theoretical knowledge of database management systems so that they can work productively on projects involving online database applications. On completion of this subject students will have gained an understanding of:
• Why a database application requires the use of a Database Management System (DBMS) to facilitate transaction management, recovery and concurrency.
• The distinction between application functions and database functions.
• How to implement application business rules at both an application level and a database level through the use of constraints and triggers at both forms and database levels.

Content
• SQL and Oracle’s PL/SQL language
• DBMS terminology and concepts.
• Data Integrity
• Database triggers
• Transaction management, concurrency and recovery.
• Building online transaction systems using forms and triggers.

References

HIT3018 Database 3
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT3017 • Teaching methods: Lecture (2 Hours per Week), Laboratory/Tutorial (1 Hour per Week) • Assessment: Assignments, Examination
A subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Computing), and Bachelor of Software Engineering.

Aims & Objectives
To build upon the concepts and skills gained in Database 2 by examining database design, implementation and performance issues in both local and distributed client-server environment.

Content
• Programming using SQL cursors.
• Physical design issues.
• The use of database and transaction analysis and optimiser plan information to check/improve performance.
• The effective use of views to achieve data independence.
• Design and implementation of distributed systems.
• Object-oriented and Object-relational systems.

References

HIT3034 Information Systems Project
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT3017 and (HIT2010 or HIT1052 or HIT2013) and HIT2049 • Teaching methods: Seminars, Supervised Reading, and Individual Consultation as Required • Assessment: Oral Presentation, Project Report
A subject in the Bachelor of Information Systems and Bachelor of Information Systems/Bachelor of Business.

Aims & Objectives
• To provide students with the opportunity to work in a formal project team environment in the areas of development and implementation of an information system, using a variety of software engineering and development tools.
• To increase the depth and breadth of the students’ understanding of practical computing and reinforce the theory learned in other subjects.

Content
Students will employ the skills learned in other subjects, such as:
• Software engineering techniques.
• Project control.
• Standards development.
• Database implementation.
• Programming.
• Unit and system testing.
• Software package implementation design.
• Risk analysis.

References

HIT3037 Programming in Java
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Substantial programming experience and requires approval of Program Manager • Teaching methods: Lectures (2 Hours per Week), Laboratories (2 Hours per Week) • Assessment: Assignments, Examinations
A subject in the Bachelor of Science (Information Technology).

Aims & Objectives
To master the fundamentals of Java.

Content
• Introduction and comparison to C/C++.
• Java language.
• Exceptions, streams and IO.
• Applets and applications.
Aims & Objectives
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.

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 and science, 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.

Recommended Text

HIT3047 Real-Time Programming
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT2014 and (HIT2053 or HIT2153) • Teaching methods: Lecture (2 Hours per Week), Laboratory (1 Hour per Week) • Assessment: Assignments, Examinations

A subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Computing (Robotics & Mechatronics) / Bachelor of Science (Computer Science & Software Engineering), Bachelor of Software Engineering, Graduate Diploma of Information Technology (Internet Software Development).

Aims & Objectives
To study the design and implementation of real-time software systems using a high-level language.

- To develop control software for a hardware system with hard deadlines.

Content
- 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.

References

HIT3049 Systems Analysis & Modelling
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT2016 and (HIT1012 or HIT1031) • Teaching methods: Lectures, Tutorials • Assessment: Assignments, Examinations

A subject in the Bachelor of Information Systems and Bachelor of Information Systems/Bachelor of Business.

Aims & Objectives
To equip the student with the necessary knowledge, skills, models and techniques to model business problems in both the Structured and Object-Oriented systems development paradigms.

- To concentrate on the front-end phases and activities of the Systems Development Life Cycle (SDLC).

Content
- Understanding a problem in its business context.
• Introduction to project management tools and techniques relevant for a systems analyst.
• SDLC models.
• Approaches to systems development.
• Investigating systems requirements.
• Structured and Object-Oriented modelling techniques to model various perspectives of the system.
• Modelling techniques are structured paradigm, context diagram, data flow diagrams, data element and data flow definitions and process descriptions.
• Object-Oriented Paradigm: OO context diagram, class analysis diagram, use-case diagram, activity diagram, sequence diagram.

References

HIT3050 Evolutionary and Neural Computing
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1052 and HIT2012 • Teaching methods: Lecture (2 Hours per Week), Laboratory (1 Hour per Week) • Assessment: Assignments, Examinations, Practice Sessions
A subject in the Bachelor of Science (Computing), Bachelor of Information Systems / Bachelor of Business, Bachelor of Software Engineering and Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
To introduce and investigate non-deterministic computational methods and their application to complex problem domains.

Content
• Introduction.
• Methods of inference, deductive logic, induction.
• Approximate reasoning.
• Symbolic and sub-symbolic processing.
• Neurocomputing.
• An introduction to parallel processing in networks.
• Perceptrons.
• Multi-layer networks (back-propagation).
• The associative memory problem (the Hopfield model).
• Unsupervised competitive learning.
• Other neural networks architectures.
• Evolutionary computation.
• Foundations of evolutionary computation.
• Genetic algorithms.
• Genetic programming.
• Applications.
• Fuzzy systems.
• Fuzzy sets, logic, the basics of fuzzy systems.
• Fuzzy systems applications.
• Hybrid systems.

References

HIT3054 C++ for Java Programmers
12.5 Credit Points • 1 Semester • 40 Hours • Hawthorn • Prerequisite: HIT1052. Preclusions: HIT2053, HIT2054, HIT2072 • Teaching methods: Lecture (2 Hrs per Session), Laboratory (2 Hrs per Session) • Assessment: Assignments, Examination
A subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Information Technology), Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering), and Bachelor of Software Engineering, and an elective in the Bachelor of Engineering (Robotics & Mechatronics).

Aims & Objectives
• To compare and contrast the features of the C++ programming language with those of Java.
• To reinforce understanding of Java features by earning their equivalent in the ‘parent’ C++ language.
• To introduce the capabilities of C++ as a hybrid, procedural and object-oriented language.
• To explore in depth the facilities offered by C++ for object-oriented programming.
• To explore the freedom, efficiency and flexibility C++ offers programmers.
• To emphasise the defensive programming style required by the C/C++ programming language.
• To explore the benefits and drawbacks of C++ and Java integration.

Content
• C++ as a hybrid programming language: structure of C++ programs, compilation process.
• Data types: control structures, functions, scoping.
• Pointers, references.
• C/C++ strings, namespace, C++ use of ‘const’.
• C++ classes and data abstraction: separating interface and implementation.
• Stream input–output (standard I/O, device and file I/O).
• Inheritance, abstract classes, multiple inheritance.
• Operator overloading, friend function and friend classes, static class members.
• Polymorphism and late binding, the Vtable.
• C++ type conversion, RTTI.
• Exception handling.
• Function templates and class templates, the STL.
• Integrating C++ and Java, JNI, distributed objects.

References
Budd, T., C++ for Java Programmers, Addison Wesley, 1999.

HIT3055 Software Maintenance Project
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT2056 • Teaching methods: Lectures, Group Work, Laboratories • Assessment: Assignments, Group Work, Presentations, Examination
A core subject in the Bachelor of Software Engineering. Also available as an elective in the Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
To provide students with a small-team project experience involving significant corrective enhancement and maintenance on an existing software system.

Content
Taught component will address major conceptual and process issues associated with software maintenance.

References
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.

References
Aims & Objectives

To introduce the fundamentals of C++ programming.

To present the defensive programming style required by the C/C++ programming language.

To explore the facilities offered by C++ for object-oriented programming.

Content

Introduction to C++ programming as a hybrid programming language: structure of C++ programs, compilation process.

Data types: control structures, functions, looping.

Composite data types, pointers, references.

C strings, C++ strings, namespace, use of ‘const’.

Classes and data abstraction: separating interface and implementation.

Inheritance, abstract classes, multiple inheritance.

friend functions and friend classes, operator overloading.

Static class members.

Polymorphism and late binding.

C++ type conversion, RTTI.

Exception handling.

Function templates and class templates, container classes, vectors.

The STL.

References


HIT3081 Software Development for Engineers

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT2080

Teaching methods: Lecture (1 Hour per Week), Laboratory (2 Hours per Week) • Assessment: Assignments, Examinations

A subject in the Bachelor of Science (Medical Biophysics & Instrumentation), Bachelor of Biomedical Engineering, Bachelor of Engineering (Electrical & Electronic Engineering), Bachelor of Engineering (Electronics & Computer Systems).

Aims & Objectives

To understand the stages of the software life cycle.

To learn 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.

Content

The software lifecycle.

Software specification.

Software modularisation.

Advanced data structures.

Random-access files.

Introduction to C++.

References


HIT3084 E-Commerce: A Business Perspective

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1004 or HIT2008 or equivalent • Teaching methods: Lecture (2 Hours per Week), Laboratory (1 Hour per Week) • Assessment: Assignments, Examination

A subject in the Bachelor of Information Systems and Bachelor of Information Systems/Bachelor of Business.

Aims & Objectives

This subject covers the key organisational and societal issues relating to electronic commerce by examining the strategic, organisational, business, managerial and technical issues and implications of electronic commerce on the marketplace and its effects on the nature of business. It aims to raise awareness of the major security, legal and ethical issues affecting consumers and providers.

Content

Introduction to eCommerce Terminology.

ECommerce Communication Infrastructure.

Business Models of eCommerce.

Inter-Organisational Systems and EDI.

EDI and its Implications.

Supply Chain Management and its Implications.

Electronic Service Delivery.

Internet Commerce and eBusiness.

Marketing and eCommerce.

Security Issues of eCommerce.

Legal, Ethical and Audit Issues of eCommerce.

Future Trends of eCommerce.

References


HIT3087 Advanced Java

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1052

Teaching methods: Lectures (2 Hrs per Week), Laboratory (1 Hr per Week) • Assessment: Assignments, Examinations

A subject in the: Bachelor of Multimedia (Multimedia Software Development), Bachelor of Science (Computing), Bachelor of Science (Information Technology), and the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Technology/Bachelor of Business.

Aims & Objectives

To develop skills in advanced Java programming, including the use of Java Foundation Classes and writing Java Beans.

Content

The Swing API.

Specialised dialogs: JColor Chooser, J File Chooser, J Option Pane, etc.

Model-based components: JTree, JTable, etc.

Image display.

Threads.

Serialisation.

Java Beans.

Introduction to RMI.

References


HIT3093  XML Technologies
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT1091 or HIT3041 • Teaching methods: Lectures, Laboratory • Assessment: Assignments, Examination
A subject in the Bachelor of Science (Information Technology)

Aims & Objectives
To introduce the Extensible Markup Language (XML) and its associated technologies in the development and usage of World Wide Web systems. The subject will have both a practical orientation developing skills in XML programming and XML tool use, and a research orientation developing thinking about issues in XML.

Content
• Introduction to XML: definition, history, fundamental concepts and benefits
• XML tools
• XML namespaces
• Document Type Definitions: XML parsers and validators
• XML Schema
• Extensible Stylesheet Language
• XML Path Language
• Resource Description Framework and Dublin Core
• XPath and Xlink
• XSL Formatting Objects
• Research applications of XML

Textbook

References

HIT3099  Enterprise.NET
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT3097 • Teaching methods: Lectures, Laboratories • Assessment: Assignments, Examinations
A subject in the Bachelor of Science (Information Technology)

Aims & Objectives
On completion of this subject, the student 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

Content
• N-Tier concept and implementation overview
• Introduction to ADO.NET
• Design with databases
• Web applications using ASP.NET
• Web services
• Securing Web services and applications
• Advanced database issues
• Enterprise server overviews

References
There is no prescribed text. Students will be directed to online resources.

HIT3100  Industry-Based Learning
50 Credit Points • 20 Weeks • Nil • Hawthorn • Prerequisite: This subject is a mandatory component of the Bachelor of Information Technology program • Teaching methods: Active participation in the workplace under the direction and supervision of the sponsoring organisation and a nominated Swinburne supervisor • Assessment: Written Report, Written Evaluations and an Oral Presentation
A subject in the Bachelor of Information Technology.

Aims & Objectives
While the learning activity is undertaken in commercial environments, the objectives are educational, not commercial.
The objectives of the subject is broadly stated as:
• Personal development
• Further exposure to the environment and culture of business/industry.
• Further development of information technology skills

Content
HIT3100 Industry-Based Learning builds upon the knowledge and experience gained in HIT2100 IBL and the subjects studied within the Bachelor of Information Technology, with particular emphasis on the specialist studies undertaken in the fifth and sixth segments.

References
Nil

HIT3101  Industry-Based Learning
100 Credit Points • 1 Year • Nil • Hawthorn • Prerequisite: A minimum of 3 semesters and a maximum of 4 semesters of a 6 semester academic program or a minimum of 5 semesters and a maximum of 6 semesters of an 8 semester academic program offered by the School of Information Technology • Teaching methods: Nil • Assessment: Report
A subject in the Bachelor of Information Systems, Bachelor of Information Systems/Bachelor of Business, Bachelor of Multimedia (Multimedia Software Development), Bachelor of Science (Computer Science & Software Engineering), and Bachelor of Software Engineering.

Aims & Objectives
The object of HIT3101 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
A subject in the School of Information Technology for students who are accepted into the School’s Industry-Based Learning program and gain an approved placement. The program is available to students who have completed a minimum of 3 semesters and a maximum of 4 semesters of a 6 semester academic program or a minimum of 5 semesters and a maximum of 6 semesters of an 8 semester academic program offered by the School of Information Technology.

Acceptance into the subject does not guarantee an industry placement. Currently, this program is only available to students with Australian Citizenship or Australian Permanent Residency.

References
Nil
HIT3102  Intelligent Agents

12.5 Credit Points • 1 Semester • 38 Hours • Hawthorn • Prerequisite: HIT1052 • Teaching methods: Lecture (2 Hours per Week), Laboratory • Assessment: Assignments, Examinations

A core subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Software Engineering. Available as an elective in the Bachelor of Information Systems, Bachelor of Information Technology, Bachelor of Science (Computing), Bachelor of Science (Information Technology) and Bachelor of Business.

Aims & Objectives

• To introduce the basic concepts and tools of symbol-based artificial intelligence and their application in expert systems.
• To contrast the symbol-based with the more recently emergent non-symbolic AI paradigm.
• To study the difficulties involved in encoding knowledge, even in restricted domains, in such a fashion that ‘intelligent behaviour’ can be elicited.

Content

• Intelligent agents.
• Problem-solving and search.
• Knowledge representation.
• Reasoning systems.
• Machine learning.
• Evolutionary systems.
• Artificial neural networks.
• Computer vision and robots.
• Philosophy of artificial intelligence.

References


HIT3110  Component Based Development .NET

12.5 Credit Points • 1 Semester • 38 Hours • Hawthorn • Prerequisite: HIT3110 • Teaching methods: Lectures, Tutorials, Laboratories • Assessment: Assignments, Examinations

Aims & Objectives

• To develop an understanding of the component-based approach to system integration.
• To develop knowledge of relevant software engineering principles and practices.
• To provide students with the opportunity to create and use some simple components.

Content

• Definitions of components and component-based development, technical and economic perspectives.
• Component-based development using the Microsoft .NET framework and Visual Basic .NET.
• Software engineering principles and practices for CBD; relationship to other software development approaches, including structured methods and object-orientation.
• Component environments, standards and libraries, use of a component library.
• Methods and tools for component-based development, component assembly, component modelling, component design, component implementation and deployment.

References


HIT3119  Enterprise Java

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT3037 • Teaching methods: Lectures, Laboratories • Assessment: Assignments, Examinations

A subject in the Bachelor of Science (Information Technology)

Aims & Objectives

To understand and develop database and network software, using Java to examine Web-based database.

Content

• Threads.
• Sockets.
• Swing.
• JDBC.
• RMI.
• Java IDL.
• Client server development using Java.
• Security.
• Servlets.
• Enterprise Java Beans.
• Web database development using Java.

Textbook


HIT3121  Internet Security

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: One Year’s Training in a Programming Language • Teaching methods: Lectures (2 Hours per Week), Laboratory (1 Hour per Week) • Assessment: Assignments, Examinations

A subject in the Bachelor of Science (Information Technology).

Aims & Objectives

To explore the technology and management of Internet security.

Content

• Overview: setting the context, review of concepts
• Security and networks: types of work connectivity
• Networks: a closer look. Important observation and analysis tools and how to use them
• How do servers work? Methods of communication
• Management issues: security models, case studies, risk assessment and management
• Firewalls and security: theory and practice, design and implementation
• Packet filtering and intrusion detection tools: design, testing, implementation and validation
• Web services and directory services
• Security and the programmer
• System security: tools and techniques from both sides of the fence
• Practical system security: toolkits and methodologies
• Course review: review of material, exploration of tools

References


**HIT3122 Engineering and Distributed Software**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT1052 or HIT1152 and (HIT3054 or HIT3072) • Teaching methods: Lectures, Laboratories • Assessment: Assignments, Examinations
A subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Software Engineering, Bachelor of Science (Computing) and Bachelor of Information Technology.

**Aims & Objectives**

To provide students with in-depth understanding of the concepts and characteristics of distributed software systems and their architectures; to equip students with the principles, techniques and ability to develop distributed software systems using key technologies.

**Content**

- Concepts and characteristics of distributed systems.
- Design issues for distributed software.
- Principles of middleware technologies (CORBA, Java/RMI, COM/NET, M/GSeries, etc.).
- Language heterogeneity and interface definition.
- Middleware and data heterogeneity.
- Communication and synchronization.
- Service location (naming and trading).
- Service lifecycle.
- Persistence.
- Transaction.
- Security.

**Textbook**

**Recommended reading**

**HIT3136 Information Technology: A Critical Review**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Any Two HIT2xxx Subjects • Teaching methods: Lectures (1 Hour per Week), Tutorials (2 Hours per Week). The teaching and assessment methods seek to develop self-directed learning (the ability to study and learn independently) and reflective thinking skills (a critical approach to literature on the subject). • Assessment: Individually Reported. Several Milestones towards Production of the Final Report are also Assessed.
A subject in the Bachelor of Science (Information Technology)

**Aims & Objectives**

- To introduce students to collective intelligence algorithms 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 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.
- The importance of non-linear output transformations.
- Three basic node types.
- The back propagation learning algorithm and practical implementation considerations.

**References**


• 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.
• Speeding 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 stygmergy.
• The Art Colony Optimisation and Particle Swarm Algorithms.

**HIT3140 Multimedia for WWW**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT1001 • Teaching methods: Lectures (2 Hours per Week), Tutorials (1 Hour per Week) • Assessment: Assignments, Examinations

A subject in the Bachelor of Science (Computer Science and Software Engineering).

**Aims & Objectives**

To introduce the technologies, concepts and techniques associated with the development of multimedia systems.

**Content**

• Introduction and review: definition, fundamental concepts, media types and application areas.
• Media types: text, graphics, images, audio, animation, video – digital representation, formats, standards, capturing hardware, processing software.
• Multimedia development methodology and approaches to developing multimedia.
• Compression: compression methods, binary image compression schemes, color, greyscale and still-image compression, video image compression audio compression.
• Multimedia hardware and software: components of a multimedia system, optical storage, input and output technologies, authoring software, processing software.
• Multimedia documents, databases and hypertext: hypermedia, SGML, HTML, OpenDoc, MHEG.
• Multimedia user interfaces and design fundamentals: specific design issues and approaches, navigation issues, user centred design and development.
• Multimedia communication systems: multimedia servers, high-speed LANs, distributed multimedia databases, video conferencing and collaborative work environments.
• Multimedia programming and scripting: programming languages for multimedia, multimedia scripting languages for authoring tools.

• Evaluation of multimedia systems: evaluation techniques and methods.
• Current research and future directions.

**References**


**HIT3142 Object Oriented Modelling**

12.5 Credit Points • 1 Semester • 24 Hours • Hawthorn • Prerequisite: HIT1052 or HIT3072 or HIT3054 • Teaching methods: Lecture/Tutorial (2 Hours per Week) • Assessment: Assignments, Examinations

A subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Information Technology), Bachelor of Software Engineering.

**Aims & Objectives**

• List and illustrate the fundamental concepts of object orientation.
• List and describe the features and models available in the UML (Unified Modelling Language) for analysis and specification.
• Read, verify, and validate a given specification presented in UML.
• Discuss what qualities contribute to a good UML specification.
• Given a system requirements description, produce a specification using UML.
• Produce a rationale of the various design choices made in producing a system specification in UML.

**Content**

• Introduction to Object-oriented concepts.
• Overview of the UML modelling language.
• Class diagrams.
• Use cases.
• Interaction diagrams.
• State diagrams.
• Modelling heuristics.

**References**


**HIT3149 Analysis, Modelling and Design**

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1031 and HIT2016. Preclusion HIT2049 • Teaching methods: Lectures, Tutorials • Assessment: Assignments, Examinations

A subject 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.

**Aims & Objectives**

By the end of this subject, the student should be able to:

• Understand the business context of a software system.
• Understand the importance of business change processes and their relationship to the software development process.
• Understand the relationships between a system and its models.
• Use a range of modelling languages to represent business systems, business processes and software systems.
• Compare and evaluate modelling languages.

**Content**

Business Analysis
To have a solid foundation in the WIN32 API.
To provide a theoretical and practical background for the development of
To study the Windows interface programming paradigm.

Aims & Objectives

A subject in the Bachelor of Software Engineering.

References
Sommerville, I., Sawyer, P., Requirements Engineering: A Good Practical Guide,
Lauesen, S., Software Requirements: Styles and Techniques, Addison-Wesley,
Kovitz, B.L., Practical Software Requirements: A Manual of Content and Style,
Buschmann, F., Schmidt, D., Pattern-Oriented Software Architecture: A System of

HIT3157  Large Scale System Design

12.5 Credit Points  1 Semester  3 Hours per Week  Hawthorn  Prerequisite: HIT2056
Teaching methods: Lectures (2 Hours per Week), Tutorials (1 Hour per
Assessment: Examination, Assignments, Weekly Question Submission
A subject in the Bachelor of Software Engineering and the 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.

References
Bass, L., Clements, P., Kazman, R., Software Architecture in Practice, 2nd edn,
Buschmann, F., Schmidt, D., Pattern-Oriented Software Architecture: A System of
Kovitz, B.L., Practical Software Requirements: A Manual of Content and Style,
Lauesen, S., Software Requirements: Styles and Techniques, Addison-Wesley,
2002.
Sommerville, I., Sawyer, P., Requirements Engineering: A Good Practical Guide,

HIT3165  Windows Programming .NET

12.5 Credit Points  1 Semester  48 Hours  Hawthorn  Prerequisite: HIT2054 or
HIT3072. Requires approval of Program Manager.  Teaching methods:
Lectures, Laboratory (2 Hours per Week Each)  Assessment: Assignments, Examinations
A subject in the Bachelor of Software Engineering.

Aims & Objectives
• To learn about developing Windows Applications using the .NET framework.

Content

• Windows interface and architecture.
• The WIN32 API.
• Using Managed C++ and the .NET framework in C++ Windows programs.
• Interoperability issues between Managed and Unmanaged C++ and with
COM.
• Dialog boxes, menus, toolbars, and other Windows controls.
• Graphical operations.
• Enhanced views.
• Dynamic Link Libraries.
• Memory management, processes and threads.

References
Richter, J., Programming Applications for Microsoft Windows, Microsoft Press, 4th

HIT3185  Data Communications and Networks

12.5 Credit Points  1 Semester  3 Hours per Week  Hawthorn  Prerequisite:
HIT1025 Preclusions: HIT3008 and HIT2020  Teaching methods: Lectures, Tutorials
Assessment: Assignments, Examinations
A subject in the Bachelor of Information Systems and Bachelor of Science
(Computing).

Aims & Objectives
To provide the student with an insight into the basic elements of data
communication and relate this to their wider use in the information technology
environment, including networking, information security and electronic commerce.
It also examines the growing pressure to provide an integrated approach to all
information systems to provide a flexible, simple and effective method of
information management utilising the Internet's infrastructure.

Content

• Role of information systems, electronic commerce and data communications
in contemporary business practice.
• Principles of data communications.
• Examination of the current data communication standards.
• Local area networks.
• Internet working, with an emphasis on devices and technology.
• Wide are networks.
• Client-server architecture.
• Web-based systems and applications.
• Information security at all layers of the TCP/IP model.
• Current information systems planning and development.
• Management issues.
• Current trends.

References
Fitzgerald, J., and Dennis, A., Business Data Communications and Networking, 7th
Panko, R.R., Business Data Communications and Networking, 3rd edn, Prentice-
Hall, 2000.

HIT3197  Advanced .NET Programming

12.5 Credit Points  1 Semester  3 Hours per Week  Hawthorn  Prerequisite:
HIT2110 or HIT3037  Teaching methods: Lectures, Laboratory  Assessment:
Assignments, Examination
A subject in the Bachelor of Science (Information Technology)
Aims & Objectives
On completion of this subject the student will be able to:
- Develop complex programs using the .NET framework classes.
- Understand threading and thread-related issues and implementations.
- Develop applications that use custom events and delegates.
- Create programs that run on mobile platforms (phones and PDAs).
- Develop programs that use MDI forms.
- Create custom controls.
- Use GDI+ to draw controls.
- Develop programs using the C# programming language.
- Develop programs using the Visual Basic .NET programming language.
- Create multi-language programs.
- Use .NET class libraries for collections, input and output, and encryption.

Content
- Introduction to C#
- What is .NET?
- Delegates and events
- Threads and threading
- Introduction to Windows forms
- Advanced Windows forms
- Developing for mobile devices
- Introduction to Visual Basic .NET
- Collections
- Input and output, and encryption
- Distributing .NET applications

References

HIT4058 Software Engineering Project A
25 Credit Points • 2 Semesters • 5 Hours per Week for 2 Semesters • Hawthorn • Prerequisite: HIT2153 and HIT2056 • Teaching methods: Lectures, Project Supervision • Assessment: Project Work, Presentations
A subject 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.

References

HIT4069 Research Paper
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Supervised Reading, Field Work and Individual Consultation as Required • Assessment: Class Presentations, Report
A subject 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 subjects.

Content
Approved students will prepare a 5,000-word article on a topic chosen in consultation with a staff member. Articles will generally take the form of a comprehensive literature review of a topic of contemporary interest.

References
There is no prescribed text. Students will be directed to appropriate books and journal articles.

HIT4070 Research Report
25 Credit Points • 2 Semesters • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Assessment: Class Presentations, Report
A subject 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 subjects.

Content
Approved students will 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.

References
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 • Teaching methods: Project Work, Research Group Meetings and Consultation with Project Supervisor • Assessment: Final Report
A subject in all School of Information Technology undergraduate courses.

Aims & Objectives
By the end of this subject students should be able to:
- 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.

References
There is no prescribed text. Students will be directed to appropriate books and journal articles.

HIT4189 Usability Engineering
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT2024 and (HIT2056 or HIT3157) • Teaching methods: Lectures, Tutorials, Self-directed Research, Student Presentations • Assessment: Research Assignments, Examinations, Presentations
A subject in the Bachelor of Software Engineering, Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Technology.
Aims & Objectives
To investigate some engineering issues for producing usable software. To import knowledge and skills in research methods, specifically in the area of Human-Computer Interaction.

Content
A selection of topics from:
- Task analysis: modelling the activities of the user and the demands of the environment for use in design.
- Internationalization: designing software to allow for use by multiple cultures.
- Formal approaches to specification and design: specifying mission-critical systems.
- Accessibility: designing for less-abled users.
- Visualisation: interactive techniques for representing data.
- Non-GUI and specialist interfaces (e.g. mobile phones, speech interfaces).
- Patterns for usability: extracting best practices in usability for re-use.
- CSCW issues.

References
Butler, K., Usability engineering turns 10, Interactions, 1996;January:59–75.
(Access via ACM e-journal library site.)

HMA103 Statistics and Research Methods A
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
- Teaching methods: Lectures, Tutorials • Assessment: Assignments, Examination, Test
A subject in the Bachelor of Science (Psychology/Biochemistry); Bachelor of Science (Psychology/Psychophysiology); Bachelor of Arts; Bachelor of Arts (Psychology/Psychophysiology); and Bachelor of Social Science (designed for students undertaking psychology as a major and going on to study HMA278).
Note: students may only receive credit for one of: HMA103, HMA104, HMB110, HMB111 and HMS102.

Aims & Objectives
This subject 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 results of such investigations.

Content
- Ordering & grouping data: frequency tables; picturing data: histograms and stemplots; summarising data: median, IQR & boxplots; the mean & standard deviation; levels 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.

Recommended reading
To be advised.

HMA104 Statistics and Research Methods B
12.5 Credit Points • 1 Semester • 3 Hours per Week plus 1 Hour Excel Lab for 3 Weeks • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Tutorials, Excel Labs • Assessment: Assignments, 1 Examination, 1 Test
A subject in the Bachelor of Arts 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, HMB110, HMB111 and HMS102.

Aims & Objectives
This subject 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
- Types of data and levels of measurement.
- Ordering and grouping data: frequency tables, the mode, quartiles.
- Picturing data: histograms, stemplots, barcharts, pie charts.
- Measures of centre and spread: the median and mean, range, IQR and standard deviation, boxplots. The normal model.
- Describing and displaying relationships between numerical variables: correlation and regression.
- Investigation the effect of a third variable. Correlation and causality.
- Application to data drawn from the political and social sciences and media.
- Use of computational aids in analysing bivariate data; graphics calculators and spread sheets.

Recommended reading
To be advised.

HMA278 Design and Measurement 2
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HMA103 • Teaching methods: Lecture/Tutorial or Supported Independent Learning • Assessment: Examinations
A subject in the Bachelor of Social Science (Psychology); Bachelor of Social Science; Bachelor of Arts (Psychology/Psychophysiology); and Bachelor of Science (Psychology/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 subject 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 subject.
- 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.

Textbooks
Francis, G., Analysis of Variance, Swinburne University, 2003.
A learning guide for HMA278.

HMA279 Design and Measurement 3
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HMA278 • Teaching methods: Lecture/Tutorial or Supported Independent Learning
• Assessment: Assignments, Examinations

A subject in the Bachelor of Arts (Psychology/Psychophysiology); Bachelor of Science (Psychology/Physiology); and Bachelor of Science (Psychology/ 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 subject content has been divided into modules, and then further divided into topics.
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.

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.

Recommended reading
Francis, G., Multiple Regression, Swinburne University, 2003.
Francis, G., Multivariate Analysis of Variance and Factor Analysis, Swinburne University, 2003.

HMB110 Quantitative Analysis A
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: 2 x 1.5-Hour Lectures and 1x 1-Hour Tutorial per Week
• Assessment: Assignment, Examination, Test

A subject 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 subject has a business emphasis and is applied in nature. Interpretation and presentation form an integral part of the subject.
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.

Recommended reading
Comprehensive student notes will be available from the Swinburne bookshop.
A specialist calculator is required: the Texas TI-83, or approved equivalent.

HMB111 Quantitative Analysis B
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: 2 x 1-Hour Lectures and 1x 1-Hour Tutorial per Week
• Assessment: Assignment, Examination, Test
A subject 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 subject has a business emphasis and is applied in nature. Interpretation and presentation form an integral part of the subject.

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.

**Recommended reading**

Comprehensive student notes will be available from the Swinburne bookshop. A specialist calculator will be required: the Texas TI-83, or approved equivalent.

**HMS101 Foundation Mathematics**

*12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil*
- **Teaching methods:** Lecture/Tutorials
- **Assessment:** Assignments, Examinations, Tests

A subject in the Bachelor of Science (Biotechnology); Bachelor of Science (Biotecnology)/Bachelor of Business; and Bachelor of Science (Biotecnology)/Bachelor of Arts (Media & Communications).

**Aims & Objectives**
This subject aims to provide a short but thorough review of elementary tertiary and ‘background’ mathematics. It is intended for those studying degrees in applied science which require only a small amount of mathematics. The main theme is modelling change through shapes, functions and patterns, with algebra and calculus as useful tools in this process. A graphics calculator is required and other technology will be incorporated as appropriate.

**Content**
Number: calculation, notations, rounding and accuracy, fractions and ratios.
Algebra: general manipulation, transposition of formulae, indices and logarithms; polynomials; quadratic, completing the square, formula; general; factors, factor theorem, division; algebraic fractions, rational functions, simple systems of 2 or 3 equations, arithmetic and geometric progressions.
Trigonometry and mensuration: units of measurement, angles, radian and degree measures, classification of triangles, definitions of trigonometric ratios, right-angled triangles, the six trigonometric functions of circular angles, elementary identities, solution of triangles, sine and cosine rules, inverse trigonometric functions, simple mensuration formulae for areas and volumes.
Functions and graphs: linear functions, power functions, polynomials, simple rational functions, the six trigonometric functions, exponential and logarithmic functions, standard forms of conic sections, interpretation of graphs of functions and relation modelling.
Differentiation: ideas and simple rules, product, quotient and chain rules, rates, linear approximations, simple optimisation.
Integration: ideas and simple rules, including antidifferentiation and numerical integration, easy substitutions (e.g. linear), use of short tables of integrals, simple areas and volumes.
Matrices and determinants: brief introduction: ideas and simple manipulation, solution of linear equations.
Vectors: brief introduction: concepts: simple manipulation (2D and 3D), dot product.
Partial differentiation, simple optimisation.

**HMS102 Introduction to Statistics**

*12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil*
- **Teaching methods:** Lecture/Tutorials
- **Assessment:** Assignments, Examinations, Tests

A subject in the Bachelor of Science (Biochemistry/Chemistry); and Bachelor of Health Science (Public and Environmental Health).

**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 subject. A computer package such as Minitab may also be used.

**Textbook/Reference**
A Swinburne-prepared combined text and workbook.

**References**

Graphics calculator: Texas Instruments TI-83 or TI-83 plus equivalent.

**HMS111 Engineering Mathematics 1**

*12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil*
- **Teaching methods:** Classes (48 Hours), Tutorials/Practice Classes (12 Hours)
- **Assessment:** Assignments, Examinations

A subject in the Bachelor of Engineering (Biomedical Engineering); Bachelor of Engineering (Civil); Bachelor of Engineering (Civil) / Bachelor of Business; Bachelor of Engineering (Electronics & Computer Systems); Bachelor of Engineering (Mechanical); Bachelor of Engineering (Mechanical) / Bachelor of Business; Bachelor of Engineering (Robotics and Mechatronics); 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 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 & Computer Systems); Bachelor of Science (Photonics), and Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies).
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 (12%): Error analysis, binary octal and hexadecimal systems, complex numbers.

Algebra (16%): Equations in one-variable: algebra, graphical solution, numerical solution; inequalities in one variable: algebra, graphical solution, transformation of equations and formulae.

Functions and Graphs (24%): 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 (20%): Rates, approximations, Taylor polynomials, implicit and logarithmic differentiation, optimisation, detailed graphing including inflection, indeterminate forms, limits.

Integration (20%): Substitution, parts, general techniques, use of extensive tables, areas, centroids, volumes, arc lengths, surface areas, numerical integration.

Basic Data Analysis (8%): Graphical and numerical summaries of single variable data, bivariate plots, correlation, least squares regression lines.

Note: A graphics calculator will be used extensively in this subject.

Reading materials
Course notes will be available.

Graphics calculator: TI-83 or TI83 Plus or equivalent.

HMS111P Engineering Mathematics 1P

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil

- Teaching methods: Classes (48 Hours), Tutorials/Practice Classes (12 Hours)
- Assessment: Assignments, Examinations

A subject in the Bachelor of Engineering (Product Design).

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 (12%): Error analysis, binary systems, complex numbers.

Algebra (16%): Equations in one-variable: algebra, graphical solution, numerical solution; inequalities in one variable: algebra, graphical solution, transformation of equations and formulae.

Functions and Graphs (24%): 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 (20%): Rates, approximations, Taylor polynomials, implicit and logarithmic differentiation, optimisation, detailed graphing including inflection, indeterminate forms, limits.

Integration (20%): Substitution, parts, general techniques, areas, centroids, volumes, arc lengths, surface areas, numerical integration.

Basic Data Analysis (8%): Graphical and numerical summaries of single variable data, bivariate plots, correlation, least squares regression lines.

Note: A graphics calculator will be used extensively in this subject.

Reading resources
Course notes will be available.

Graphics calculator: TI-83 or equivalent.

HMS112 Engineering Mathematics 2P

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil

- Teaching methods: Lectures (48 Hours), Tutorials/Practice Classes (12 Hours)
- Assessment: Assignments, Examinations

A subject in the Bachelor of Engineering (Biomedical Engineering); Bachelor of Engineering (Civil); Bachelor of Engineering (Civil)/Bachelor of Business; Bachelor of Engineering (Electronics & Computer Systems); Bachelor of Engineering (Mechanical); Bachelor of Engineering (Mechanical)/Bachelor of Business; Bachelor of Engineering (Robotics and Mechatronics); 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 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 & Computer Systems); Bachelor of Science (Photonics); Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies); Bachelor of Engineering (Electronics and Computer Systems) and the Bachelor of Science (Psychology/Psychophysiology).

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 (20%): Boolean algebra, switching and logic circuits, simple network analysis, graph theory.

Linear Algebra (20%): Matrices, determinants, solution of systems of linear equations, matrix inverse, Gaussian and complete elimination.

Vectors (15%): Basic operations in 2D, introduction to 3D space, basic vectors in 3D, products, projections, lines and planes in 3D.

Curves (15%): 2D polar co-ordinates, 2D parametric curves, parametric differentiation and antidifferentiation, 3D curves, parametric differentiation and antiderivative.

Surfaces and Partial Differentiation (15%): Standard surfaces as $z = f(x,y)$; relations, parametric forms, 3D polar co-ordinates, drawing 3D pictures of surfaces and 3D curves, partial derivatives, approximations, optimisation.

Differential Equations (15%): 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 subject.

Reading resources
Course notes will be available.

Graphics calculator: TI-83 or equivalent.
Content
Discrete Mathematics (20%): Boolean algebra, switching and logic circuits, simple network analysis, graph theory.
Linear Algebra (20%): Matrices, determinants, solution of systems of linear equations, matrix inverse, Gaussian and complete elimination.
Vectors (15%): Basic operations in 2D, introduction to 3D space, basic vectors in 3D, products, projections, lines and planes in 3D.
Curves (15%): 2D polar co-ordinates, 2D parametric curves, parametric differentiation and antidifferentiation, 3D curves, parametric differentiation and antidifferentiation.
Surfaces and Partial Differentiation (15%): Standard surfaces as $z = f(x,y)$, relations, parametric forms, 3D polar co-ordinates, drawing 3D pictures of surfaces and 3D curves, partial derivatives, approximations, optimisation.
Differential Equations (15%): 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 subject.

Reading resources
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 •
Teaching methods: Web-based Subject Presence (Blackboard), Lectures, Tutorials • Assessment: Assignments/Examinations/Tests
A subject 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
• Logic: Formal notation; propositional calculus, predicate calculus. Types of statement & proof. Formal methods of program specification.
• 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.

Textbook
HMS133 lecture notes (available from the Swinburne bookshop)

Additional reading

A specialist calculator will be required: details will be provided in the subject outline.

References

HMS211 Engineering Mathematics 3A
12.5 Credit Points • 1 Semester • 54 Hours Per Week • Hawthorn • Prerequisite: HMS112 or equivalent •
Teaching methods: Lectures (36 Hours), Tutorials/Laboratories (24 Hours) • Assessment: Examinations
A subject in the Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical) / Bachelor of Business; Bachelor of Engineering (Robotics and Mechatronics); and Bachelor of Engineering (Robotics & Mechatronics) / Bachelor of Science (Computer Science & 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 (8%) Fourier series (16%): Fourier series expansion, functions defined over a finite interval, differentiation and integration of Fourier series, engineering application. Functions of a complex variable (24%): Complex functions and mappings, complex differentiation, complex series, singularities, zeros and residues, contour integration, engineering application. Laplace transforms (20%): The Laplace transform, properties of the Laplace transform, solution of differential equations, step and impulse functions, transfer functions, engineering application.
Applied probability and statistics (32%): Probabilities of random events, random variables, the Central Limit Theorem, important practical distributions, estimating parameters, control charts, Poisson processes and simple queues, engineering application.

Textbook

References

HMS212 Engineering Mathematics 4A
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HMS112 • Teaching methods: Lectures (36 Hours), Tutorials/Laboratories (24 Hours) • Assessment: Examination and Tests

A subject in the Bachelor of Engineering (Mechanical)

Aims & Objectives
To provide students with the mathematical knowledge and skills to support their concurrent and subsequent engineering studies.

Content
Matrix analysis (24%): The eigenvalue problem, numerical methods, reduction to canonical form, functions of a matrix, engineering application.
Numerical solution of ordinary differential equations (24%): Initial value and boundary value problems, finite difference methods.
Vector calculus (32%): 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's divergence theorem, Stokes' theorem, engineering application.

Note: The Mathematica package will be used in this subject.

Textbook

HMS213 Engineering Mathematics 3B
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HMS112 • Teaching methods: Lectures (36 Hours), Tutorials/Practice Classes (24 Hours) • Assessment: Assignments, Examinations, Tests

A subject 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 & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Science (Photonics) and Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies).

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 (8%)
Fourier Series (24%): Fourier series expansion, functions defined over a finite interval, differentiation and integration of Fourier series, complex form of Fourier series, engineering application.
Fourier Transforms (16%): The Fourier transform, properties of the Fourier transform, the frequency response, transforms of the step and impulse functions, engineering application.

Laplace Transforms (20%): The Laplace transform, properties of the Laplace transform, solution of differential equations, step and impulse functions, transfer-functions, engineering application.
Vector Calculus (32%): 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.

Textbook

HMS214 Engineering Mathematics 4B
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HMS112 • Teaching methods: Lectures (36 Hours), Tutorials/Practice Classes (24 Hours) • Assessment: Assignments, Examinations, Tests

A subject in the Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Engineering (Telecommunications and Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Science (Photonics) and Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies).

Aims & Objectives
To provide students with the mathematical knowledge and skills to support their concurrent and subsequent engineering studies.

Content
Matrix Analysis (24%): The eigenvalue problem, numerical methods, reduction to canonical form, functions of a matrix, engineering application.
Functions of a Complex Variable (24%): Complex functions and mappings, complex differentiation, complex series, singularities, zeros and residues, contour integration, engineering application.
The z Transform (12%): The z transform, properties of the z transform, inverse z transform, discrete-time systems and, difference equations, engineering application.

Applied Probability and Statistics (40%): 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 subject.

Textbook

HMS215 Engineering Mathematics 3C
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HMS112 • Teaching methods: Lectures (36 Hours), Tutorials/Laboratories (24 Hours) • Assessment: Assignments, Examinations, Tests

A subject in the Bachelor of Engineering (Civil), and Bachelor of Engineering (Civil) / Bachelor of Business.

Aims & Objectives
To provide students with mathematical and statistical knowledge and skills to support their concurrent and subsequent engineering studies.

Content
Numerical solution of differential equations (26%): Ordinary differential equations: Initial value and boundary value problems, finite difference methods, engineering application.
Matrix analysis (24%): The eigenvalue problem, numerical methods, reduction to canonical form, engineering application.

Applied probability and statistics (50%): Probabilities of random events, important practical distributions, sampling distributions, estimating parameters, correlation
and regression, contingency tables, goodness of fit tests, extreme value distributions with application to hydrology.

References
Printed notes will be available from the Swinburne Bookshop.

HMS411 Engineering Mathematics 5A
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HMS212 or equivalent • Teaching methods: Lectures (48 Hours), Tutorials/Laboratories (12 Hours) • Assessment: Assignments, Examinations

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 • 3 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: Lectures and Laboratory Sessions with Online Support • Assessment: Assignments, Examinations

A Stage 1 subject in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
Provision of the fundamental aspects of computing in terms of hardware, operating systems, data communications and algorithmic processing.

Content
Participants are provided with an introduction to a number of fundamental concepts underlying the design and use of contemporary computing systems. The content is supplemented with practical activities designed to help develop introductory level skills in Internet web page development and time and project management. The subject provides a solid foundation for further studies and learning in other subjects from information technology and information systems study streams.
- Personal Project Management.
- Web Page Development.
Content
Students examine computer architectures from a systems point of view and gain an understanding of the general features of operating systems and what distinguishes them from other systems. Students undertake some systems programming using multi-user operating systems, e.g. UNIX.

References

LAC300 IT Professional & Ethical Issues

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 subjects • Teaching methods: Series of Traditional Lectures and Tutorials, including a series of Guest Lecturers • Assessment: Assignments, Test

A Stage 3 subject in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
To provide students with a framework for the development of personal and corporate ethics appropriate for the information technology professional, and to allow students to explore the uses of contemporary developments in computing and their implications for society.

Content
Topics include legal, social, ethical and privacy issues as well as the impact of automation on organisations.

References

LAC320 Advanced Programming & Systems Project

25 Credit Points • 12 Weeks or equivalent • 5 Hours per Week • Lilydale
Prerequisite: LAS200 and LAC200 • Teaching methods: Laboratory Sessions supported by Virtual Lectures and Online Resources • Assessment: Examination, Software Development Projects

A Stage 3 subject in the Information Technology, Systems and Multimedia discipline which may be taken in any other degree program at Swinburne Lilydale.

Aims & Objectives
To advance the knowledge and concepts developed in LAS100, LAS200 and LAC200, to develop design knowledge and understand the relationship of design to other systems development phases. Programming knowledge in two languages will be further developed.

Content
Students concentrate on software development/engineering and on the latter stages of the systems development life cycle, particularly design, testing, quality, metrics, etc. Structured and object design, interface design and evaluation, implementation and maintenance will also be covered.

References

LAI100 Information Systems Fundamentals

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: Nil • Assessment: Assignments, Examinations

A Stage 1 subject in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
Students are encouraged to take a holistic and organisational view of information, systems, information technology and information systems, their relationships to individuals and organisations.

Content
Predominantly, students develop a knowledge and understanding of systems & organisation theory. Students also gain a basic understanding of ethics and human-computer interaction concepts, and eCommerce.

References

LAI120 Database Concepts & Modelling

12.5 Credit Points • 12 Weeks or equivalent • 2.5 Hours per Week • Lilydale
Prerequisite: LAI100 or LAS100 • Teaching methods: Virtual Presentations with Traditional Face-to-Face Tutorials • Assessment: Assignments, Examination, SQL Test

A Stage 2 subject in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The development of conceptual and practical skills of database concepts, data modelling and relational models, and proficiency in SQL. The student acquires the foundation knowledge necessary to progress to evaluating database management systems.

Content
Topics include: abstraction and modelling, relational data models, normalisation and Structured Query Language.

• Abstraction and Modelling.
• Functional Dependency Modelling: data elements and dependencies.
• Entity Relationship Modelling: entity types, relationship types and attribute types.
• The Relational Data Model.
• Normalisation.
• Structured Query Language.

References

LAI230 Management Support Systems

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LAI100 • Assessment: Assignments, Examinations

A Stage 2 subject in one of the Bachelor of Technology streams that may be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
Provide students with an understanding of the essential nature of accurate, relevant and timely information for decision making by all levels of management, and how best to produce and present such information.

Content
Students are familiarised with decision-making processes, data warehousing and modelling techniques. They are taught how to support those making decisions by designing suitable systems. Artificial Intelligence and Expert Systems are defined and described, together with methods of validating knowledge. Finally, organisational and societal issues are examined.

References
**LAI240 Electronic Communications and Applications**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale •
Prerequisite: LAC100 • Teaching methods: Lectures and Laboratory Sessions with Online Support • Assessment: Assignments, Examinations

A Stage 2 subject in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**

The subject reviews contemporary data communications applications, including Internet-based communications. The course is arranged around the seven-layer Open Systems Interconnection (OSI) reference model. It focuses on local area networks and on wide area networks. The subject explores the Internet as a data communications system, and also reviews some of the latest high speed network technologies.

**Content**

Students discuss the application and technical contents of the data communications field in order to understand why and how data communications systems work. The major components of a data communications system are described, as well as the way they fit together. The course also provides description of the terminology and discussion of current standards and legislation, and recent changes coming from carriers and providers of communications services. Other areas of study include:

- Communications Media.
- Communications Techniques.
- Networking.
- Local Area Networks.
- Wide Area Networks.
- Network Management.
- Network Security.
- Network Applications.
- The Internet.

**References**

Stamper and Case 2003, Business Data Communications, 6th edo, Addison Wesley.

**LAI260 Human-Computer Interaction**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale •
Prerequisite: LAI100 plus any one Stage 1 or 2 Information Technology, Systems and Multimedia Discipline subjects • Assessment: Assignments, Examinations

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**

At the end of the subject, the successful student will have acquired an understanding of key HCI concepts and their application to modern computing and business. The student should be able to communicate to others the true role of HCI in the modern business environment, and explain the concepts and practices typically used by HCI designers/developers to influence and guide the actions of others. The student should be able to relate the HCI theories to practice, and discuss sensibly the implications of HCI in their daily lives.

**Content**

This subject provides students with a series of lectures, exercises and assignments designed to give opportunities to explore basic Human Computer Interaction (HCI) concepts from a variety of practically oriented perspectives, including:

- HCI: an introduction.
- Developing interactive systems.
- Interacting with computers.
- Psychology and human factors.
- Frontiers in HCI.

**References**


**LAI300 Professional Reading & Writing in Technology & 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 subjects. • Teaching methods: Series of Traditional Lectures and Tutorials, Series of Student-produced Seminars • Assessment: Assignments, Test, Presentation/Seminar

A Stage 3 subject in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**

Students are encouraged to research a significant IS and/or IT area in such 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. Students also learn the principles involved in literature analysis, research approaches and proposal development.

**Content**

Topics currently include:

- Electronic commerce
- Multimedia technology and applications
- Artificial intelligence & neural computing
- Human computer interaction
- Expert systems and intuitive technologies
- Evolving technologies.

Other topics can be negotiated with the Readings Unit Coordinator.

**References**

Readings are referenced by students from Library, WWW and periodical resources: these sources are topic dependent.


**LAI320 Database Management Systems**

12.5 Credit Points • 12 Weeks or equivalent • 2.5 Hours per week • Lilydale •
Prerequisite: LAI210 • Teaching methods: Virtual Presentations with Traditional Face-to-Face Tutorials • Assessment: Assignments, Workbook, Examination or Research Project

A Stage 3 subject in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**

Data modelling and conceptual database knowledge are extended to include development and management of databases. The subject begins with an overview of database management systems, where data information and corporate knowledge are distinguished. It highlights the importance of database security and recovery and the integral role of the DBA. Advanced database concepts are explored. Covering Distributed Database Management Systems (DDBMS), Object-Oriented DBMS, databases and the Internet and multimedia databases. Client/ server systems are discussed as well as an in-depth look at data warehousing.

**Content**

- Schema Architecture.
- Concurrency Control.
- Database Recovery and Transaction Management.
- Database Design, Implementation, Management.
- Database Issues.
- Developments in Database Management Systems.

**References**

LAII350  eCommerce & Business Computing

Aims & Objectives

Electronic commerce (eCommerce) refers to business activities involving consumers, manufacturers, service providers and intermediaries using computer networks such as the Internet. The goals of eCommerce are to reduce product and service costs, and improve customer response time and quality. Hence, implementing initiatives in eCommerce has emerged as a significant business strategy in the information age. Technical developments have made possible the convergence of the computing and telecommunications industries. This has opened a door to a world of new and exciting applications that are changing the way business is conducted.

In this subject, students are familiarised with a range of business computer applications, such as accounting support systems, manufacturing support systems and customer/supplier support systems. Students are also familiarised with various business strategies for online identities to reach customers, how businesses are using the Web for purchasing goods, and how new companies are taking advantage of the Web to do things better. Students are also familiarised with eCommerce issues such as the components of an eCommerce system, networks, security, technical issues for eCommerce, and legal and regulatory frameworks. Students are also encouraged to develop their verbal and written communication skills. Hands-on exercises are used to build upon and reinforce the concepts introduced in the lectures.

Objectives

Upon successful completion of LAI 350 eCommerce and Business Computer Applications 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 computer applications in respect to system characteristics, information inputs, information outputs, and people who use or are effected by the system.
- Describe major types of eCommerce
- Define a series 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

Students will study business applications and understand business models. How eCommerce will give a competitive advantage and through understanding issues such as payment systems, purchasing & support, auctions and virtual communities will know how to use these for competitive advantage. Students develop an awareness of legal and ethical consideration while using the internet.

References


LAM290  Multimedia and Web Design

Aims & Objectives

Using a project-based format and starting with a knowledge of tools, the requirements for website development are investigated and analysed as the process of production from concept to outcome is explored. Consideration is given to design psychology and human computer interaction as well as the development of HTML skills.

Content

Multimedia and Web Design provides an opportunity to discover and apply design concepts and to explore the challenges in the production of an internet application. Topics include:

- Web design: Audience awareness
- Web design: Copyright issues.
- eCommerce on the Web
- Web maintenance and mastery
- Various HTML coding lessons

References

Rebholtz, S, 2001, How to Use HTML and XHTML, Sams Publishing.

Other tool-specific and Internet references as required.
developed and implemented holistically, considering human interactivity and cultural inclusiveness.

Content
IMM Production and Project provides an opportunity to discover and apply multimedia concepts and to explore the challenges in the production of an electronic presentation. Topics include:

- Project management tool.
- Interactive applications generation tools.
- Project integration, scope, costing etc.
- Team management etc.
- Business / community computer-mediated application development.
- Cultural inclusiveness, communication.
- Team dynamics, procurement management etc.
- Holism of projects.
- Application support and implementation.

References
Preece, J 1995, Human-Computer Interaction, Addison Wesley, New York, USA.
Other tool-specific references as required.

LAS100 Software and Application Development Concepts

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: Nil • Teaching methods: Traditional Face-to-Face Lectures with Conventional Face-to-Face Labs and Tutorials • Assessment: Assignments, Examination

A Stage 1 subject in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
AimsSoftware and Application Development Concepts 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 discussed in some detail regarding the management of the development process.

Subject Objectives: This subject 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, and
- Principles of programming (using VBA as the primary language)

At the end of the subject, 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.

Content
Topics include:

- Systems engineering, analysis & design principles.
- Developing software systems.
- Development principles and life cycle.
- Software quality and testing.
- Principles of programming.
- Configuration management.

References

LAS200 Systems Analysis and Design

12.5 Credit Points • 12 Weeks or equivalent • 4 Hours per Week • Lilydale
Prerequisite: LAS100 and preferably LA210 • Teaching methods: A series of Virtual Lectures and a series of Traditional Face-to-Face Tutorials • Assessment: Assignments, Examination

A Stage 2 subject in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
To develop an understanding of the principles and practices of systems analysis, translating user needs into software specifications. Students will concentrate on the procedural aspects of systems requirements determination and recording.

Content
Topics include:

- Role of IS in organisations.
- Systems development methods.
- Fact finding techniques.
- Business analysis and modelling.

References

LAS310 IT Strategies and Project Management

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: Any three stage 2/3 units from the Information Technology, Systems and Multimedia Discipline subjects • Teaching methods: Traditional Face-to-Face Presentations with Conventional Face-to-Face Contact for Tutorials • Assessment: Assignments, Examination, Project(s)

A Stage 3 subject in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This subject provides students with a series of lectures, workshops and assignments designed to give opportunities to explore various approaches for developing and managing information systems from a variety of practically oriented perspectives.

Developing meaningful systems on time and within budget requires an understanding of many organisational and technological factors, sufficient skills to identify and manage change agents, and the skills to coordinate resources. Students examine the relationship between information technology and its organisational context, and how it can be used for strategic competition advantage. Students will consider issues of systems production using various lifecycle models and the issues of end-user computing and information operation. Project management approaches are discussed and students will investigate one or more computer-based tools used to aid the resource management and implementation strategies for information technology and information system development and implementation.

At the end of the subject, 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. The student should be able to communicate to others the true role of each of the development methodologies covered in the modern business environment, and explain the management concepts and practices typically used in the industry to influence and guide the actions of others. The student should be able to relate the theories to practice, and discuss sensibly the implications of these issues in their day-to-day lives.

This understanding of current issues in information systems and information technology will also aid in the understanding of other disciplines studied in the Swinburne at Lilydale degree programs, as well as providing a strong philosophical and academic foundation for later vocational study of information technology and systems engineering.
Content
Students will study the ways in which information technology can be used for competitive advantage and planning methods that integrate information systems and business strategies. Students will also consider recent issues in outsourcing, client-server and other methodologies. Students develop an awareness of estimating and metrics approaches necessary for management of information systems and technology developments.

References

Aims & Objectives
To provide a basic introduction to accounting concepts, financial accounting, management accounting and financial management.

Content
Accounting theory and practice are examined in an historical cost accounting system. The subject includes the following topics:

- An introduction to accounting and financial statements.
- Revenue and expenses.
- Assets and liabilities.
- Cost classification.
- Cash flow statements, cost flow, profit analysis.
- Planning and evaluating merchandising activities.
- Internal performance evaluation.
- Working capital management.
- Capital structure and leverage.

Recommended reading
LBC100 Learning Guide, Swinburne, latest edn.

LBC101 Accounting Fundamentals
12.5 Credit Points • 12 Weeks • 3 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Examination, Tests, Group Assignment, Computer-Based Tasks

A Stage 1 subject in the Bachelor of Business (Tourism and Management).

Aims & Objectives
This subject 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.

Content
Topics covered include:

- Basic financial report preparation – profit & loss statements and balance sheets.
- Cash – the life-blood of a business and basic cash flow statements.
- Analysis and interpretation of financial reports – profitability, liquidity, capital structure.
- Cost classifications – functional and behavioural.
- Cost behaviour – fixed and variable costs.
- Cost-volume-profit and break-even analysis.
- Margins and mark-ups – working with percentage calculations.
- Introduction to budgeting – sales, profit and cash forecasting.
- Project evaluation – feasibility study and choosing between alternative courses of action.

References

LBC200 Computer Accounting Systems
12.5 Credit Points • 12 Weeks or equivalent • 4 Hours per Week • Lilydale • Prerequisite: LBC100 • Assessment: Assignments, Computer-Based Tasks, Examinations

A Stage 2 subject in the Bachelor of Business (Accounting), which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The development of the accounting process as an information flow to provide the basis for management control and decision-making.

Content
The computerised 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.

References

LBC201 Corporate Accounting
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBC100, LBC200 • Teaching methods: Lectures and Tutorials • Assessment: Computer-Based Assignment, Examination, Test

A Stage 2 subject in the Bachelor of Business (Accounting) which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This subject 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 implementations and applications 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 subject covers the following general topic areas:

- Corporate entities.
- Accounting for shares and debentures.
- Accounting for dividends and reserves.
- Acquisition of assets.
- Liquidation and winding-up.

References
LBC201 Learning Guide, latest edn, Swinburne University of Technology, Lilydale.

LBC202 Management Accounting I
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale •
The objectives of this subject are:

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.

Recommended reading

LBC203 Computer Cost Accounting Systems
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LBC100, LBC200, LBC202 • Teaching methods: Lecture, Tutorial, Exercises, Assignments • Assessment: Assignments, Examination
A Stage 2 subject in the Bachelor of Business (Accounting) which may also be undertaken in any other degree program at Swinburne Lilydale.

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
Hansen, DR & Mowen, MM, Cost Management: Accounting and Control, latest edn, South Western, Cincinnati, Ohio.

LBC204 Financial Management 1
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LBC100 • Teaching methods: A combination of Lectures, Tutorials, Seminars and Online Resources • Assessment: Assignments, Examinations, Tests
A Stage 2 subject in the Bachelor of Business (Accounting) which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The objectives of this subject are:
- To provide students with an understanding of the key concepts of corporate finance.
- To develop in students the skills of analysis and evaluation required to apply the concepts of corporate finance to financial management.

Content
The course 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.

Recommended reading
Brealey, RA et al., Principles of Corporate Finance, latest edn.
Petty, JW et al., Financial Management, latest edn.

LBC300 Accounting Theory
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LBC100, LBC200, LBC201, LBC202, LBC203, LBC204 • Assessment: Research Assignment, Tutorial Tasks, Examination
A Stage 3 subject 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 subject that draws upon knowledge gained from earlier accounting subjects. In particular, students are required to apply and demonstrate insights derived from the areas of corporate accounting, management accounting and financial management. The subject seeks to instil in students a critical appreciation of 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 subjects. The subject syllabus is designed to demonstrate that accounting is a problematic discipline and that, as a result, accountants do not always conform to the logical ‘bean counter’ image that is sometimes ascribed to them. On successful completion of this subject, 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 subject syllabus typically embodies the following general pattern of topic coverage:
- Regulatory framework.
- Accounting theory and Australia’s conceptual framework project.
- Wealth, income and alternative accounting systems.
- Accounting for income tax.
- Accounting for intangible assets.
- Accounting for non-current assets.
- Accounting for leases.
- Ethics in accounting.

Recommended reading
LBC300 Learning Guide, latest edn, Swinburne University of Technology, Lilydale.

LBC301 Taxation
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LBC100,LBC200 • Assessment: Assignments, Examination
A Stage 3 subject in the Bachelor of Business (Accounting) which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The overall course objective is to develop in students an understanding of the Income Tax Assessment Act together with those acts which are complementary to the Assessment Act. Specifically, the course will:

• Familiarise students with recent court and Administrative Appeals Tribunal decisions in the area of income taxation.
• Develop research skills in students in relation to current and landmark taxation cases.
• Introduce students to the complexities of taxation in relation to various taxable entities.
• With the aid of income tax rulings and the aforementioned taxation cases, develop in students an understanding of the basic concepts of income, capital, and the rules governing deductions.

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 the Goods and Services Tax.

Recommended reading
Australian Master Tax Guide, latest edn, CCH Australia Ltd, North Ryde, NSW.
Barkocy, S, Australian Tax Casebook, latest edn, CCH Australia Ltd, North Ryde, NSW.

Other Resources

LBC302 Auditing
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBC100, LBC200, LBC201 • Teaching methods: Lectures and Tutorials • Assessment: Assignments, Examinations, Tests, Practical Projects

A Stage 3 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The subject aims to familiarise students with the underlying concepts, objectives and reporting function of the auditor. The subject 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 auditing 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 EDP auditing techniques and different sampling methodologies. Students are also introduced to the area of public sector auditing.

Recommended reading

Current auditing readings as required.

LBC304 Personal Investment Issues
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBC100, LBC204 • Teaching methods: A combination of Lectures, Tutorials, Seminars and Online Resources • Assessment: Assignments, Examinations, Tests, Practical Projects

A Stage 3 subject 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. More specifically, the course 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 in a personal investment context.
• 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 personal investment portfolios.

Content
Topics include:

• Introduction to Personal Investment
• Investment in Shares
• Investment in Property
• Investment in Fixed Interest
• Investment in Managed Funds
• Investment in Derivatives
• Taxation Issues of Investments
• Economic Issues and International Investment
• Information Resources and Electronic Trading
• Superannuation and Retirement Planning
• Financial Planning and Investment Advice
• Wills and Estate Planning

Recommended reading
Winger, BJ & Frasca, RR, Investments, latest edn, Prentice-Hall.

LBC306 Strategic Financial Management
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBC100, LBC204 • Teaching methods: A combination of Lectures, Tutorials, Seminars and Online Resources • Assessment: Assignments, Examinations, Tests, Practical Projects

A Stage 3 subject in the Bachelor of Business, which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This is a final year subject designed to develop and integrate, within a strategic framework, the planning, control and decision-making techniques and skills introduced in earlier financial management studies. More specifically, the course objectives are:

• To consider the historical goals and foundations of financial management and their validity in the current business environment.
• To appreciate the need for sound corporate governance and develop approaches to meet this need.
To examine financial management processes and practices and evaluate their effectiveness and use.

To consider the role of financial management in a global corporation.

To review the current issues facing businesses in their aim of achieving sound financial management practices.

Content
The topics explored in this subject are developed within the framework of an analysis of competitive strategy and the role of strategy in financial management. Topics include:

- Goals, the Organisation and Wealth
- The Changing Finance Function
- Corporate Governance
- Shareholder Wealth
- Investment Analysis
- Cost of Capital
- Risk and Risk Management
- Corporate Collapses – Avoidance and Response
- Executive Compensation
- Mergers and Acquisitions

Recommended reading


IFAC, Managing Risk to Enhance Stakeholder Value, IFAC Financial and Management Accounting Committee, New York, 2002.


LBE100 Microeconomics
12.5 Credit Points • 13 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Nil • Assessment: Examination, Test, Tutorial Tasks/Tests
A Stage 1 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
To introduce key microeconomic concepts and to encourage and assist students to apply economic reasoning to issues facing individuals, business, non-profit organisations and government.

Content
This subject introduces students to microeconomic concepts and their application within the framework of the Australian economy. The subject begins with the concepts of scarcity, choice and opportunity cost, then examines the role of markets in allocating resources and distributing output. This is followed by an examination of the firm’s production, costs and revenues in a variety of market structures. The significance of microeconomic concepts for both business and government policy is emphasised throughout.

References


LBE200 Macroeconomics
12.5 Credit Points • 13 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBE100 • Assessment: Examination, Test, Tutorial Tasks/Tests
A Stage 2 subject 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 macroeconomic concepts, issues and policies pertaining to the Australian and global economy.

Content
The subject begins with an introduction to the meaning and measurement of economic performance and the key concepts involved in evaluating that performance. It then considers the main determinants of the level of economic activity, using both an aggregate demand/aggregate supply and an income/expenditure framework. Issues relating to fiscal policy are also examined. The subject then explores the role of money and monetary policy and issues relating to the balance of payments and exchange rates. The subject concludes by comparing the views of various schools of thought concerning appropriate policy measures to deal with macroeconomic problems, including inflation and unemployment, and to encourage economic growth. This will enable students to evaluate the impact of government macroeconomic policy on individuals, business and the economy.

References


LBE201 Managerial Economics and Strategy
12.5 Credit Points • 13 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBE100 and LCR100 • Assessment: Assignment, Examination, Test
A Stage 1 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
To show the relevance of microeconomic concepts to business decision-making.

Content
This subject 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.

References


LBE203 Environmental Economics
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBE100 • Assessment: Assignments, Examination
A Stage 2 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.
Aims & Objectives
The main objective of this subject is to familiarise students with economic techniques that can be applied to problems of environmental and natural resource management.

Content
This subject is concerned with the relationship between the natural environment and economic activity. The subject begins by looking at the economics of the environment by considering market efficiency, market failure, valuing the environment, identifying economic and non-economic instruments for managing the environment, and related macroeconomic issues. Next, matters relating to the regulation of the environment at a Federal, State and Local Government level are examined. The subject concludes by exploring some specific environmental issues including greenhouse gases, water and energy.

References

LBE301 International Trade and Finance
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBE100, LBE200 • Assessment: Assignments, Examinations, Tests
A Stage 3 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
To provide students with the theoretical and analytical skills necessary for the understanding and evaluation of international trade and financial issues.

Content
This subject begins with a consideration of some fundamental issues relating to international trade, including the basis for trade, gains from trade and the nature and effects of trade restrictions. This is followed by an examination of selected aspects of the international financial system. Attention is devoted to the historical development of the international financial system since the 1944 Bretton Woods Conference; the role, risks and regulations of international banking; the Euromarkets; the Third World debt crisis and country risk analysis. The subject concludes with an examination of the foreign exchange market in Australia. Other topics include foreign exchange forecasting, hedging techniques and the nature and role of swaps.

References
Madura, J 2003, International Financial Management, 7th edn, Thompson South-Western, USA.
**Aims & Objectives**
- To introduce students to basic legal concepts.
- To develop an understanding of the nature and function of contract law.
- To develop critical thinking and analytical skill.

**Content**
- The Australian legal system.
- The nature of contract.
- Making a contract.
- The terms of a contract.
- Vitiating a contract.
- Breach of contract.
- Remedies.

**Recommended reading**

**LBL200 Company Law**
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBL100 • Teaching methods: One 2-Hour Lecture and One 1-Hour Tutorial • Assessment: Assignment, Examination, Tests
A Stage 2 subject in the Bachelor of Business and Bachelor of Business (Accounting) which may also be undertaken in any other degree program at Swinburne, Lilydale.

**Aims & Objectives**
The intention here is to undertake a comparative analysis of the various forms of business organisations. This involves an introduction to partnership and company law.

**Content**
Topics covered include:
- Business Organisations.
- Partnerships.
- Corporate Characteristics.
- Company Constitution.
- Contractual Capacity.
- Directors and Corporate Governance.
- Raising Capital.
- Company in Distress.

**Recommended reading**
Burnett, B, *Australian Corporations Law*, latest edn, North Ryde, CCH.

**LBL201 Marketing Law**
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBL100 • Teaching methods: One 2-Hour Lecture and One 1-Hour Tutorial • Assessment: Multiple-Choice Test (25%), Class Exercise (25%), Open-Book Exam (50%)
A Stage 2 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**
The subject involves an examination of the legal controls imposed on the manufacturing, labelling, packaging, distribution, promotion, pricing, and retailing of goods and (where applicable) services.

**Content**
Topics covered include:
- Product Liability.
- Packaging and Labelling Laws.
- Advertising Regulation.
- Controls on Selling Techniques and eBusiness.
- Restrictive Trade Practices and Compliance.

**Recommended Textbook**

**LBL300 Cyber Law**
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBL100, or LAI230, or LAI240. For students who have not undertaken LBL100, there will be a requirement to attend 2 x 2-hour bridging classes. These classes are designed to introduce information technology students to the sources of law and the basic elements of the Australian legal system. The concepts of negligence and contract will be examined in this context. For students who have not undertaken any studies in information technology, there may be a requirement to complete a module on information technology. Teaching methods: One 2-Hour lecture and One 1-Hour Tutorial • Assessment: To be confirmed but the following is proposed: Multiple-Choice Test (20%), Research Essay (40% - Maximum length 3000 words), End-of-Semester Online Examination (40%)
A Stage 3 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**
- To examine whether, and to what extent, computing and data communications technologies are giving rise to a distinctive new field of law.
- To identify the subject matter, legal concepts and analytic 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.

**Content**
The subject will examine how the law deals with the use of information and communication technology (ICT), with a specific focus on electronic enterprise (with an emphasis on eBusiness) and computer networks or ‘cyber’ business (of which the Internet is the largest and best known component). The legal content will include domestic law (Australia and Victoria) and international laws where relevant.

**Topics include:**
- Communications Law
- Intellectual Property
- Electronic Media & Online Content Issues
- Contracts and Electronic Business
- Consumer Protection
- Cybersmear
- Privacy Issues
- Computer Crime/Cyber Crime
- Electronic Trading and Banking Issues
- Social and Ethical Issues
Recommended Textbook

Recommended reading
Akindemowo, O 1999, Information Technology Law in Australia, LBC Information Services, Sydney.

LBM100 Marketing Concepts
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: Nil • Assessment: Assignments, Class Exercises, Class Presentations, Examinations
A Stage 1 subject 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 subject, the successful student will have achieved an understanding of key concepts used for the integration of a variety of ideas on business-customer exchanges and an understanding of the role of the marketing function. This understanding of marketing and marketing people will aid in the understanding of other disciplines in the Bachelor of Business as well as providing a strong philosophical foundation for the vocational study of marketing.

Content
The subject provides common year 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.

Textbook
Textbook to be advised.

Recommended reading

Other supporting material will be prescribed, when appropriate, in lectures. It is expected that extensive use will be made of the large collection of relevant material in the library, including books and current journals.

LBM200 Marketing Behaviour
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LBM100 • Assessment: Assignments, Class Presentations, Examinations
A Stage 2 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale. This subject is a mandatory requirement for a major sequence in marketing.

Aims & Objectives
The objective of this subject is to study the process of choice in both consumer and business-to-business purchasing contexts, along with its determinants and its implications for marketing strategy.

Content
At the completion of the subject, 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.
- Market strategy.

The main influences impacting on business-to-business purchasing decisions:
- The DMU (Decision Making Unit) or buying centre.
- Organisational factors and constraints.

This subject 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 emphasises 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 levels, which allow further development of marketing knowledge in later stage subjects.

Textbook
Textbook to be advised.

Recommended reading

Other supporting material will be prescribed when appropriate. It is expected that extensive use will be made of the large collection of relevant material in the library, including books and current journals.

LBM201 Marketing Planning
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LBM200 • Assessment: Assignments, Class Presentations, Examinations
A Stage 2 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale. It is a mandatory requirement for a major sequence in marketing.

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 subject 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 subject 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.
• 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 reports required. The major assignment requires formulation of a marketing plan for an organisation.

Framework:
• The structure and process of marketing planning.
• Sources of information in marketing planning.
• The external environment analysis the customer and the industry.
• The corporate appraisal.
• Analytical tools.
• Tools in marketing planning.
• Developing marketing objectives.
• Marketing programs.
• Product, promotion, distribution and price planning.

Textbook
Textbook to be advised.

Recommended reading

Other supporting material will be prescribed when appropriate. It is expected that extensive use will be made of library resources.

LBM202 Marketing Communications
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBM201 or LBM202 (Marketing Major) • Assessment: Assignments, Class Presentations, Examinations
A Stage 2 subject which is a mandatory requirement for a major sequence in marketing and may also be undertaken in any other degree program at Swinburne Lilydale. This subject is a mandatory requirement for a major sequence in marketing.

Aims & Objectives
The marketing communications industry is a rapidly growing sector of marketing. This subject 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 effective implementation.

Content
Topics include:
• The integrated marketing communication process.
• Planning the communication budget.
• Inside an advertising agency.
• Media relations.
• Public relations and publicity.
• Sales promotion.
• Direct marketing.
• International advertising.
• Evaluating the effectiveness of the communication strategy.

Textbook
Textbook to be advised.

Recommended reading

LBM300 Product Management
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBM202 for Marketing Major & LBM201 for Marketing Minor • Assessment: Assignments, Examinations, Major Presentation
A Stage 3 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale. This subject is a mandatory requirement for a major sequence in marketing.

Aims & Objectives
Students enrolling in this subject come 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 Communication. The objective of this subject is to enable students to apply their marketing knowledge to the specific area of product management. Specific objectives address product development issues from the 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 treated as contributory disciplines.

Content
• To explore the meaning, importance and function of the product management role in business today.
• To examine the impact of product management practices on the development of goods and services based products.
• To examine the range of concept-generating techniques used for new product development.
• To examine the means of evaluating new product ideas.
• To examine the preparation of a product, a product launch plan and its importance as a marketing control tool for new products, product maintenance and product ‘re-launches’.
• To understand 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.
• To explore the international aspects of product management.
• To understand the importance of successful working relations within the organisation, particularly with sales, production, supply and research and development, in the product development process.

Textbook
Textbook to be advised.

Recommended reading

LBM301 Services Marketing and Management
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBM200, LBM202 for a Major) • Assessment: Assignments, Case Studies, Examinations
A Stage 3 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale. This subject is a mandatory requirement for a major sequence in marketing.
Aims & Objectives
The services business is the fastest growing sector nationally as well as globally. This subject explores the major differences between the marketing of services as distinct from 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 services environment.
- Communication and services.
- Demand management.
- Service quality.
- Managing service culture.
- Implementing the service strategy.
- International services and its future.
- Investigating a service industry of your choice (eg. financial services, hospital services, insurance industry, catering services, etc.).

Recommended reading
Bateman, JEG 1995, Managing Services Marketing, 3rd edn, Dryden, Orlando, Fl.
Lovelock, C 1996, Services Marketing, 3rd edn, Prentice-Hall, USA.

LBX300 International Business Strategies
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Successful completion of the first two years of a degree • Assessment: Test, Assignments, Oral Presentation
A Stage 3 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The aim of this multidisciplinary subject is to expose students to the culture and business practices of selected countries. Students travel abroad and visit various companies to experience first-hand a host country’s business practices and observe and evaluate how they have achieved, or are pursuing, their strategic objectives. Travel overseas is preceded by a series of seminars and briefing sessions. The travel costs will be borne by students.

Content
The subject begins by exploring three aspects of the environment in which an international business operates—the process of globalisation, the impact of differing political, economic, social and legal factors between countries and the implications culture has for business. Next, the development of business strategies across foreign markets, the nature of a company’s structure and internal control mechanisms, and various methods of entering a foreign market are examined. Finally, attention is devoted to selected business functions—marketing, human resource management, finance and eCommerce—which all need to work in harmony if a corporate strategy is to be achieved. By travelling overseas and visiting a range of companies, students will better understand and appreciate the complex issues facing international business.

References

LCI101 Information Methods
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Nil • Assessment: Class Presentations, Examinations, Hurdle Test, Workshops
A Stage 1 core subject in all degree programs at Swinburne Lilydale.

Aims & Objectives
To understand the what, why, when and how of information. Students will concentrate on understanding why we need information, understand how information is created, recognise information quality through the employment of critical and creative thinking methods, the study of semiotics.

Content
This subject will expand the use of information literacy through information technology literacy, in particular, spreadsheet, word processing, presentation management, information databases, Internet, etc. This subject covers information methods such as codification, storage, searching, communication, presentation and learning.

References
Iannuzzi, P, Mangrum, CT & Strichart, SS 1999, Teaching Information Literary Skills, Allyn & Bacon, USA.

LCL100 Learning and Communication Behaviour
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Nil • Assessment: Class Presentations, Examinations, Hurdle Test, Workshops
A Stage 1 core subject in all degree programs at Swinburne Lilydale.

Aims & Objectives
On completion of this subject, 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 subject 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 of the subject, to their participation in the community, the workplace and the international arena.

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.

References
Iannuzzi, P, Mangrum, CT & Strichart, SS 1999, Teaching Information Literary Skills, Allyn & Bacon, USA.
Aims & Objectives
The unit is designed to introduce students to the research process and develop basic skills and appropriate methodology to collect, describe, analyse and present statistical data across a range of disciplines. No prior mathematical knowledge is assumed.

Content
The subject includes discussion of research design and data collection, techniques for picturing and analysing univariate and bivariate data and a thorough discussion of statistical inference, in terms of both hypothesis testing and estimation (confidence intervals). The TI83 graphics calculator is used to carry out the statistical analyses, so that the focus of the unit can be the meaningful interpretation of the results.

Recommended reading

LCT100  Science, Technology and Society
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: Nil • Teaching methods: This Subject is taught in Block Mode.
Students will attend 6 Weeks of Intensive Classes, including a Weekly Lecture and Tutorial • Assessment: Essay, Weekly Tutorial Tasks
A Stage 1 core subject in all degree programs at Swinburne Lilydale.

Aims & Objectives
To introduce students to the relationship between science, technology and society. The subject explores the issue of technological determinism and science, scientific and technological change in the context of our emerging electronic society.

Content
To introduce students to the relationship between science, technology and society. The subject explores the issue of technological determinism and science, scientific and technological change in the context of our emerging electronic society.

• Science, and scientific method.
• Science and technology in contemporary economies.
• Technological innovation and transfer.
• Historical modes of communication.
• Changing modes of communication: electronic society?
• Power bases: whose information revolution?
• Functional and institutional convergence: media, information technology and telecommunications.
• Forces for globalisation.
• Superhighways or superhighways?
• Cultural impact of new communications technologies.
• Construction of society and new modes of communication: eg. Internet, virtual reality.
• Threats: misuse of information, privacy, inequality.

Recommended reading
G21: Global Cultural Dreaming, CD-ROM, Swinburne University of Technology.

References
Kienan, B 2000, Small Business Solutions: ECommerce, Microsoft Press, USA.

LEB100  Accounting and Finance
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Prahran
• Prerequisite: Nil • Teaching methods: Groups will have Lectures, Discussions, Reading and a Variety of Other Learning Activities. Use will be made of Electronic Communication. Computer Facilities and Internet Access will be used. • Assessment: Contributions to Online Conference Boards, Chat Sessions, Internet-based Research Projects and Assignments, Tests, Case Studies and Examinations
A subject in the Bachelor of Business (eCommerce).

Aims & Objectives
This subject has three aims:

• Provide the participant with the knowledge and skills to interpret accounting information and reports and to apply the knowledge to businesses with both a traditional and an eCommerce focus.
• Provide the participant with the knowledge and skills to apply mathematical techniques to a variety of business and eCommerce applications and decisions.
• Provide the participant with the knowledge and skills to interpret and use statistical techniques in a variety of business activities.

On completion of this subject, students will be able to:

• Describe the basic accounting concepts of assets, liabilities, equity, revenue and expense, and explain their relationship through the accounting equation.
• Describe the operation of the double entry bookkeeping system and analyse simple business transactions.
• Describe the purposes and formats of financial accounting reports.
• Explain the limitations of published accounting reports.
• Describe the environment and purpose of accounting standards.
• Calculate and interpret basic ratios for analysing financial statements.
• Define common costing concepts and describe the key features of conventional cost accounting systems.
• Explain the role of budgeting in financial planning and control and describe the budgeting process.

LEB101  The Marketing Concept
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Prahran
• Prerequisite: Nil • Teaching methods: Groups will have Lectures, Discussions, Reading and a Variety of Other Learning Activities. Use will be made of Electronic Communication. Computer Facilities and Internet Access will be used. • Assessment: Contributions to Online Conference Boards, Chat Sessions, Internet-based Research Projects and Assignments, Tests, Case Studies and Examinations
A subject in the Bachelor of Business (eCommerce).
Communication and Subject Websites. Computer Facilities and Internet Access will be used. • Assessment: Contributions to Online Conference Boards, Chat Sessions, Internet-based Research Projects and Assignments, Tests, Case Studies and Examinations.

A subject in the Bachelor of Business (eCommerce).

Aims & Objectives

To provide an overview of the basic principles of marketing and illustrate the application of these core marketing concepts to a range of traditional, non-traditional, and electronic-based business activities.

On completion of the subject students will be able to:

• Identify and explain the evolution of the marketing concept.
• Identify the components of the strategic plan and the marketing plan and explain the relationships between the two.
• Analyse marketing information systems and describe their relationship with marketing research.
• Analyse an organisation’s macro (external) and micro (internal) environments.
• Explain the significance of consumer behaviour in consumer markets.
• Explain the significance of business-to-business (B2B) markets and describe B2B buying behaviour.
• Identify the bases for market segmentation and apply this information in selecting target markets and developing positioning strategies for those markets.
• Analyse the elements of the marketing mix and how they constitute the core of an organisation’s marketing system.
• Describe and apply appropriate planning, organising, controlling, implementation, and evaluation strategies.
• Analyse market applications in international, service, and non-profit markets.

Content

• Evolution of the marketing concept.
• Components of strategic and marketing plan.
• Marketing information systems.
• Macro and microenvironments.
• Introduction to consumer, industrial, international, and non-profit markets.
• Market segmentation, targeting, and positioning.
• Marketing mix.
• The application of eMarketing techniques to new and existing business sectors.

References


Websites

Australian Bureau of Statistics (ABS), www.abs.gov.au
In addition students will be encouraged to search relevant websites and other online resources.

LEB102  eCommerce Management 1

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale; Prahran
• Prerequisite: Nil • Teaching methods: Groups will have Lectures, Discussions, Reading and a Variety of Other Learning Activities. Use will be made of Electronic Communication and Subject Websites. Computer Facilities and Internet Access will be used. • Assessment: Contributions to Online Conference Boards, Chat Sessions, Internet-based Research Projects and Assignments, Tests, Case Studies and Examinations.

A subject in the Bachelor of Business (eCommerce).

Aims & Objectives

The purpose of this subject is to develop skills and knowledge in managing internal and external customer relationships strategically and to develop an understanding of the importance and workings of business information systems.

On completion of the subject students will be able to:

• Identify and address the customer’s product and service requirements.
• Analyse organisational cultures, philosophies, ethics and associated behaviours.
• Employ situational analysis to determine the impact of external influences on an organisation and identify success and failure factors.
• Conduct internal situational analysis of an organisation, business unit or functional division.
• Identify, generate, evaluate and select strategy alternatives for organisations.
• Recommend procedures and processes for the implementation, monitoring, maintenance and evaluation of selected strategies and performance.
• Explain the role and importance of business information processing in the context of eCommerce.
• Describe the inputs and outputs of business information systems and the relationship between them.
• Distinguish between management information systems and decision support systems.
• Identify your career aspirations and perform a related skills assessment.

Content

• Internal and external customer analysis.
• Managing customer service.
• Data warehousing and data mining.
• One-to-one marketing and business to business networking call centres.
• Strategic management concepts, processes and techniques.
• Competitor analysis and key success factor analysis.
• Alternative strategies.
• Cultural, ethics and influence.
• Strategy implementation.
• Business information systems.

References

Aldrich, DF 1999, Mastering the Digital Market Place, John Wiley & Sons, USA.
Amor, D 1999, The E-business (Re)volution, Prentice Hall, USA.
Dyche, J 2000, e-Data: Turning Data into Information with Data Warehousing, Addison Wesley Longman, USA.
Kalakota, R & Robinson, M 2001, E-Business: Roadmap for Success 2.0, Addison Wesley, USA.
Strauss, J & Frost, R 1999, Marketing on the Internet, Prentice Hall, USA.

Websites

Peppers and Rogers, www.1to1.com
Internet World Guide to One-to-One Web Marketing, www.1to1web.com
@Brint.com, www.brint.com
Fastcompany.com, www.fastcompany.com
LEB103  Computing/ Multimedia 1

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale; Prahran
• Prerequisite: Nil  Teaching methods: Groups will have Lectures, Discussions, Reading and a Variety of Other Learning Activities. Use will be made of Electronic Communication and Subject Websites. Computer Facilities and Internet Access will be used. • Assessment: Contributions to Online Conference Boards, Chat Sessions, Internet-based Research Projects and Assignments, Tests, Case Studies and Examinations

A subject in the Bachelor of Business (eCommerce).

Aims & Objectives

This subject aims to introduce students to the basic skills of operating a computer and using business software applications. In addition, it aims to develop student’s ability to identify and discuss social, legal and employment issues in relation to the development and implementation of multimedia applications and the resultant impact on eCommerce. Students will develop their writing skills in the context of the web and interactive media.

On completion of the subject students will be able to:

- Operate a computer and use fundamental business software applications effectively - word processing, spreadsheet manipulations, simple database creation.
- Manage and use electronic mail in ways relevant to the business workplace.
- Discuss the multimedia industry and its impact on society.
- Discuss the use of multimedia applications in the home, education, entertainment and the workplace.
- Identify legal issues pertinent to the development and distribution of multimedia titles.
- Discuss employment issues in relation to the multimedia industry.
- Identify the distinctive characteristics of writing for the web.
- Describe the key features required when writing for interactive media.
- Write for the web and interactive media.

Content

- Operating system functions.
- Word processing fundamentals.
- Email handling.
- Spreadsheet fundamentals.
- Database fundamentals.
- The multimedia industry.
- Government policy in relation to multimedia.
- Multimedia applications and the eCommerce environment.
- Employment opportunities in multimedia.
- Writing for the web.
- Writing for interactive multimedia.

References

References will vary depending on the version of the software being used. The following authors write software manuals complete with exercises for all of the multimedia titles.

Hofstetter, F 1997, Multimedia Literacy, McGraw-Hill, USA.
Shelly, G & Cashman, TJ 1998, Course Technology, Cambridge, USA.
Vaughan, T 1996, Multimedia: Making it Work, Osborne McGraw-Hill, USA.

LEB104  Communication

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale; Prahran
• Prerequisite: Nil  Teaching methods: Groups will have Lectures, Discussions, Reading and a Variety of Other Learning Activities, including Role Plays, Case Studies and Presentations. Use will be made of Electronic Communication and Subject Websites. Computer Facilities and Internet Access will be used. • Assessment: Case Studies, Written Proposal, Role Plays, Presentation and a Written Investigative Report

A subject in the Bachelor of Business (eCommerce).

Aims & Objectives

The aim of this subject is to introduce the theoretical and practical aspects of communicating in an eCommerce environment, including team building, negotiation, problem-solving and intercultural communication. It also aims to introduce students to both the theoretical and practical aspects of presenting reports, in written and oral form, in both a traditional business and an eCommerce environment. The emphasis will be on writing and presenting a document investigating a specific issue.

On completion of the subject students will be able to:

- Select strategies to establish a work team communication climate.
- Use communication skills necessary to organise and manage work teams.
- Represent work teams to others.
- Negotiate to achieve and agreed outcome.
- Define problem-solving.
- Evaluate and implement solutions.
- Identify values, attitudes and behaviours related to intercultural communication and develop cultural sensitivity.
- Undertake problem analysis.
- Research material relevant to an issue.
- Analyse information and develop/identify solutions relating to an issue.
- Produce a document such as an investigative report, submission, proposal or briefing notes.
- Deliver an oral presentation, including slides, based on the written document.

Content

- Operating system functions.
- Word processing fundamentals.
- Email handling.
- Spreadsheet fundamentals.
- Database fundamentals.
- The multimedia industry.
- Government policy in relation to multimedia.
- Multimedia applications and the eCommerce environment.
- Employment opportunities in multimedia.
- Writing for the Web.
- Writing for interactive multimedia.

References

Eunson, B 1994, Writing and Presenting Reports, John Wiley & Sons, Brisbane.

Websites

gens8003.safesci.unsw.edu.au/report_writing.html
www.libs.murdoch.edu.au/libinfo/gdes/refgdes/cite/cite.html
wwwlib.murdoch.edu.au/libinfo/gdes/refgdes/cite/cite.html
gens8003.safesci.unsw.edu.au/report_writing.html
www.libs.murdoch.edu.au/libinfo/gdes/refgdes/cite/cite.html
www.unisaman.unisa.edu.au/learningconnection/resprocess/resources.htm

LEB105  eCommerce Fundamentals

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale; Prahran
• Prerequisite: Nil  Teaching methods: Lectures, Discussions, Reading and a Variety of Other Learning Activities, including Role Plays, Case Studies and Presentations. Use will be made of Electronic Communication and Subject Websites. Computer Facilities and Internet Access will be used. • Assessment: Case Studies, Written Proposal, Role Plays, Presentation and a Written Investigative Report

A subject in the Bachelor of Business (eCommerce).
A subject in the Bachelor of Business (eCommerce).

**Aims & Objectives**
The first aim of this subject is to enable students to identify current trends and developments in electronic commerce (eCommerce) in relation to SMEs (small to medium enterprises). Recognise the importance of suitable marketing strategies for implementation in an eCommerce environment.

On completion of this subject students will be able to:
- Define and explain eCommerce and identify current trends and developments in relation to small and SMEs (small to medium enterprises).
- Discuss global legal and security issues in relation to electronic commerce.
- Explain the importance of marketing strategies in relation to eCommerce.
- Demonstrate a practical understanding of eCommerce and its implementation.
- Identify and analyse inter- and intra-company electronic business functions and communications and the application of extranet gateways to online B2B operations.
- Identify the role of strategic partnerships and alliances in facilitating eCommerce and eSupply chain management.
- Discuss procurement and identify the main issues and models of eCommerce.
- Identify the online tendering process.
- Identify the role of logistics and inventory management in an eCommerce framework.

**Content**
- Electronic commerce and its history.
- Strengths and weaknesses of eCommerce.
- Customer/merchant and merchant/merchant interaction in eCommerce.
- Managing change in eCommerce.
- Supply chain management.
- Advertising online services.
- Integrating and managing eCommerce in a business.
- Internet, intranet, and extranet company electronic functions and gateways.
- eProcurement and online tendering.
- Logistics and inventory management.
- Order and service fulfilment.
- EDI.
- Automating/digitising/sourcing processes such as transport, warehousing, materials handling and packaging.
- Disintermediation and reinternmediation.
- Supply and distribution channel design.
- International channel management.

**References**
- Amor, D 2009, The E-business (Revolution), Prentice Hall, USA.

**Websites**
This list of sites is by no means comprehensive and learners are encouraged to search for others (and to engage in chat sessions, e.g. www.delanews.com).

Web page development evaluations and models: www.apstrategies.com.au
Site management and traffic reporting: www.webtrends.com
Full report on SME survey: www.aebn.org.au

Internet terminology and web useability features: www.dotparagon.com
Telstra's shop safe software: surelink.com.au
Internet advertising rates and services: www.admedia.org/internet
Internet industry governing bodies:
- ACCC – Australian Competition and Consumer Commission.
- Office of Fair Trading.

Current magazines, e.g. Interact and PC User, Newspapers, e.g. The Australian, The Age and Australian Financial Review.

**LEB106 Business Law**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale, Prahran
- Prerequisite: Nil • Teaching methods: Lectures, Discussions, Reading and a Variety of Other Learning Activities, Including Role-Plays, Case Studies and Presentations • Assessment: Case Studies, Tests, Internet Projects

A subject in the Bachelor of Business (eCommerce).

**Aims & Objectives**
Facilitate student learning of a sound knowledge of basic commercial law principles, basic contract law and a selection of specialty contracts, and basic consumer law principles applicable within an eCommerce environment. Introduce students to the nature and importance of occupational health and safety.

On completion of the subject students will be able to:
- Describe the historical origins of commercial law and the legal framework of business.
- Recognise the relevance of tortious liabilities in business.
- Demonstrate an understanding of the use of negotiable instruments as a means of exchange and the operation of the Financial Transactions Reports Act.
- Describe the formation, operation and termination of contracts.
- Demonstrate an understanding of the concept of property and the nature of mortgages including the rights and obligations of the parties.
- Delineate the types of insurance and explain the circumstances under which a claim on an insurer may be rejected.
- Describe the statutory provisions and principles relevant to the sale of goods which accountants are required to apply in the course of business.
- Describe and explain the principles of consumer protection legislation as it applies to contract law and specifically the rights and duties in relation to contracts with ‘consumers’.
- Discuss the operation of Part IV of the Trade Practices Act.
- Understand the legal process involved in the collection of debts and the rights and obligations of debtors and creditors.
- Delineate the types of legal protection available for intellectual property.
- Understand the legal issues and implications of occupational health and safety.

**Content**
- Origins of law and legal institutions.
- Civil liability.
- Business entities.
- Negotiable instruments.
- Financial Transaction Reports Act.
- Contract law.
- Law of property and mortgages.
- Leases, franchises and hire purchase.
- Insurance.
- Sale of goods.
- Consumer protection legislation.
- Restrictive trade practices.
- Debt collection.
- Intellectual property.

**References**
Aims & Objectives

To enable students to understand the importance and role of culture and ethics in eCommerce professional practice. Students will attend a series of seminars describing and discussing the impact of cultural and ethical issues in the context of eCommerce. Industry representatives will be involved in some of the seminars to add a practical focus. Students will develop critical and analytical skills as well as theoretical understandings as a foundation for subsequent subjects and projects. Students will complete a small research project exploring facets of cultural and ethical issues in eCommerce.

Content

To be selected from contemporary issues and available seminar presenters.

References


In addition students will be directed to relevant websites and encouraged to research other online resources.

LEB200 Economics and Finance

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale; Prahran

Prerequisite: Nil • Teaching methods: Lectures, Discussions, Reading and a Variety of Other Learning Activities, including Role-Plays, Case Studies and Presentations • Assessment: Contributions to Discussion, Chat Forums etc, Internet Research Projects, Case Studies and Tests

A subject in the Bachelor of Business (eCommerce).

Aims & Objectives

To provide students with opportunities to develop a knowledge of the economic environment within which a business operates and to take account of globalisation and an increasing international business focus.

On completion of this subject, students will be able to:

• Describe the economic problem, classify economic systems and identify contemporary changes in systems.
• Apply simple demand and supply analysis.
• Identify the characteristics of economic markets and interferences.
• Explain the role of financial institutions and the nature of money.
• Explain the reasons for trade between countries, the characteristics of Australia's international trading position and how it influences the economy.
• Understand the implications of eCommerce for traditional business and the changing nature of the business world.
• Use short-term decision-making techniques to solve a variety of problems.
• Use longer-term decision-making techniques of capital investment analysis.

Content

• The basic economic problem.
• Economic systems.
• Demand, supply, and equilibrium.
• Market structures.
• Financial institutions and the nature of money.
• International trade including balance of payments and exchange rates.
• Macro-economic model, objectives, and policies.
• Unemployment and inflation.
• Monetary and fiscal policy.
• Economic growth.
• Globalisation and the eCommerce economy.
• External eCommerce factors affecting decision-making.
• eCommerce operating cycles.
• Payment and security online.
• Principles of cost benefit analysis.
Describe the foundations of managing customer relationships that shape e-Commerce organisation.

On completion of this subject students will be able to:

- Manage and market to customers, and to understand the impact of customer relationship management on the eCommerce organisation.
- Explore customer confidence through data privacy.
- Understand simple principles of web site design and structure for marketing.
- Explore customer confidence through data privacy.
- Analyse the impact of electronic service delivery on businesses and customers.
- Assess the importance of eMarketing fulfilment on short and long term performance.
- Describe the role of eMarketing.
- Identify eMarketing resources and undertake marketing research.
- Apply eMarketing tools.
- Understand the CRM process and organisational structure.
- Explore customer confidence through data privacy.
- Explain the role of eMarketing.
- Apply the process and eMarketing analysis and strategy development.

**References**

Booth, A 1999, Making the Internet Work for your Business, Allen & Unwin, Australia.
Kienan, B 2000, Small Business Solutions: E-Commerce, Microsoft Press, USA.

In addition, students will be directed to relevant websites and encouraged to research other online resources.

**Websites**

- Data mining information: www.spss.com/ecrm/ www.siebel.com/
- Customer value and segmentation: www.crm-forum.com/
- Supplier with good papers and articles: www.pointinfo.com/dynamic/Site
- UC UK company surveys: www.crmproject.com/ukcompany.html
- Download good whitepaper that discusses customer value and segmentation: www.crmproject.com/ukcompany.html
- Peppers and Rogers: www.1to1.com/
- Customer retention and profitability.
- Data privacy.
- One-to-one marketing.
- CRM measurability and accountability.
- eMarketing analysis and strategies.
- eMarketing resources and research.
- eMarketing tools and service providers.
- Website design and structure.
- eMarketing fulfilment.

**Aims & Objectives**

To enable students to use information and technology to understand, categorise, manage and market to customers, and to understand the impact of customer relationship management on the eCommerce organisation.

On completion of this subject students will be able to:

- Describe the foundations of managing customer relationships that shape eCommerce today.
- Define the Customer Relationship Management (CRM) process.

**Content**

- The cost and lifetime ownership of customers.
- Customer segmentation and positioning.
- The CRM process and organisational structure.
- eBusiness commerce models.
- Data warehousing and data mining.
- Enabling technologies.
- Customer retention and profitability.
- Data privacy.
- One-to-one marketing.
- CRM measurability and accountability.
- eMarketing analysis and strategies.
- eMarketing resources and research.
- eMarketing tools and service providers.
- Website design and structure.
- eMarketing fulfilment.

**References**

Dorf, B et al. 1999, The One to One Fieldbook: The Complete Toolkit for Implementing a 1 to1 Marketing Program.
Peppers, D & Rogers, M 1993, The One to One Future: Building Relationships One Customer at a Time.
Peppers, D & Rogers, M 1999, The One to One Manager: Real-World Lessons in Customer Relationship Management.
Seibold, PB 1999, Customers.com: How to Create A Profitable Business Strategy for the Internet and Beyond, Prentice Hall, USA.

**Websites**

- Data mining information: www.spss.com/ecrm/ www.siebel.com/
- Customer value and segmentation: www.crm-forum.com/
- Supplier with good papers and articles: www.pointinfo.com/dynamic/Site
- UC UK company surveys: www.crmproject.com/ukcompany.html
- Download good whitepaper that discusses customer value and segmentation: www.crmproject.com/ukcompany.html
- Peppers and Rogers: www.1to1.com/

Students will be encouraged to research other online resources.
LEB202 eCommerce Management 2

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale; Prahran
• Prerequisite: LEB102 and LEB105 • Teaching methods: Lectures, Discussions, Reading and a Variety of Other Learning Activities. Use will be made of Electronic Communication. Computer Facilities and Internet Access will be used. • Assessment: Contributions to Online Conference Boards, Chat Sessions, Internet-based Research Projects and Assignments, Tests, Case Studies and Examinations
A subject in the Bachelor of Business (eCommerce).

Aims & Objectives
The first aim of this subject is to enable students to gain the knowledge and develop the skills to plan, develop and implement strategies, including effective human resource strategies, to manage change for individuals and work teams in an eCommerce environment. The second aim of this subject is to enable students to identify key information technologies for gathering, storing, accessing and disseminating information in an eCommerce information and knowledge management system.
On completion of this subject students will be able to:

• Develop strategic options to manage change.
• Describe and match future requirements with appropriate resource allocation.
• Develop a work culture consistent with eCommerce needs.
• Implement agreed change strategies and monitor their effectiveness.
• Explain the development of management database systems and data access.
• Describe methods of gathering information online.
• Explain how the use of eCommerce information and knowledge management systems maximises business potential, and make recommendations to improve information systems.
• Describe security and control issues as well as the ethical challenges involved in using eCommerce information technologies.

Content
• Analysis of work team needs: internal and external environment.
• Planning and developing strategies for future needs and for implementing and managing change.
• Managing impediments to change.
• Developing and implementing strategies for appropriate allocation of financial, technological and human resources to support change.
• Developing and managing a team culture that supports change and enables eCommerce activities.
• Management of information.
• Database development, integration and access.
• Gathering online information.
• Maximising the potential of information and knowledge.
• Security, control and ethical challenges using eCommerce information technologies.

References
Baskin, C & Adam, S 1999, Managing on the Internet, Prentice Hall, Australia.
Dych, J 2000, e-Dating: Data Mining into Information with Data Warehousing, Addison Wesley Longman.
Kalakota, R & Robinson, M 1999, E-Business: Roadmap for Success, Addison Wesley, USA.

LEB203 Computing / Multimedia 2

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale; Prahran
• Prerequisite: LEB103 • Teaching methods: Lectures, Discussions, Reading and a Variety of Other Learning Activities. Use will be made of Electronic Communication and Subject Websites. Computer Facilities and Internet Access will be used. • Assessment: Contributions to Discussions and Workshops, Projects, Project Development for a Case Study
A subject in the Bachelor of Business (eCommerce).

Aims & Objectives
This subject aims to enable students to develop basic skills and knowledge in using appropriate hardware and software to produce media elements for a multimedia program for use in an eCommerce environment. Media elements include text, graphics, video, audio and animation. The media elements must meet the specifications of a given multimedia program flowchart and storyboard.
On completion of the subject students will be able to:

• Explain how the creation of multimedia elements relates to the whole process of producing a multimedia presentation.
• Use vector and bitmap based graphics software to create graphical elements.
• Select and describe digitising methods for a variety of items.
• Use a flat-bed scanner, image editing software, video production, editing hardware and software tools and simple 2D animation.
• Create Web pages with multimedia.
• Describe the main technology used for eCommerce.

Content
• Designing multimedia programs and media elements.
• Producing media elements – text, graphics, video, audio and animation – in accordance with given multimedia flowchart and storyboard.
• Creating Web pages with multimedia technology for eCommerce.

References

LEB204 eCommerce Management 3

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale; Prahran

"The E-commerce Guide: www.whatisthecoecommerce.com
Knowledge Management Glossary: www.bus.utexas.edu/kmar/glossary.htm
Some Principles of Knowledge Management: www.bus.utexas.edu/kmar/kmprimer.htm
Online professional magazines, such as MIS and CIO, contain useful information about IT issues. Newspapers are another source of information.

Swinburne University of Technology | Undergraduate Course Handbook 2004
LEB205 Issues in eCommerce 2

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale; Prahran

• Prerequisite: LEB102 and VRK256 • Teaching methods: Lectures, Discussions, Reading and a Variety of Other Learning Activities. Use will be made of Electronic Communication. Computer Facilities and Internet Access will be used. • Assessment: Contributions to Online Conference Boards, Chat Sessions, Internet-based Research Projects and Assignments, Tests, Case Studies and Examinations. A subject in the Bachelor of Business (eCommerce).

Aims & Objectives
To facilitate students as they develop a knowledge of basic legal, security, ethical and policy issues associated with eCommerce. To enable students to develop the skills to allow them to identify and define commercially viable trends and opportunities arising from the information technology marketplace.

On completion of the subject students will be able to:

• Discuss the legal implications of borderless, paperless trade.
• Examine the security concerns of private citizens and business engaging in eCommerce and the proposed range of practical strategies and solutions.
• Determine the issues and concerns of globalisation and eCommerce.
• Describe the importance of privacy protection while trading online and examine the relevant legislation.
• Identify key historical and current forces for change and shaping future information technology trends.
• Describe current trends in the information technology industry and the opportunities that exist within other Australian industries.
• Formulate possible future opportunities that may develop from the changes and trends in Australia today.
• Explain income measurement and accrual accounting and prepare accounting worksheets to assess financial viability.

Content

• Legal implications of borderless, paperless trade.
• Security issues for transactions and information.
• Technical aspects of security.
• Designing an IT security framework.
• Ethical issues of globalisation.

References
LEB207  Social and Sustainability Issues for eCommerce Professional Practice

12.5 Credit Points  •  10 Weeks or equivalent  •  3 Hours per Week  •  Lilydale; Prahran
 •  Prerequisite: LEB108  •  Teaching methods: Seminar Series and Discussions. Individual Learning Journal. Both TAFE and Higher Education staff will be involved.
 •  Assessment: Case Studies, Contributions to Discussion, Chat Forums etc.
A subject in the Bachelor of Business (eCommerce).

Aims & Objectives
Using a case study approach, the seminars will present students with a range of practical and theoretical insights and tools for understanding social, cultural, sustainability and ethical issues in eCommerce.
Students will participate in seminars discuss, analyse and critique eCommerce practices and experiences.

A journal documenting students’ ongoing analysis, critique and insights of their learning journey will enable them to reflect on their progress.

Students will undertake case studies to examine and illustrate the complexities of social, sustainability and ethical questions that need to be addressed in eCommerce professional practice.

Content
To be selected from contemporary issues and available seminar presenters.

References
Students will be directed to relevant web sites and journal articles and encouraged to independently search for other books and online resources.

LEB300  Managing the Transition to Global Business

12.5 Credit Points  •  12 Weeks or equivalent  •  3 Hours per Week  •  Lilydale; Prahran
 •  Prerequisite: Completion of at least fourteen first and second year subjects, for LEB300. Completion of all first and second year subjects for LEB300D.
 •  Teaching methods: This subject may be studied using different combinations of the available learning resources and activities to form a flexible learning approach for each student. Students may choose a combination that suits their location, timing, commitments and style of learning.
 •  Assessment: To be advised but may include individual assessment, backed up by an individual or team-Learning Contract.

A subject in the Bachelor of Business (eCommerce) and also offered (coded LEB300D) as an elective subject for some courses offered by the National School of Design. LEB300D is offered at Prahran campus only.

Aims & Objectives
eCommerce is a key element in the globalisation process. Understanding this requires a sound knowledge and appreciation of the theoretical and practical issues in managing organisational transition to new global business practices and environments. The focus will be on helping students understand the nature of the new global marketplace, particularly issues of access and equity. The ideological underpinnings of eCommerce and worldwide markets will be examined in some detail. It also examines the nature, the implications and the consequences of adopting online strategies, activities and eCommerce business performance. After completing this subject students will be able to:

 •  Describe the technological, economic and political bases of eCommerce.
 •  Explain the process and importance of strategic thinking in eCommerce.
 •  Map designs of eCommerce models.
 •  Prepare a strategic business plan, including an eCommerce model.
 •  Critically evaluate eCommerce business performance.
 •  Assess the social consequences of the transition from local to global business practices and the responsibilities entailed for all stakeholders.

Content
 •  Transition to the eCommerce environment: a conceptual model.
 •  Financial aspects of eCommerce transitions and measuring performance.
 •  Strategic planning to leverage eMarketing, CRM and eCommerce models.
 •  Strategic management of innovation and change: integrating technology, eMarketing and eCommerce processes.

References
Kanter, S 1999, World Class: Thriving Locally in the Global Economy, Simon & Schuster, USA.
LEB300D Managing the Transition to Global Business

Aims & Objectives

eCommerce is a key element in the globalisation process. Understanding this requires a sound knowledge and appreciation of the theoretical and practical issues in managing organisational transition to new global business practices and environments. The focus will be on helping students understand the nature of the new global marketplace, particularly issues of access and equity. The ideological underpinnings of eCommerce and worldwide markets will be examined in some detail. It also examines the nature, the implications and the consequences of adopting online strategies, activities and eCommerce business performance. After completing this subject students will be able to:

- Describe the technological, economic and political bases of eCommerce.
- Explain the process and importance of strategic thinking in eCommerce.
- Map designs of eCommerce models.
- Prepare a strategic business plan, including an eCommerce model.
- Critically evaluate eCommerce business performance.
- Assess the social consequences of the transition from local to global business practices and the responsibilities entailed for all stakeholders.

Content

- Transition to the eCommerce environment: a conceptual model.
- Financial aspects of eCommerce transitions and measuring performance.
- Strategic planning to leverage eMarketing, CRM and eCommerce models.
- Strategic management of innovation and change: integrating technology, eMarketing and eCommerce processes.

Reading Materials

Kanter, S 1999, World Class: Thriving Locally in the Global Economy, Simon & Schuster, USA.
Davis, SM & Meyer, C 1998, Blur: The Speed of Change in the Connected Economy, Addison-Wesley, Massachusetts.

In addition students will be directed to relevant websites and encouraged to research other online resources.

LEB301 Information Methods and Technical Communication

Aims & Objectives

This subject investigates, in a practical way, changes in the communication needs of professionals in electronically networked technical and eBusiness environments. The impact of global communication tools and information systems on individual, team and organisational communication practices will be emphasised. On completion of the subject students should be able to:

- Understand the what, why, when and how of information.
- Use information technology skills to develop information tools.
- Develop confidence in use of library and data research skills for information collection.
- Develop confidence in critical and creative information use within different global and/or cultural contexts.
- Understand what constitutes quality and timely information and how to achieve it.
- Recognise the strengths, limitations and applications of selected contemporary communication theories, perspectives, strategies and models to ethical and effective professional and business interaction.
- Participate in critical discussion, based on logical argument and reasoning, and using supporting evidence, obtained through the efficient electronic retrieval of information.
- Demonstrate the successful application of a number of research and writing strategies through the building of an electronic portfolio of technical, business and professional letters, documents, submissions, reports and presentations.
- Demonstrate competence in applications of key electronic business communication tools.
- Increase both competence and confidence in oral communication through the active planning of, and participation in, structured interpersonal and small group synchronous and asynchronous communication activities.
- Explain the growing importance of effective intercultural communication in the context of the complexity and globalisation of markets in a borderless virtual world and the challenge of adopting non discriminatory and inclusive communication strategies.

Content

- New communication paradigms: theories, perspectives, strategies, models, ethics.
- Research, communication and writing strategies in a networked world.
- Applications of key electronic business communication tools.
- Developing appropriate online business communication skills and strategies.

References


Swinburne University of Technology | Undergraduate Course Handbook 2004


In addition students will be directed to relevant websites and encouraged to research other online resources.
LEB302 Business Information Systems and Technology for Managers

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale; Prahran
• Prerequisite: Completion of at least fourteen first- and second-year subjects • Teaching methods: This subject may be studied using different combinations of learning resources and activities to form a flexible learning approach for each student. Students may choose a combination that suits their location, timing, commitments and style of learning. There will be an emphasis on workshop/laboratory sessions with access to computer facilities. • Assessment: Short Individual Presentations or Demonstrations, Syndicate Report on Technological Innovations and Issues, Syndicate eBusiness Application, Design or Implementation Plan, Examination.

A subject in the Bachelor of Business (eCommerce).

Aims & Objectives
This subject aims to provide a practical strategic and operational orientation to the effective management of information resources, new technologies and communication networks. Emphasis is placed on the innovative and cost effective use and application of web based information technology necessary to remain competitive in any eBusiness enterprise.

After completing this subject students will be able to:

• Describe available online technologies and their impact on business.
• Classify system tools and relate these to the architecture model of eBusiness solutions.
• View demonstrations of common system tools and discuss their application.
• Apply basic internet tools and other information technology relevant to eBusiness.
• Understand the principles of managing electronic data and business security.
• Understand the implications of Internet technologies on the workplace and be able to identify the appropriate integration strategies.

Content

• Key eBusiness enabling technologies and infrastructure, systems and architecture, resources, roles and relationships.
• Basic concepts, principles, applications and implementation of business process engineering.
• eBusiness applications, customer support management, market research, electronic payment, support and service, impact on organisations, individuals and society.
• Using IT and multimedia systems: integrated information systems, decision support systems and intelligent support systems, data and knowledge management.
• Managing IT, including cost benefit analysis of alternatives, total costs of ownership, supplier management and technology trend monitoring.

References

In addition students will be directed to relevant websites and encouraged to research other online resources.

LEB303 eCommerce Due Diligence, Negotiations, Deals and Mergers: eCommerce Application Laboratory

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale; Prahran
• Prerequisite: Completion of at least fourteen first- and second-year subjects • Teaching methods: Students will undertake a mixture of Seminars, Syndicate Work, Laboratory Sessions, Demonstrations and Role-Plays in a Simulated Work Environment • Assessment: Individual Insights and Reflection Papers, Syndicate Work-based Application Strategy, Research Paper.

A subject in the Bachelor of Business (eCommerce).

Aims & Objectives
This subject uses a simulated eCommerce work environment to enable students to gain practical ‘real world’ experience in the development of skills relating to due diligence, commercial negotiations, deal structuring, mergers and acquisitions.

On completion of this subject students should have a strong grounding in how to:

• Choose between building applications in-house or outsourcing, partnering, acquiring technology or content.
• Make decisions relating to selection of partners, suppliers, affiliates.
• Conduct due diligence on various options, preparing a framework of evaluation.
• Develop risk management/mitigation strategies.
• Undertake commercial negotiations and structure deals.

Content

• Decision making: in-house or outsource options.
• Selection: partners, vendors, affiliates.
• Due diligence: relevance and process.
• Commercial negotiations and deal structuring.
• Mergers and acquisitions.

References
Cohan, PS 2000, eProfit: Highpayoff Strategies for Capturing the E-Commerce Edge, American Management Association, Broadway, N.Y.
Hanson, W 2000, Principles of Internet Marketing, South-Western College Publishing, Cincinnati, Ohio.
Tierman, B 2000, E-tailing: Dearborn Kaplan, Chicago.
In addition students will be directed to relevant websites and encouraged to research other online resources.

**LEB304 Entrepreneurship and Innovation for Competitive Advantage: eCommerce Design Laboratory**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilypad: Prahran
- Prerequisite: Completed first and second year • Teaching methods: Students will undertake a mixture of formal seminars, discussions, laboratory sessions, demonstrations, and other practical work in a simulated work environment. The majority of the teaching/learning will be carried out in laboratory mode in an electronic commerce laboratory/workshop. Students will be required to participate regularly for extended periods of time in both structured and unstructured syndicate sessions in these laboratories, and to carry out a variety of activities within these sessions. These activities may include: * Viewing and participating in demonstrations. * Participating in syndicate-based discussions of learning materials. * Undertaking research activities in relation to innovation. * Explore the concept of entrepreneurship, including making cross-cultural comparisons. * Presenting start-up business proposals in class and obtaining feedback. * Carrying out private study and other self-directed learning and research activities. Selective formal seminars with industry guest presenters will provide some additional advanced or specialised material to complement that presented in previously taught subjects. * Assessment: Individual insights and reflection papers, Individual research report on entrepreneurship or innovation, Syndicate work-based eCommerce start-up strategy.

A subject in the Bachelor of Business (eCommerce).

**Aims & Objectives**

This subject is one in a suite of three laboratory-based subjects that aim to build upon the students' prior knowledge and experience to give them a ‘hands-on’ opportunity to apply a range of techniques, tools and processes essential to the current practice of eCommerce. In this subject a simulated work environment will be used to enable students to gain practical ‘real world’ experience in innovation and entrepreneurial activity for competitive advantage.

On completion of this subject students should be able to:
- Map the concept of competitive advantage and relate it to eCommerce innovation.
- Identify the basic characteristics, capabilities and limitations of various computer hardware and software in relation to eCommerce models with potential for entrepreneurial activity for competitive advantage.
- Work creatively in an eCommerce working environment.
- Distinguish between innovation and entrepreneurship.
- Creatively apply the tools and techniques learnt in the other subjects to successfully develop, prepare and implement an entrepreneurial eCommerce project.

**Content**

- Entrepreneurship and competitive advantage.
- Familiarity with eCommerce work environments and industries.
- Practical experience generating and evaluating innovative proposals.
- Practice in the use of eCommerce tools for the development or assessment of new products or services.

**References**

Cohan, PS 2000, eProfit: Highpayoff Strategies for Capturing the E-Commerce Edge, American Management Association, Broadway, N.Y.
Hansen, W 2000, Principles of Internet Marketing, South-Western College Publishing, Cincinnati, Ohio.

**LEB305 Managing Strategic Cost and Performance: eCommerce Analysis and Measurement Laboratory**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilypad: Prahran
- Prerequisite: Completed first and second year • Teaching methods: Students will undertake a mixture of Formal Seminars, Discussions, Laboratory Sessions, Demonstrations, and other Practical Work in a Simulated Work Environment • Assessment: Short Papers; Individual Insights and Reflection Papers, Individual Research Paper on Strategic Cost Management or Performance Measurement, Syndicate Work-based Application or Implementation Strategy

A subject in the Bachelor of Business (eCommerce).

**Aims & Objectives**

This subject is one of a suite of three laboratory-based subjects that aim to build upon the students’ prior knowledge and experience to give them a ‘hands-on’ opportunity to apply a range of eBusiness techniques, tools, processes, strategies and products. In a simulated eBusiness work environment students will gain practical ‘real world’ experience in building a balanced business scorecard, cost and activity analysis and development of key performance indicators, commencing business, stock market performance, business planning and decision-making.

On completion of this subject students should be able to:
- Understand the financial nature of business in relation to operating, generating wealth and stock market performance.
- Explain the importance of profitability and cash flow management.
- Map a balanced business scorecard for a small business.
- Identify the basic characteristics, capabilities and limitations of various computer hardware and software that may be used to facilitate strategic cost management.
- Undertake analysis and measurement design activities in relation to hypothetical but realistic eCommerce business models.
- Explain the potential benefits of effective strategic cost and performance management.
- Design a simple strategic cost system to focus attention and improve performance in an eCommerce process or business.

**Content**

- Commencing business.
- Balanced business strategic planning: building a balanced scorecard.
- Activity-based costing, budgeting and activity-based management.
- Profit planning and short-run decisions.
- Lifecycle costing and cash flow management.
- Asset allocation.
- Strategic supply chain and value chain analysis.

**References**

Cohan, PS 2000, eProfit: Highpayoff Strategies for Capturing the E-Commerce
LEB306 eCommerce Product Development and Management

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per week or 2 Hours per Week for LEB306D • Lilydale; Prahran • Prerequisite: LEB300 or Equivalent

Aims & Objectives

This subject recognises that many eCommerce ventures result in product development and that ongoing product management is a key driver of business success.

After completing this subject students will be able to:
- Describe the process of product development arising from eCommerce.
- Outline and apply the principles of marketing to a product.
- Distinguish between product development and product marketing.
- Explore the key areas of target market segmentation, market analysis, commercial release of eProducts, usability testing and evaluation, branding, pricing strategy and tactics, market planning and control, proposal presentation, product management methodologies and best practice.

Content

- Nature of eProduct development and project management.
- Principles of eMarketing.
- Ongoing product management.
- Customer relationship management.

References


LHO400 Honours Research Methods

25 Credit Points • 12 Weeks or equivalent • 7 Hours per Week • Lilydale; Prahran
Prerequisite: Nil • Teaching methods: Combination of Workshops, Seminars, Presentations • Assessment: Class Presentations, Essays, Examinations

In addition students will be directed to relevant websites and encouraged to research other online resources.

References

Davis, SM & Meyer, C 1998, Blur: The Speed of Change in the Connected Economy, Addison-Wesley, Massachusetts.
Wilson, M 1996, Getting the Most from Consultants, Pitman, Melbourne.

In addition students will be directed to relevant websites and encouraged to research other online resources.
Aims & Objectives

This subject has two parts. Research approaches will enable students to identify and employ the research approaches most suited to their own research project while at the same time understanding the potential for the application of other research methodologies and approaches. The subject also investigates how social theory informs the research process. It aims to improve critical thinking and evaluation skills. More specifically, it is concerned with how ethical theories can improve our understanding of moral and ethical dilemmas entailed in the research process and our everyday lives.

Content

The student will be introduced to a range of theoretical frameworks and research methodologies and will be assisted to identify and use the most appropriate theoretical and methodological approaches for their minor thesis/project. Topics include:

- Research defined – business, information technology and social science.
- Introduction to discipline-specific literature (historical, current and development).
- Qualitative and quantitative research approaches.
- Different research methodologies and methods, for example: critical review of existing resources.
- Criteria and strategies to transform data into evidence.
- Communicating findings.
- Normative ethical theories.
- Contemporary ethical decision-making models.

References

Cooper, D & Schindler, P 1998, Business Research Methods, 6th edn, McGraw Hill, USA.
Neuman, WL 1997, Social Research Methods: Qualitative and Quantitative Approaches, 3rd edn, Allen and Bacon, USA.

LHO401 Honours Research Practice

25 Credit Points • 12 Weeks or equivalent • 7 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: Combination of Workshops, Seminars, Presentations • Assessment: Literature Review, Research Proposal, Defence of Research Methodology

A subject in the Bachelor of Applied Science (Hons), Bachelor of Business (Hons) and Bachelor of Social Science (Hons).

Aims & Objectives

This subject will enable students to practice design, management and creative application of a research project, as well as improving skills in critical thinking, conceptualisation, collaborative problem-solving, planning, presentation and reporting of the research process.

Content

The subject will assist the student in focusing on production of their discipline-specific thesis proposal or project design. In addition, it will provide the students with the skills to locate and critically review relevant literature and other source materials.

Topics include:

- Introduction: establishing a learning community, team work and task allocation.
- Overview of development of research proposal, work program.
- Seminar on development of an in-depth and comprehensive literature review for the specific research project.
- Identification and discussion of appropriate conceptual frameworks for discipline-focused minor thesis/project.
- Identification and discussion of suitable research methods for discipline-focused minor thesis/project.
- Legal and ethical considerations: methodological issues, ownership and control of findings and products etc.
- Effective data presentation and research findings.
- Supervision roles and responsibilities, editing and re-drafting.
- Proposal presentation.
- Thesis development workshop and final discussions.

References

Cooper, D & Schindler, P 1998, Business Research Methods, 6th edn, McGraw Hill, USA.

Additional references will be determined by the academic supervisor and the student, depending on the topic chosen for the minor thesis/research project. Students will be encouraged to utilise relevant Web resources.

LHO402A Research Project (Applied Science)

50 Credit Points • 12 Weeks or equivalent • 14 Hours per Week (equivalent) • Lilydale • Prerequisite: LHO400 and LHO401 • Teaching methods: Students will meet with their academic supervisor on a regular basis and will be required to present progress reports at Honours seminars. Every student will have a principal supervisor and a second supervisor. Where appropriate, students will keep individual journals. These may include lead questions, process decisions, issues arising and team work related aspects. The final submission must indicate the individual student’s work, and in the case of team work, clearly acknowledge the work of others. • Assessment: Project Report, Thesis

A subject in the Bachelor of Applied Science (Hons).

Aims & Objectives

The aim of the subject is for students to complete a workplace-based project with relevant outcomes.

Content

The Research Project will be developed by the student, their academic supervisor and, where appropriate, the responsible workplace supervisor. A project report and workplace-based product (e.g. software, film, performance) should be the equivalent to producing a 10,000–15,000 word traditional academic thesis. The minor thesis/project report will be consistent with the expectations of quality consistent with this kind of work. Although the workplace-based approach to Honours research may involve an increased workload, students are still expected to reach a high level of academic competence and disciplinary rigour.

The project report will include:

- The research problem.
- How the research problem was addressed, strategic decisions.
- Task allocation, team issues.
- Theoretical frameworks employed.
- Methodological approaches applied.
- A current literature review.
- Clear conclusions and, if necessary, appropriate recommendations.
- In the case of a team-based approach, documentation that clearly delineates each team member’s contribution.
LHO402B Research Project (Business)

50 Credit Points • 12 Weeks or equivalent • 14 Hours per Week (equivalent) • Lilydale • Prerequisite: LHO400 and LHO401 • Teaching methods: Students will meet with their academic supervisor on a regular basis and will be required to present progress reports at Honours seminars. Every student will have a principal supervisor and a second supervisor. Where appropriate, students will keep individual journals. These may include lead questions, process decisions, issues arising and team work-related aspects. The final submission must indicate the individual student’s work, and in the case of team work, clearly acknowledge the work of others. • Assessment: Project Report, Thesis

A subject in the Bachelor of Business (Hons).

Aims & Objectives

The aim of the subject is for students to complete a workplace-based project with relevant outcomes.

Content

The Research Project will be developed by the student, their academic supervisor and, where appropriate, the responsible workplace supervisor. A project report and workplace-based product (e.g. software, film, performance) should be the equivalent to producing a 10,000–15,000 word traditional academic thesis. The minor thesis/project report will be consistent with the expectations of quality consistent with this kind of work. Although the workplace-based approach to Honours research may involve an increased workload, students are still expected to reach a high level of academic competence and disciplinary rigour.

The project report will include:

- The research problem.
- How the research problem was addressed, strategic decisions.
- Task allocation, team issues.
- Theoretical frameworks employed.
- Methodological approaches applied.
- A current literature review.
- Clear conclusions and, if necessary, appropriate recommendations.
- In the case of a team-based approach, documentation that clearly delineates each team member’s contribution.
- May include a workplace-based product (e.g. software, film, performance).

The final written submission needs to include a coherent explanation of the findings, clear writing and an understanding of the issues inherent in the minor thesis/research project.

References

To be determined by the academic supervisor and the student, depending on the topic chosen for the research project/thesis.

LHO402C Research Project (Social Science)

50 Credit Points • 12 Weeks or equivalent • 14 Hours per Week (equivalent) • Lilydale • Prerequisite: LHO400 and LHO401 • Teaching methods: Students will meet with their academic supervisor on a regular basis and will be required to present progress reports at Honours seminars. Every student will have a principal supervisor and a second supervisor. Where appropriate students will keep individual journals. These may include lead questions, process decisions, issues arising and team work-related aspects. The final submission must indicate the individual student’s work, and in the case of team work, clearly acknowledge the work of others. • Assessment: Project Report, Thesis

A subject in the Bachelor of Social Science (Hons).

Aims & Objectives

The aim of the subject is for students to complete a workplace-based project with relevant outcomes.

Content

The Research Project will be developed by the student, their academic supervisor and, where appropriate, the responsible workplace supervisor. A project report and workplace-based product (e.g. software, film, performance) should be the equivalent to producing a 10,000–15,000 word traditional academic thesis. The minor thesis/project report will be consistent with the expectations of quality consistent with this kind of work. Although the workplace-based approach to Honours research may involve an increased workload, students are still expected to reach a high level of academic competence and disciplinary rigour.

The project report will include:

- The research problem.
- How the research problem was addressed, strategic decisions.
- Task allocation, team issues.
- Theoretical frameworks employed.
- Methodological approaches applied.
- A current literature review.
- Clear conclusions and, if necessary, appropriate recommendations.
- In the case of a team-based approach, documentation that clearly delineates each team member’s contribution.
- May include a workplace-based product (e.g. software, film, performance).

The final written submission needs to include a coherent explanation of the findings, clear writing and an understanding of the issues inherent in the minor thesis/research project.

References

To be determined by the academic supervisor and the student, depending on the topic chosen for the research project/thesis.
LSM100  Texts and Contexts

12.5 Credit Points  •  12 Weeks or equivalent  •  3 Hours per Week  •  Lilydale  •  Prerequisite: Nil  •  Teaching methods: Lectures, Tutorial Laboratories  •  Assessment: Discussion Threads, Essay, Critical Evaluation of Discussion Threads

Aims & Objectives

LSM100 Texts and Contexts provides the basis for e-Culture and Media subjects as well as a starting point for utilising the possibilities for electronic systems deliveries taught in Information Technology and Computing, Information Systems and Interactive Multimedia. It provides a conceptual overview of Western culture and the development of cultural texts, particularly those related to globalisation. It introduces students to research methods such as the application of cultural and critical theory, the gathering of online data and the use of qualitative methodologies. It enables students to analyse and critique systems of authority and apply this to globalisation.

Content

LSM100 Texts and Contexts draws together theory and practice to consider the following topics and issues:

- Textuality and discourse as content.
- Textuality and discourse as cultural practice.
- Identifying and problematising cultural givens.
- The emergent electronic culture, its background and future possibilities.
- The cultural background to globalisation.
- An introduction to critical and cultural theories and their research possibilities and practical approaches.

Core Text

G21: Global Cultural Dreaming

Recommended reading


Barwick, D 1998, Rebellion at Coranderrk, Aboriginal History Inc., Canberra.


Reynolds, H 1998, This Whispering In Our Hearts, Allen & Unwin, St Leonards.


LSM200  eCulture

12.5 Credit Points  •  12 Weeks or equivalent  •  3 Hours per Week  •  Lilydale  •  Prerequisite: LSM100  •  Teaching methods: Weekly Lecture, Virtual Tutorials  •  Assessment: Discussion Threads, Essay, Critical Evaluation of Discussion Threads

Aims & Objectives

LSM200 eCulture enables students to participate in the information society of the new millennium. It gives them skills in practical applications as well as theoretical understandings and criticisms of electronic technologies. It draws together theories about globalisation and popular culture with hands-on understandings and utilisations of relevant computer applications. It builds upon the research skills and theoretical concepts introduced by LSM100 Texts and Contexts to enable critical readings of cultural textuality and discourse. Topics to be addressed include: drawing together readings and writing; further identifying and problematising cultural givens; understanding and applying these to specific IT, mass media and cultural case studies.

Content

LSM200 eCulture draws together theory and practice to consider the following topics and issues:

- Establishing criteria for analysing websites for effective communication.
- Utilising websites and CD ROM for e-learning.
- Enhanced use of PowerPoint and Word.
- Introduction to pre-production skills and concept development for product delivery.
- Understanding and application of critical and cultural theories.
- Insights into the role of electronic culture as the new popular culture.
- The role of globalisation in the formation of cultural textuality and discourse.
- Insights into the relationship between the virtual and the real.

Core Text

G21: Global Cultural Dreaming

Recommended reading

LSM201 Writing for the Media website with hypertext links to recommended online readings. www.id.swin.edu.au/subjects/lsm201/welcome.htm These links are updated on a regular basis to ensure that students have access to the most current thinking and information.


LSM201 Writing for the Media

12.5 Credit Points  •  12 Weeks or equivalent  •  3 Hours per Week  •  Lilydale  •  Prerequisite: Nil  •  Teaching methods: Weekly Lecture, Weekly Computer Laboratory Session  •  Assessment: Writing for Mass Media Stream: Completion of Workbook and Reconciliation Contribution. Writing for Multimedia Stream: Concept Proposal, Web-based Publication, PowerPoint Presentation

A Stage 2 subject in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives

LSM201 Writing for the Media brings together the theory and practice of creating content for media publications, ranging from in-house newsletters, mass media to business websites. Students can choose to either complete a stream focusing on journalism skills for the print media, or complete a stream focusing on content provision for e-media (e.g. online newsletters, websites, intranets and PowerPoint presentations). Students will pay particular attention to how different mediums create different forms of discourse.

Content

LSM201 Writing for the Media draws together theory and practice to consider the following topics and issues:

- Enhanced skills in applications such as PowerPoint, Dreamweaver, Word.
- Newsletter design and editing skills.
- Digital graphic editing skills.
- Writing news.
- Website design, construction and content creation.
- Producing in-house Web-based publications.
- Understanding media construction of knowledge.
- Analysis and critique of media content and processes.
- Applying critical and cultural theories to news and information systems, particularly e-media.

Core Text

G21: Global Cultural Dreaming

Recommended reading

LSM201 Writing for the Media website with hypertext links to recommended online readings www.id.swin.edu.au/subjects/lsm201/welcome.htm . These links are updated on a regular basis to ensure that students have access to the most
current thinking and information.

LSM203 New Media

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale •
Prerequisite: LSM100 • Teaching methods: Weekly Lecture, Virtual Tutorial •
Assessment: Discussion Threads, Critical Evaluation of Discussion Threads, Development of HyperText Information Resource

Aims & Objectives
LSM203 New Media explores the impact of convergent technologies on the formation of a national and global network economy. It examines the interface, mergers and alliances between information technology [process], telecommunications [carriage] and media [content] sector and their implications for the development of new communications practices. In particular, it examines the impact of the changes on e-business, e-education and corporate information processes.

Content
LSM203 New Media draws together theory and practice to consider the following topics:

- The implications and applications of convergent technologies to information creation.
- The implications of convergent technologies for information management and corporate e-memory.
- The impact of global communications technologies on local information.
- The role of convergent communications technologies on globalisation.
- The role of global media and information players in determining integration of work, leisure and e-commerce.
- The roles of Telcos, government policy and regulatory bodies in determining information environments.
- Cultural and critical frameworks for developing an understanding of changing nature of Australian and global network economies.

Core Text
G21: Global Cultural Dreaming

Recommended reading
LSM203 New Media website with hypertext links to recommended online readings. www.ld.swin.edu.au/subjects/lsm203/welcome.htm These links are updated on a regular basis to ensure that students have access to the most current thinking and information.


LSM204 Cinema Studies

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale •
Prerequisite: LSM100 • Teaching methods: Weekly Lecture, Virtual Tutorial •
Assessment: Weekly Film Reviews, Essay

Aims & Objectives
LSM204 Cinema Studies provides students with a flexible subject, able to be updated through commercial Hollywood film releases. It brings together dominant features of popular culture with critical and cultural insights provided by theory. It enables students to read against the given text and to understand the impact of genre upon the production of cultural beliefs and practices. Students will develop the ability to critically evaluate the filmic antecedents of online visual and audio-textual elements. This process will enhance students’ research capacities and their ability to develop critical criteria by which to approach, understand and evaluate aspects of new communications technologies arising from cinema, which have in turn altered cinema production, textuality and discourse in the emergent electronic culture.

Content
LSM204 Cinema Studies draws together theory and practice to consider the following topics and issues:

- Writing critical evaluations.
- The cultural, financial and industrial basis of film industry.
- Applying critical and cultural frameworks to film.
- The complementary aspects of film production from pre-production to cinema release.
- Reviewing and reporting on filmic information.
- Utilising film for advertising and electronic purposes.
- Developing criteria for effective use of sound, image and special effects.
- Skills in applied textual analysis.
- Understanding and applying critical and cultural theories for an understanding of the mediated experience, particularly the Hollywood Dream Factory and its applications to globalisation.
- The role of film as a cultural text and artefact.
- The historical and cultural influences in the formation of the Australian film industry as a model for cultural research.
- The relationship between electronic special effects and the construction of virtual cultural realities.

Core Text
G21: Global Cultural Dreaming

Recommended reading
LSM204 Cinema Studies website with hypertext links to recommended online readings. www.ld.swin.edu.au/subjects/lsm204/welcome.htm These links are updated on a regular basis to ensure that students have access to the most current thinking and information.


LSM301 Electronic Writing

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale •
Prerequisite: LSM100 and LSM201 • Teaching methods: Weekly Lecture, Computer Laboratory Sessions • Assessment: Concept Development for Multimedia Project, Storyboard, Negotiated Multimedia Project

Aims & Objectives
LSM301 Electronic Writing builds on the skills and in sights developed in LSM201 Writing for the Media. Students will enhance their learning and use of applications such as PowerPoint, Flash and Dreamweaver to develop advanced multimedia products for the Web and CD-ROM. The subject also examines the use of different communications technologies such as NetMeeting as an environment for delivering multimedia product and how they can contribute to the archiving of organisational knowledge. Development of multimedia products, from concept proposal, storyboarding and project management will also be addressed.

Content
LSM301 Electronic Writing draws together theory and practice to consider the following topics and issues:

- Enhanced skills in using applications such as PowerPoint, Flash and Dreamweaver.
- Developing project proposals and storyboards.
- Production of in-house online publications, presentations and websites.
- Developing integrated print and electronic environments.
- Project management skills from conception to completion.
- The process of culture change from print to electronic media.
- Understanding and applying critical and cultural theories to multimedia and other hypertexts.
- The construction of new cultural meaning through multimedia.
- The role of commercial applications such as PowerPoint, Flash and Dreamweaver in the construction of a global culture.
- The implications of the use of multimedia for organisational information strategies.
Core Text

G21: Global Cultural Dreaming

Recommended reading

LSM301 Electronic Writing website with hypertext links to recommended online readings www.id.swin.edu.au/subjects/lsm301/welcome.htm. These links are updated on a regular basis to ensure that students have access to the most current thinking and information. Hoffman, D 1998, Visual Intelligence: How We Create What We See, W.W. Norton, New York.


LSM302 Information Society

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSM100 (For Management major in L055: LTE200, LTE201 and LTE202)

• Teaching methods: Weekly Lecture, Virtual Tutorial • Assessment: Discussion Threads, Essay, Critical Evaluation of Discussion Threads

A Stage 3 subject in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives

LSM302 Information Society builds on the insights and understandings of the impacts and implications of convergent technologies in the formation of a global networked economy. It examines Australia’s record as a player in a global communications environment and compares it with the experience of other nations such as Great Britain, the United States, Singapore and France. It examines the impact of global communications technologies on the development of new business opportunities and the implications of e-commerce for local production. Students will also investigate the implications of globalisation for new world information orders, in particular the implications of growing digital divide for the economic development of Third World nations.

Content

LSM302 Information Society draws together theory and practice to consider the following topics and issues:

• Globalisation as a force for change in business practices.
• The growing role of e-commerce in business and government practices.
• Government policies and regulatory practices of the global networked economy.
• The role of global economic and information agendas in the formation of the networked economy.
• The implications of the gap between information rich and information poor.
• Applying critical and cultural theories to an understanding of the ideological basis of the formation of a new world order based on information and communications technologies.
• Researching and identifying information agendas and needs.
• The role of transnational interests in the formation of new business practices.

Core Text

G21: Global Cultural Dreaming

Recommended reading

LSM302 Information Society subject website which provides links to regularly updated relevant readings and Web-based resources. www.id.swin.edu.au/subjects/lsm302/welcome.htm


Garnham, N 2000, Emancipation, the Media and Modernity: Arguments about the Media and Social Theory, Oxford University Press, London.

LSM304 Cyberscreen Studies

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSM100 • Teaching methods: Weekly Lecture, Virtual Tutorial • Assessment: Discussion Threads, Negotiated IMM Project and/or Critique of IMM

A Stage 3 subject in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives

This subject examines the ways in which multimedia has been built up. It begins by looking at the relationship between film, television and computer screens. It investigates the ways in which visual choreography and acuity developed through art, photography, cinema and television has a place when we think about working on/for the very smallest screen. It builds an understanding of how written text is becoming a smaller part of how we think about colonising cyberspace. This subject presents students with an opportunity to develop new ways of thinking about textuality, taking into account the modes of criticism developed through the contributory elements of multimedia. It introduces students to developing preproduction multimedia skills.

Content

LSM304 Cyberscreen Studies draws together theory and practice to consider the following topics:

• Understanding computer textuality and discourse.
• Visual online choreography.
• Creation and manipulation of images.
• Critiquing cyber-narrativity.
• Understanding and utilising cyber-narrativity and characterisation.
• Bringing critical theory to online product development.
• Developing critical criteria for electronic texts.
• Understanding and critiquing genre and the binary opposites of fact and fiction.

Core Text

G21: Global Cultural Dreaming

Recommended reading

LSM304 Cyberscreen Studies website with hypertext links to recommended online readings www.id.swin.edu.au/subjects/lsm304/welcome.htm. These links are updated on a regular basis to ensure that students have access to current thinking and information. Hawthorne, S & Klein, R (eds) 1999, Cyberfeminism: Connectivity, Critique and Creativity, Spinifex Press, North Melbourne.


LSQ200 Design and Measurement 2

12.5 Credit Points • 12 Weeks or equivalent • 3.5 Hours per Week • Lilydale • Prerequisite: LCR100 • Assessment: Assignments, Examinations, Tests

A Stage 2 subject in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives

In this subject, the emphasis is on understanding the methodology of basic research design and how the associated statistical analysis can provide answers to research questions. Students also receive instruction in the use of Statistical Package for the Social Sciences (SPSS). This computer package will be used to analyse data both in this course and in second and third stage courses in psychology.

Content

Topics to be studied include an introduction to computer-based analysis, one- and two-way factorial design and corresponding analysis of variance, and mixed design analysis of variance.

References


Francis, G 2000, Analysis of Variance, SUT, Melbourne.

Francis, G 2000, Analysis of Variance, SUT, Melbourne.

Francis, G 2000, Analysis of Variance, SUT, Melbourne.

Francis, G 2000, Analysis of Variance, SUT, Melbourne.

Francis, G 2000, Analysis of Variance, SUT, Melbourne.

Francis, G 2000, Analysis of Variance, SUT, Melbourne.

Francis, G 2000, Analysis of Variance, SUT, Melbourne.

Francis, G 2000, Analysis of Variance, SUT, Melbourne.

Francis, G 2000, Analysis of Variance, SUT, Melbourne.

Francis, G 2000, Analysis of Variance, SUT, Melbourne.

Francis, G 2000, Analysis of Variance, SUT, Melbourne.

References


Francis, G 2000, Analysis of Variance, SUT, Melbourne.

LSQ201 Survey Research Methods

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LCR100 (plus LSM100 and LSM200 recommended for Marketing major) • Assessment: Assignments, Class Presentations, Examinations

A Stage 2 subject 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
This subject introduces the theory and practice of survey research.

Content
- Introduction to survey research: survey versus census.
- Sampling techniques.
- Collecting data.
- Data analysis.
- Presentation of findings: report writing and oral presentation.

References

LSQ202 Qualitative Research
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale •
Prerequisite: LCR100 • Assessment: Assignments, Class Presentations,
Examinations
A Stage 2 subject in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This subject aims to develop an understanding of qualitative research methodology and methods, including an introduction to the history of qualitative research, grounded theory, data collection, theoretical sensitivity, coding, ethical issues, and presentation of results.

Content
- Introduction to qualitative research: rationale, historical background.
- Nature of qualitative data.
- Approaches: interpretation, social anthropology, collaborative social research, content analysis, action research.
- Grounded theory.
- Data collection: conceptualising, formulating questions, bounding.
- Theoretical sensitivity.
- Coding: open, axial, selective.
- Ethical issues.
- Presenting results.

References
Rice, P & Etty, D 1999, Qualitative Research Methods, Oxford University Press.

LSQ300 Design and Measurement 3
12.5 Credit Points • 12 Weeks or equivalent • 3.5 Hours per Week • Lilydale •
Prerequisite: LSQ200 • Assessment: Assignments, Computer-Based Tests, Examinations
A Stage 3 subject in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This subject aims to extend the range of statistical analysis techniques with which students are proficient, as well as further developing report writing ability.

Content
In this subject, the topics included in LSQ200 are extended and further topics in design and analysis are considered. The SPSS package will be used to perform the various statistical analyses. Topics to be studied include multiple regression, multivariate analysis of variance and factor analysis.

References
Francis, G 2000, Multiple Regression, SUT, Melbourne.
Francis, G 2000, Manova and Factor Analysis, SUT, Melbourne.

LSQ301 Research Project
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale •
Prerequisite: Any two of LSQ200, LSQ201, LSQ202, LSQ203 • Assessment: Class Presentations, Project Report
A Stage 3 subject 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.

Content
- 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 the conclusions.

References

LSS100 Introduction to Sociology
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale •
Prerequisite: Nil • Assessment: Essays, Examinations, Tutorials
A Stage 1 subject in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The subject is an introduction to sociology and to some of the critical issues in understanding social life. It considers a number of important sociological concepts, such as culture, identity and socialisation. It provides an overview of major theoretical approaches in explaining society and the place of the individual within it. This subject also examines key methodological issues in the study of both the structures of society and the behaviour of individuals and groups.
In addition, the subject explores the three dimensions of social inequality: class, gender and ethnicity. It examines a number of social institutions, such as the family, education, work and religion.
The subject also offers an introduction to current debates about the nature/nurture dichotomies, as well as postmodernism, a contentious alternative paradigm in sociological inquiry.

Content
- Theories and Practice: Sociological Perspectives and Research Methods.
- Culture and Identity.
- Difference, Deviance and Control.
- Dimensions of Inequality: Class, Gender and Ethnicity/Race.

Recommended reading
van Krieken, R et al. 2000, Sociology: Themes and Perspectives, 2nd edn, Pearson Education, NSW.
Willis, E 1999, The Sociological Quest, 3rd edn, Allen and Unwin, NSW.
LSS201  Sociological Perspectives

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSS100 or equivalent • Assessment: Class Presentations, Essays, Examinations, Participation

A Stage 2 subject 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 which inform sociological explanation. This subject will assist students to consolidate and extend their knowledge of sociological theory. In addition, it will enable students to explore ways in which a variety of sociological perspectives may be used to address practical issues such as formulating social policy and conducting sociological research. Class discussions aim to encourage students to identify links between theoretical debates and current social issues.

Content
• The role of the Enlightenment and the Counter-Enlightenment in the development of nineteenth-century sociological thought.
• The contributions of classical sociological theorists Marx, Durkheim and Weber.
• Development of sociological perspectives in the twentieth century, including interpretivist theories, feminism and postmodernism.
• Analysis of perspectives, including their core assumptions, ideological foundations, and approaches to knowledge and explanation.

Recommended reading

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 or equivalent • Assessment: Class Presentations, Debate, Essays, Tutorials

A Stage 2 subject in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The subject explores how ethnic, racial, social and cultural factors have shaped, and continue to shape, the social, economic, and political development of Australian society since 1788. It examines in some detail how immigration policies and patterns, as well as settlement practices, have contributed to the creation and maintenance of Australia as a nation. The subject also provides an understanding of new patterns and influences in relation to Australia's experience in contemporary global migration movements and the concomitant need to develop skills for managing an increasingly diverse workforce and population.

Content
• Historical and Contemporary Immigration Patterns in Australia.
• Comparative Analysis of Settlement Practices: Australia, Germany and the USA.
• Theories of Migration.
• Perspectives on Ethnicity and Ethnic Relations.
• International Migration in a Postmodern World.
• Citizenship, National Identity and Human Rights.

Recommended reading
Bennett, S 1999, White Politics and Black Australians, Allen and Unwin, NSW.

LSS300  Organisations and Society

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSS 100 or equivalent, and two second year units • Assessment: Class Presentations, Debate, Essays, Tutorials

A Stage 3 subject in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The subject provides explanations for the emergence, growth and persistence of vast and extensive, multi-divisional, corporately owned and bureaucratically managed global enterprises. It employs sociological theoretical frameworks to explain various aspects of organisations, such as structural arrangements, organisational culture, formal and informal power, gender patterns, managerialism and the impact of international migration. This sociologically informed analysis will be applied to public and private sector organisations as well as to not-for-profit enterprises, i.e. third sector organisations. The subject also considers forms of organisational restructuring, addresses the resurgence of small businesses, and provides an analysis of Australian organisational approaches and patterns, as compared to those of other societies.

Content
• Historical Development of Large-Scale Organisations.
• Bureaucracy, Rationalism and Democracy.
• Comparison of Public-, Private- and Third-Sector Organisations.
• Sociological Perspectives on Institutions.
• Sociological Theories and Managerialism.
• Modern and Postmodern Organisations.
• Gender and Organisational Power.

**Recommended reading**
- Hall, R 1999, Organizations: Structures, Processes and Outcomes, 7th edn, Prentice Hall, USA.
- Cleveland, J, Stockdale, M & Murphy, K 2000, Women and Men in Organizations, Lawrence Erlbaum, USA.

**LSS302 Research Approaches**
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSS301 or equivalent and two second year units • Assessment: Assignments, Tests, Tutorials
A Stage 3 subject in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**
The subject provides an understanding of underlying ideological assumptions and the relationship between sociological theories and a range of social research practices. It offers practical experience and skill acquisition in social research through the use of different methods and designs. Each student will undertake a small but substantial piece of independent research under staff supervision.

**Content**
- Theoretical Assumptions of Quantitative and Qualitative Research Methodologies.
- Research Design.
- Measurement.
- Principles of Sampling.
- Data Gathering Approaches.
- Data Analysis, Interpretation and Presentation.
- Research Ethics.
- Report Writing.

**Recommended reading**
- Blakey, N 2000, Designing Social Research, Allen and Unwin, NSW.
- De Vaus, D 1985, Surveys in Social Research, 3rd edn., University College London, UK.

**LSS303 Sociology and Social Policy**
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSY100 and two second year sociology subjects • Assessment: Class Exercises, Essays, Tutorials
A Stage 3 subject in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**
The subject 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 health policy in a number of key areas such as Indigenous health, mental illness and ageing. Other substantive fields of interest are environmental sustainability, population issues and ethics.

**Recommended reading**
- Hancook, L 1999, Health Policy in the Market State, Allen and Unwin, NSW.

**LSY100 Psychology 100**
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Nil • Corequisites: LSY100 • Teaching methods: Lectures, Tutorials, Drop-ins, Online Materials • Assessment: Examinations, Class Participation, Research Reports, Critical Review
A Stage 1 subject in the Bachelor of Social Science which may also be taken in any other degree at Swinburne Lilydale.

**Aims & Objectives**
This subject is the first of two Stage 1 subjects and is designed to introduce students to the content and method of psychology.

**Content**
Topics introduced in LSY100 include psychology as a science, ethics in research, biological foundations of behaviour, sensation, perception, consciousness, memory, language, learning and intelligence, experimental design and analysis.

**References**

**LSY101 Psychology 101**
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSY100 and LOR100 • Teaching methods: Lectures, Tutorials, Drop-ins, Online Materials • Assessment: Essay, Examinations, Class Participation, Research Reports
A Stage 1 subject in the Bachelor of Social Science which may also be taken in any other degree at Swinburne, Lilydale.

**Aims & Objectives**
This subject is the second of two Stage 1 subjects designed to introduce students to the content and method of psychology.

**Content**
This subject concentrates on aspects of psychology not covered in LSY100. These include motivation, emotion, personality, sexuality, stress and coping, and psychopathology. Students are also introduced to social and developmental psychology. The design and analysis of experimental studies form a major part of the teaching program.

**References**

**LSY200 Cognition and Human Performance**
12.5 Credit Points • 12 Weeks or equivalent • 3.5 Hours per Week • Lilydale • Prerequisite: LSY100, LOR100, LSY101, JS0200 • Teaching methods: Lectures, Practical Sessions, Online Project Work, Drop-ins • Assessment: Examinations, Class Participation, Research Reports
A Stage 2 subject in the Bachelor of Social Science which may also be taken in any other degree at Swinburne Lilydale.

**Aims & Objectives**
This subject is a Stage 2 subject in Psychology and is designed to provide students with an overview of theoretical, methodological and empirical aspects of cognitive psychology.

**Content**
This subject examines in detail the theories, methods and empirical evidence in areas such as perception, attention, memory, language, problem-solving and decision-making. It also considers some contemporary issues and applications of cognitive science and neuropsychology. Students will also be able to expand their knowledge in experimental design and analysis.

**References**
LSY201 Developmental Psychology

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LSY100, LSY101 and LCR100 • Corequisites: LSQ200 • Teaching methods: Lectures, Practical Sessions, Project Work, Drop-ins • Assessment: Examinations, Literature Review, Research Reports, Class Participation
A Stage 2 subject in the Bachelor of Social Science which may also be taken in any other degree at Swinburne Lilydale.

Aims & Objectives
- To understand the processes of human growth and change from infancy and childhood through to adolescence.
- To examine the biological, psychological and environmental factors involved in growth and change.

Content
Topics may include: theory and method in developmental psychology, prenatal and perinatal factors in development, perceptual development, physical development, children’s play, attachment, cognitive development, language development, moral development, emotional development, gender differences, social development, identity and self-awareness, socialisation within the family, socialisation outside the family. The focus of the subject is on theoretical approaches to child development, with a thematic rather than a chronological approach.

Textbook

LSY300 The Psychology of Personality

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LSQ200, LSG200 and one of LSY200, or LSY201 • Teaching methods: Lectures, Tutorials, Drop-ins • Assessment: Examinations, Research Reports, Class Participation, Critical Review
A Stage 3 subject in the Bachelor of Social Science which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
This subject focuses on the theory and practice of understanding and the individual as a whole person. Theory and research from other fields of psychology such as development, social interaction, learning, motivation, cognition, and emotion are considered specifically from the viewpoint of integrating such contributions to increase our understanding of ourselves and others as persons.

Content
A number of major perspectives on personality are examined: psychoanalytic, cognitive, dispositional/trait, cognitive/social cognitive, phenomenological and narrative. Issues such as methods of personality assessment, development, processes, structures, relationships and research strategies are 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
Carver, CS & Scheier, M 2000, Perspectives on Personality, 4th edn, Boston, Allen & Bacon.

LSY301 Psychological Measurement

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LSG200 and one of LSY200, or LSY201 • Teaching methods: Lectures, Laboratory Sessions, Tutorials, Drop-ins • Assessment: Examinations, Research Reports, Class Participation, Workbook
A Stage 3 subject in the Bachelor of Social Science which may also be taken in any other course at Swinburne Lllydale.

Aims & Objectives
The aim of this subject is to help students to develop a greater appreciation of the psychological and measurement foundations of tests and other assessment procedures.

Content
In this subject, students will be involved with the practical aspects of psychometrics design, construction, validation and evaluation of assessment techniques. Approximately the first hour of most of the sessions will be devoted to theory and the other two hours to laboratory exercises.

References

LSY304 Abnormal Psychology

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LSG200 and one of LSY200, or LSY201 • Teaching methods: Lectures, Tutorials, Drop-ins • Assessment: Class Presentations, Essays, Examinations
A Stage 3 subject in the Bachelor of Social Science which also may be taken in the Bachelor of Business.

Aims & Objectives
The subject 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.

References

LSY307 Social Psychology

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LSG200 and one of LSY200 or LSY201 • Teaching methods: Teaching Methods include Lectures, Project Work and Tutorials • Assessment: Examinations, Research Report
A Stage 3 subject in the Bachelor of Social Science which may also be taken in any other degree at Swinburne Lilydale.

Aims & Objectives
This subject 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 course 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.

References


**LTE100 Introduction to Management**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale

Prerequisite: Nil • Teaching methods: 1 Hour Lecture per Week, 2 Hour Tutorial per Week • Assessment: Discussion Questions, Professional Report, Experiential Exercises, Exam (Multiple-choice and Short Essays)

A Stage 1 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale.

**Aims & Objectives**
The subject provides a basic introduction to the concepts on management and human resource management with particular emphasis on Australia’s position within the Pacific Rim.

**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.
- Social responsibility and ethics in management.
- Planning and creative decision-making, including developing strategies.
- Organising, leading and managing individuals and groups.
- Communication, including professional report writing.
- Operational management, including managing information systems.
- Managing through change and conflict.
- Managing across international and regional boundaries.

**References**


**LTE200 Organisations and Management**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale

Prerequisite: LTE100 • Assessment: Examinations, Group Work, Individual Work

A Stage 2 subject 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 organisations and the context in which they operate. Students will be introduced to a framework that focuses on management in relation to issues associated with contemporary Australian organisations.

To also enable students to better appreciate the context of work they will manage self and others in an organisational setting where students in small groups simulate a business environment, developing their own structure and strategies, and electing their own leaders and managers. Each group has the responsibility for developing a creative small business venture.

Opportunities are provided to develop an appreciation of the value of independent study, as well as the value of learning to be an effective group member, and building on fundamental academic and research skills such as: use of the library and other information sources; analysis and synthesis; written and verbal communication skills; report and essay writing skills; interviewing and questioning skills.

**Content**
- Organisational strategy and structure.
- Organisational environments and culture.
- Leadership, power and authority.
- Interpersonal communication and group dynamics.
- Managing change.
- Social responsibility and ethics.
- Emerging issues for contemporary organisations.

**References**
Textbook to be advised.

**LTE201 Human Resource Management**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale

Prerequisite: LTE100 • Assessment: Examinations, Group Work, Individual Work

A Stage 2 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale. (Also offered as LTE201B in block mode.)

**Aims & Objectives**
- To provide students with an understanding of the nature and importance of HR as an organisational asset.
- To have a knowledge of the theories, techniques and approaches to dealing with people related problems and issues.

**Textbook**

**Recommended reading**


**LTE202 Organisational Behaviour**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale

Prerequisite: LTE100 • Assessment: Examinations, Group Work, Individual Work

A Stage 2 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale. (Also offered as LTE202B in block mode.)

**Aims & Objectives**
To provide students with a sound knowledge and personal understanding of the impact of human behaviour on work in groups and organisations.
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.

Textbook

Recommended reading

LTE300 Organisational Change and Development
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Any two of LTE200, LTE201, LTE202 • Assessment: Examinations, Individual Assignments

Aims & Objectives
• To develop proactive attitudes and behaviours towards the rapid change and development occurring within national and international businesses and industries.
• To learn how to handle the impact of planned and unplanned technological, economic and social changes within the subsystems of organisations.

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.

Textbook

Recommended reading
Harris, N 1997, Change and the Modern Business, Macmillan Business, UK.

LTE301 Strategic Planning and Project Management
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Any two of LTE200, LTE201, LTE202 • Assessment: Examinations, Group Work, Individual Work

Aims & Objectives
To introduce students to the concepts and practical issues associated with strategic planning and project management within an organisation. A business simulation provides students with feedback on the strategic decisions made in managing a corporation.

Content
• Strategic planning.
• The role of management in the planning process.
• Planning for innovation.
• Project management.
• Project management software.

Recommended reading

LTE302 Leadership and Management
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Any two of LTE200, LTE201, LTE202 • Assessment: Examinations, Individual Assignments

Aims & Objectives
• To develop the professional expertise of managers and leaders.
• To become aware of the role managers and leaders have within the Pacific Rim.

Content
This subject 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. The differing attitudes, goal orientations, motivations, use of influence and relationships of managers and leaders with others are compared and contrasted.

Textbook

LTT100 Introduction to Tourism
12.5 Credit Points • 12 Weeks • 3 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: A mix of Lectures, Tutorials, Experiential Learning Exercises, Group-based Work, Computer-based Learning Activities, Independent Learning Tasks and Peer Mentoring. All learning activities will have a student focus. • Assessment: Assignments, Examination, Group Work, Tests

Aims & Objectives
• To develop 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.
Subject Details

Swinburne University of Technology | Undergraduate Course Handbook 2004

LTT201 Tourist Destination Management

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LTT100 • Assessment: Assignments, Examinations, Tests

A Stage 2 subject in Bachelor of Business (Tourism and Management) which may also be undertaken in any other degree program at Swinburne 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 tourist 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.
• Destination Marketing.
• Tourism and the Community.

Textbook


Recommended reading


LTT202 Tourism Enterprise Development

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LTT100 • Assessment: Assignments, Examinations

A Stage 2 subject in Bachelor of Business (Tourism and Management) which may also be undertaken in any other degree program at Swinburne Llilydale.

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.

Textbook


Recommended reading


LTT203 Tourism Services

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBM100, LBM200, LTT100 • Assessment: Assignments, Examinations

A Stage 2 subject in Bachelor of Business (Tourism and Management) which may also be undertaken in any other degree program at Swinburne 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.

References

No prescribed text.

Extensive electronic reading reserve.

LTT204 Regional Issues in Tourism

12.5 Credit Points • 12 Weeks • 3 Hours per Week • Lilydale • Prerequisite: LTT204 • Teaching methods: Depending on local conditions and constraints, delivery of the subject in Budapest and Singapore may vary. Recognising that in some instances this will involve block delivery, the format of sequential lecture and tutorial will not always be followed. LTT204 Pacific Rim Issues in Tourism delivered at Swinburne, Lilydale will follow established lecture and tutorial format. • Assessment: Individual or Group Research Assignment, Mid-Term Revision Test, Final Examination

A Stage 2 subject in Bachelor of Business (Tourism and Management) which may also be undertaken in any other degree program at Swinburne 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 as the European Union is 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 subject seeks to highlight the particular issues facing two of the world’s most significant and rapidly growing regions, with particular emphasis on the challenges and future directions for tourism.

To that end it is proposed that the subject be offered in two modes as follows:

• European Issues in Tourism (to be offered at College International Budapest, Hungary).
• Pacific Rim Issues in Tourism (to be offered at Swinburne University, Lilydale and in Singapore).
Content
European Issues in Tourism
- History of European Tourism
- Tourism Policy in the EU – Policy & Planning Implications
- Transport & Transport Policy in The EU
- The Emergence of CEE (Central Eastern European) Countries and the Implications for European Tourism
- Social Policy, Employment and Training in European Tourism
- Trends & Directions for European Tourism

Pacific Rim Issues in Tourism
- 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

References
Given the deliberate specifics of the two modes, the following are prescribed references in each instance. These will be supplemented by an extensive range of journal articles addressing contemporary issues in the respective regions

European Issues in Tourism

Pacific Rim Issues in Tourism
Hall, CM 1996, Tourism in the Pacific Rim.

LTT300 Tourism Channels and Travel Management
12.5 Credit Points  12 Weeks or equivalent  3 Hours per Week  Lilydale
Prerequisite: LBM100, LBM 200, LTT100  Assessment: Assignments, Examinations
A Stage 3 subject in the Bachelor of Business (Tourism and Management) which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
- 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.
- To examine the management processes required for organisation of special events.

Content
- The Travel Sector: from departure to homecoming.
- Tour Organisation: management and marketing, ‘responsible’ travel.
- Special Events: planning, promoting, running and evaluating.

Recommended reading
Gitz, D, Festivals, Special Events, and Tourism, Van Nostrand Reinhold, New York.

LTT302 Planning and Management in Ecotourism
12.5 Credit Points  12 Weeks or equivalent  3 Hours per Week  Lilydale
Prerequisite: LTT100  Assessment: Assignments
A Stage 3 subject in the Bachelor of Business (Tourism and Management) which may also be undertaken in any other degree program at Swinburne 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.

Prescribed Text
Weaver, D 2001, Ecotourism, John Wiley & Sons, Brisbane.

Recommended reading

LZZ301 Work Integrated Learning Project
12.5 Credit Points  130-160 Hours  Six 2-hour class in first four weeks
(introductory/preparatory sessions)  Lilydale  Prerequisite: Completed all Stage 2 subjects for a selected major/minor. No previous attempt to complete LZZ301. Not available concurrently with Industry-Based Learning, LZZ306/312.  Teaching methods: This subject uses a mix of methods directed to achieving the stated objectives: * Team work is an essential aspect, building on previous experience working in teams and groups. Teams will usually be multidisciplinary in nature. * Support offered as required from an academic project supervisor. This will require negotiation and agreement about formal meeting times as well as possible drop-in times as required. * Support and direction from the client/sponsoring organisation.
* Preparatory introductory sessions aimed at developing project management skills. * Assessment requirements of students, which include oral and written presentations to student colleagues, the client and academic staff (your designated project supervisor and other project supervisors working together to provide assessment of your final presentation). * Students are required to keep a weekly log to monitor progress against criteria and milestones set at the start – this is a good way of keeping track of how effectively time is being managed, as well as tracking impediments that may have slowed progress. In essence, students will be required to self-manage all aspects of the subject, thereby being highly responsible for their own success. * Assessment: 1. Project Brief and Agreement Form - completed and submitted; 2. Project Proposal - oral presentation; 3. Final Project Outcomes - oral presentation; 4. Final Project Reports - completed and submitted (a) a Practical Report for the Client and (b) a Reflective Report for the Supervisor. A final year subject which can be undertaken by students from any Swinburne Lilydale course.

Aims & Objectives
- To provide students with the opportunity to strengthen their major/minor studies, knowledge and skills through their involvement in a workplace-based project for a business, industry, government or community-based client.
- Development of a project specification and plan.
- Project management and development.
- Project documentation and communication.

Content
Students will undertake the project in a group, usually consisting of two to four students, under the limited direction of an academic project supervisor and a representative from a sponsoring organisation (where appropriate).

References
Tucker, M & Torkin, T 2003, A Presentation Style Guide for Business Students, Swinburne University of Technology.
Other texts as prescribed throughout the subject.
LZZ306  Industry-Based Learning  
(6 month placement)  
0 Credit Points  • Usually 26 weeks (including annual leave)  • Lilydale  
Prerequisite: Usually completion of Stage 2 Studies with a Credit average  
Teaching methods: This subject uses a mix of methods directed to achieving the stated objectives, as determined by the nature of the placement. In essence, students will be required to self-manage all aspects of the subject, thereby being responsible for their own success. 
A Final Year unit which may be undertaken by students from any Swinburne Lilydale course. 

Aims & Objectives 
This subject 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, with support from a university supervisor and other university staff as required. 
- Students will complete the tasks required to receive accreditation for the subject. 

References 
As appropriate to the discipline. 

LZZ312  Industry-Based Learning  
(12 month placement)  
0 Credit Points  • Usually 52 weeks (including annual leave)  • Lilydale  
Prerequisite: Usually the completion of Stage 2 Studies with a Credit average  
Teaching methods: This subject uses a mix of methods directed towards achieving the stated objectives, as determined by the nature of the placement. In essence, students will be required to self-manage all aspects of the subject and are thereby responsible for their own success. Assessment: Assignments (University) and Projects (Workplace Duties) are assessed by the university supervisor and workplace supervisor. 
A Final Year unit 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 
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- Students will complete the tasks required to receive accreditation for the subject. 

References 
As appropriate to the discipline.
Higher Education Calendar 2004

January
1 New Year's Day
5 Swinburne re-opens
12 Higher Education re-enrolment period ends
26 Australia Day Holiday
27-30 VTAC Round 1 enrolments

February
6 Summer Semester ends (except AGSE)
11-13 VTAC Round 2 enrolments
14 AGSE Summer Semester ends
18 Publication of Summer Semester examination results (except AGSE)
23 Semester 1 classes commence (except AGSE)

March
4 Publication of AGSE Summer Semester results
8 Labour Day
9 AGSE Semester 1 classes commence
31 Census date for Semester 1 (HECS/PELS)
Last day for withdrawal from a Semester 1 course or subject without financial penalty

April
8 Classes end for Easter Break
9 Good Friday
12 Easter Monday
16 Last day to withdraw from a Semester 1 course or subject without academic penalty (except AGSE)
19 Classes resume after Easter Break
25 Anzac Day
30 AGSE Last day to withdraw from a Semester 1 course or subject without academic penalty

May
28 Classes end for Semester 1 (except AGSE)
31 Semester 1 examination period begins
National Institute of Design Examination/ Folio Review Week

June
5 AGSE Semester 1 ends
14 Queen's Birthday
25 Semester 1 examination period ends (Hawthorn/Lilydale/Prahran)

July
11 Publication of Semester 1 examination results (Hawthorn/Lilydale/Prahran)
19 AGSE Semester 2 classes commence
26 Semester 2 classes commence (Hawthorn/Lilydale/Prahran)

August
31 Census date for Semester 2 (HECS/PELS)
Last day for withdrawal from a Semester 2 course or subject without financial penalty

September
17 Last day for withdrawal from a Semester 2 course or subject without academic penalty (except AGSE)
24 Classes end for mid-semester break (Hawthorn/Lilydale/Prahran)

October
4 Classes resume after mid-semester break (Hawthorn/Lilydale/Prahran)
16 AGSE Semester 2 ends
29 Classes end for Semester 2 (Hawthorn/Lilydale/Prahran)

November
1 National Institute of Design Examination/ Folio Review Week
2 Melbourne Cup Day
8 AGSE Summer Semester (Semester 0) commences
26 Semester 2 examination period ends (Hawthorn/Lilydale/Prahran)

December
8 Publication of Semester 2 examination results (Hawthorn/Lilydale/Prahran)
13 Semester 2 commence (Hawthorn/Lilydale/Prahran)
24 Swinburne classes for Christmas break

January, 2004
1 New Year's Day
4 Swinburne re-opens
14 Re-enrolment period ends
26 Australia Day