For detailed course and subject information visit: www.swinburne.edu.au/coursefinder or ring the Information Hotline 1300 368 777.

eNews, Views and Profiles from Swinburne visit www.swinke.com

Swinburne's Virtual Campus Tour
www.swinburne.edu.au/campustour
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 and/or Faculty. 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: http://ppd.swin.edu.au

CourseFinder

Swinburne’s CourseFinder is the source of this handbook’s course information, which was downloaded in September 2004. 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
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#### Research Institutes andCentres
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- Industrial Research Institute Swinburne (IRIS)
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- Other Affiliated Centres:
  - Australian Centre for Emerging Technologies and Society (ACETS)
  - Australian Foresight Institute (AFI)
  - Australian Graduate School of Entrepreneurship (AGSE)
  - Centre for Advanced Internet Architectures (CAIA)
  - Centre for Astrophysics and Supercomputing
  - Centre for Atom Optics and Ultrafast Spectroscopy (CAOUS)
  - Centre for Business and M anagement Research (CM BR)
  - Centre for Component Software and Enterprise Systems (CeCSES)
  - Centre for eBusiness and Communication
  - Centre for Electronic Financial Services (CeFS)
  - Centre for Imaging and Applied Optics (CIAO)
  - Centre for Intelligent Agents and Multi-Agent Systems (CIAM AS)
  - Centre for Intelligent Systems and Complex Processes (CISCOP)
  - Centre for Internet Computing and eCommerce (CICEC)
  - Centre for M icro-Photronics (CM P)
  - Centre for Molecular Simulation
  - Centre for Software Engineering (CSE)
  - Graduate School of Integrative M edicine (GSIM)
  - Information Technology Innovation Group (ITIG)
  - Psychology Centre
  - Sensory Neuroscience Laboratory
  - Swinburne Centre for Neuropsychology

### Undergraduate Courses

#### Bachelor of Business
- Business specialisations:
  - Accounting
  - Asian Business
  - Business Law
  - Economics
  - eM arketable
  - European Business
  - Finance
  - Human Resource Management/Organisation Behaviour
  - Information Systems
  - International Business
  - M anagement
  - M anufacturing M anagement
  - M arketable

- Bachelor of Business in Accounting
- Bachelor of Business in Human Resource M anagement
- Bachelor of Business in International Business
- Bachelor of Business in M arketable

#### Bachelor of Design
- Bachelor of Design in Communication Design
- Bachelor of Design in Industrial Design
- Bachelor of Design in Interior Design

#### Bachelor of Design (Honours)
- Bachelor of Design (Honours) in Communication Design
- Bachelor of Design (Honours) in Industrial Design
- Bachelor of Design (Honours) in Interior Design

#### Bachelor of Engineering in Biomedical Engineering
- Bachelor of Engineering in Civil Engineering
- Bachelor of Engineering in Electronics and Computer Systems

#### Honours Year
- Bachelor of Business (Honours)
- Bachelor of Design (Honours)
- Bachelor of Engineering (Honours)
- Bachelor of Design (Honours) in Communication Design
- Bachelor of Design (Honours) in Industrial Design
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Coat of Arms

The motto: the College of Arms' translation of the motto is:

Achievement through learning

The crest: the demi-Boar and the cinquefoil perpetuate the Swinburne connection; the symbolise the Southern Cross.

The arms: the basic colours of red and white, and the cinquefoils charged on the shield, which appears in the family coat and the addition of the Bordure and the Mullets (Stars) commemorate the arms of the Swinburne family. The omission of the third cinquefoil that persists between it and the founder and his family. The conferring of a modification which appears in the family coat and the addition of the Bordure and the Mullets (Stars) in the University's Statement of Direction 2015.

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 M Ullets 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:

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.

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 provides career oriented education and has a strong commitment to focused research. It has a robust technology base and effective links with industry which are supported by a number of cutting-edge, internationally recognised research centres. Learning and teaching is a strategic priority for the University, reflecting Swinburne's commitment to Life Long Learning.

Industry Based Learning (IBL) programs are a feature of many Swinburne undergraduate programs, reflecting their applied vocational emphasis and industry relevance. Swinburne is a leader in IBL, a program which places students directly in industry for vocational employment as an integral part of the course structure.

Swinburne is one of only a small number of Australian universities with BEd programs ranging from apprenticeships to PhDs. As one of Australia’s leading interdisciplinary universities, Swinburne continues to create new approaches and partnerships between higher education and TAFE.

Study Pathways that allow students to move between either TAFE and Higher Education or TAFE based VCE studies into TAFE programs are embedded in Swinburne's course profile. Movement between higher education degrees and TAFE studies is also possible, and is likely to increase in the future. Pathways provide students with more flexibility and increased opportunities to complete tertiary qualifications.

Swinburne has six campuses: Croydon, Hawthorn, Healesville, Lilydale, Prahran and Wantirna, reflecting the University's commitment to provide expanded and more accessible educational opportunities to the residents of Melbourne's eastern suburbs.

Swinburne's Future

Swinburne is committed to building a sustainable future which is outlined in the University's Statement of Direction 2015. The Statement of Direction describes what Swinburne in 2015, what people and students are committed to, and how it intends to achieve these outcomes.

Six strategic themes highlight the priority areas Swinburne will develop into the future.
The Entrepreneurial University

Staff and students will be supported to generate innovative ideas and to develop an environment which is creative and dynamic. This will be achieved through the development of approaches to learning and innovative teaching and research which empower creativity, and responsive administrative systems which enable flexibility. Our graduates will be able to meet the challenges of competitive business environments and rapidly changing communities with the flexibility and awareness to be successful in their chosen fields, and taking with them the best ideas from Swinburne's cutting edge research programs.

International in their outlook

Swinburne will be an international university that recognises its international role while meeting local and regional needs. Our students will come from around the world, and our graduates will be prepared for an international workplace. Staff will be members of an international education community, and strive to build Swinburne to be a significant international university. International perspectives will enrich the delivery of learning, teaching and research at all Swinburne campuses.

Intersectoral in their approach

Swinburne's dual sector nature creates unique and distinctive advantages for students, staff, and industry. Students will be able to take advantage of effective pathways between TAFE and Higher Education. These pathways will add value to students in both Higher Education and TAFE. Staff will be able to take advantage of opportunities to collaborate across sectors to develop capabilities that strengthen Swinburne's future as a sustainable university. Industry will be able to take advantage of solutions for its education, training and research needs that range from workplace training to PhDs, and from one-off research projects and industry training, to continuing research collaborations.

Flexible in Learning and Teaching

Swinburne will be recognised for its flexible approaches to learning and teaching which will create an engaging, stimulating and modern environment in which students can learn in different ways and in different places to achieve their desired outcomes. Our approaches will be learner centred and sustained by a cooperative, stable and supportive community for students, with programs informed by scholarship and research. Our staff will provide high quality teaching which equips students with knowledge and thinking skills needed to work in an international workplace. Our quality assurance and improvement processes will ensure that our students are ready to meet industry and wider community expectations.

Focused in Research

Swinburne's research base will be focused and targeted to deliver impact in a selected number of areas of strength, chosen to support and address the technologies and social issues of the 21st century. We will strive to develop an international reputation for research excellence within these focused areas. Our research activities will span both basic and applied activities. However, in keeping with our history, research relevance and real life applications in industry and community will be key defining features.

Engaged with Industry and Community

Staff and students will be engaged with industry and the community, building productive educational and research partnerships. Professional practice will also be encouraged as an important element of building these partnerships. Our strong heritage in providing high quality, professionally oriented education, training and research to industry partners will provide the foundation to build Swinburne's international reputation as a leader in industry based learning and focused industry research. Underpinning industry and community partnerships will be key commitments to sustaining graduate employability.

Teaching Sectors

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

Higher Education

Two Higher Education Divisions, one based at Hawthorn/Prahran and one at Lilydale, offer professional qualifications ranging from bachelor degrees to graduate qualifications (certificates, diplomas and degrees of Master and PhD). A total of 10,102 students were enrolled in Higher Education programs in 2004.

Technical and Further Education (TAFE)

The TAFE Division offers professional and para-professional level programs covering diploma, certificate, apprenticeship, VCE and access qualifications. A number of specialist courses are also provided for industry and the community. The TAFE Division has four schools: School of Arts, Hospitality and Sciences; School of Business and eCommerce; School of Engineering; School of Social Sciences. A total of 26,891 students were enrolled in TAFE courses in 2003.
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
Officers and Staff of the University

University Council

Chancellor
D. Mitchell, BSc(M elb), M Sc(M elb), PhD(Lond)

Appointed by the Governor-in-Council
K. Bowlen, BA(SIT)

D. Eynon, BEc(Mon), MA(Melb)

D. Loader, BSc(Syd), MEd(Syd)

K. Townsend, BA(Mon), DipEd(Mon), MEdStud(Mon), DipCompDir(UNSW)

S. van der Mye, BCom(Hons)(UNSW), PhD(UNSW), FAIBF, FAICD, FAIM, FASCPA, FCIS

Appointed by the Minister for Tertiary Education and Training
J. Trewhella

Appointed by the University Council
T.W. Brown, FCA, ASCPA (Deputy Chancellor)

S. Lipski, AM, BA(Melb)

D. Watson, DipM(SLon), FAICD, FAIBF

B. Hodges, DipEng(Aero)(RM IT)

TBA

Member ex officio
Prof I. Young, BE(Hons), M EngSc, PhD(CU), FE Aus, FTSE

Chair of the Academic Board
Prof H. Lueckenhausen, GradDipl(Industrial Design)(RM IT), DipEd(Haw), M DIA

Chair of the Board of Technical Studies
TBA

Elected by Higher Education Academic Staff
G.M. Leonard, BSc(M elb), M ACS

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

Elected by General Staff
TBA

Elected by Higher Education Students
J. Ngam

Elected by TAFE Students
S. Desmond

Council Secretariat

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

Executive Assistant
L. Fernando

Chancellery

Chancellor
D. Mitchell, BSc(M elb), M Sc(Lond), PhD(Lond)

Vice-Chancellor and President
Prof I. Young, BE(Hons), M EngSc, PhD(CU), FE Aus, FTSE

Deputy Vice-Chancellor (Higher Education)
Prof D. Murphy, BE(Hons), MSc(Lond), DPhil(Oxon), FE Aus, FTSE

Deputy Vice-Chancellor (Lilydale)
Prof A. van Emst, AM, BA, M Ed, PhD(LaT), TPTC, M ACE

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

Pro Vice-Chancellor (International)
S. Connelly, BA, MA, DipEd, M on PostGradDiplMgt

Pro Vice-Chancellor (Research and Industry Liaison)
Prof K.C. Pratt, BE(Chem), PhD(M elb), FICHE, FE Aus, CEng, FRA C, CC chem, FTSE

Pro Vice-Chancellor (Academic) (Sarawak)
Prof David Booth, BSc(Hons)(Syd), M Sc(M on) PhD(M elb), DS(UNSW) Honoris causa, FAIP, FE Aus, MIEEE, M AO S

Vice-President (Resources)
S. Beall

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

Director, Internal Audit
J. Vander Pal, DipAccy(PTC), BBus(SIT), M EdAdmin(U N E), FCPA, RCA

Chief Financial Officer
B.M. Telford, BComm(M elb), MBA(Desk), CPA, AC I SM

Director, Swinburne Knowledge
B. Whan, BE(Hons), PhD, AIM M , FA CD

Director, Australian Foresight Institute (AFI)
vacant

Director, Submissions and Applications
M. Conway, BA(Griffith), GradCert(Stategic Foresight)(SU T), GradDipl( Ter Ed), M EdAdmin(Hons)(UNE)

Principal Counsels
T. Rowan, LLB(Hons), BA(M elb)

S W ansbrough, BA, LLB(M on)

Executive Officer to the Vice-Chancellor
M. Thome, BA(Hons), LLB(Hons), PhD(M elb)

University Secretary
M. Tomlinson, BA(Hons)(Melb), M A(LaT), PhD(Cantab)
Manager, Education Abroad
G. King, BSc(M on)

Office of the Pro Vice-Chancellor (Research and Industry Liaison)
Pro Vice-Chancellor
Prof K.C. Pratt, BE(Chem), PhD, MIE Aust, CEng, FRAC, CChem, FTSE

Graduate Research School
Director Graduate Studies
Assoc Prof P. Green, BA(LaT), DipTeach(Primary)/ISVCI, MEd(LaT), PhD(LaT)
Director Research
S. Mosca, BA(M elb), GradDipBusSys(RMIT)
Industry Liaison
Director
J. Kay, BA, DipEd(M elb), GradDipEd(Counselling)(RMIT)

Office of the Vice-President (Resources)
Vice-President
S. J. Beall

Associate Director, Resource Planning and Analysis
R.D. Sharma, BSc(Tas), DipEd(Tas), GradDipRes(RMIT), MEdAdmin(NewEng), PhD

Executive Director, Major Projects
G. Wicke, AssocDipPA(RMIT), GradCertMan(SIT)

Facilities and Services Group
Director
Vacant

Director, Major Projects
G. Joy

Human Resources Department
Director
R. Munn

Information Resources
Director
D. Whitehead, OAM, BA(Hons), BDLvHons(M elb), GradDipLib(RMIT), MLib(RMIT)

Deputy Director
G. Hardy, BA(Hons)LaT, GradDiplInfSv(RMIT), M A(LaT)

Information Services Manager, Hawthorn-Prahran
R. Humphries, BA(Hons)(Birmingham), GradDipLib(RMIT), M BIT(RMIT)

Information Services Manager, Croydon-Wantirna
B. Donkin, RegistrationCert(ISA), DipArts(SCOT), GradDiplSCV(Hawthorn)

Information Services Manager, Lilydale-Healesville
A. Lisov, BA(Hons)(M elb), M A(M elb), DipEd(M elb)

Coordinator, Swinburne History and Artefacts
S. Jervis, BA(Adel)

Information Technology Services
Chief Information Officer and Director
R. Constantine, DipM SM(M elb), MBA(M on), MACS

Associate Director, Information Systems
M. Smith, BAppSc(CSSE), M InfTech(SUT)

Associate Director, Infrastructure
J. Batchelder, BAppSc(SUT)

Associate Director, Client Services
Vacant

Security Manager
G. Harrison

Office of the Vice-President (Student Affairs)
Vice President
S. Davies, BA(Hons)(Leic), DipMkt(CIM), FAMI, CPM

Executive Officer
S. O’Connor, GradCertMgmt(Deak)

Project Manager, Student Experience
J. McAdam, BBus(SUT), AAM I, ATEM M

Alumni and Development
Director
Assoc Prof B.C. McDonald, BCom, DipEd(M elb), FCPA

Corporate Marketing
Director
J. Russell

Manager, Divisional Marketing (Higher Education)
L. Sprott, BA(Hons)(LaT)

Manager, Divisional Marketing (Lilydale)
M. Sette, BBus(SUT)

Manager, Divisional Marketing (TAFE)
J. Austin, GradCertBus(M kng)(SUT), MATH A

Student Operations
Director
T. Kilsby, BA(LaT), GradDiplEdAdmin(M elb)

Manager, Central Student Operations
L. Bayly, BEd(M elb)

Student Services
Director
A. McFarland, BA(LaT), GradDiplBusHRM(VicCol), CAHRI

University Secretariat
Director
M. Elliott, BA, M Ed(M elb), PhD(Stanford)
**Higher Education Division (Hawthorn/Prahran)**

**Divisional Staff**

**Deputy Vice-Chancellor**

- Prof. D. Murphy, BE(M), M Sc(Lond), DipPhil(Oxon), M AIIP, FIEAust, CPEng

**Pro Vice-Chancellor (Academic) (Sarawak Campus)**

- Prof. D. Booth, BSc(Hons)(Syd), M Sc(M on), PhD(Melb), DSc(DLSU)Honoris causa) FAIP, FIEAust, MIEEE, M AOS

**Director, Divisional Operations and Planning**

- E. Eedle, BA(M on), M Ed(M elb)

**Director Curriculum Development**

- Assoc Prof M. Mazzolini, BSc(Hons)(Melb), PhD(Melb)

**Finance Manager**

- A. Maudsley, BCom(UQ)

**Manager, Divisional Marketing**

- L. Sprott, BA(Hons)(LaT)

**Manager, Divisional Student Administration**

- J. Berry

**Australian Graduate School of Entrepreneurship (AGSE)**

**Director**

- D. Hayward, BA(SUT), GradDipUrdbSc(SUT), PhD(M on)

**Executive Officer**

- K. Lynch, DipT(Deak)

**Emeritus Professor and founder of the M El program**

- M. Gillin, AM, DIP(Honours Causa), BM ete, M Ed(Cantab), M EngSc, PhD(Melb), ASM B III’t, FTSE, FIEAust, FIPENZ, FAHSE

**Professors**

- N. Cherry, BA(M elb), M A(M elb), PhD(M IT)
- A. Hanich, FdpM(RM IT), BE(UNSW)., FICD, FIM C
- K. Hindle, BA(Hons)(ANU), M BA(Adel), PhD(SUT), CPA, AAIM, A AIM, M M RS, M PRIA
- T. M cKaskill, BE(M on), M Com(UNSW), PhD(LBS), FCPA, CFPM, CIRM
- K. Preiss, BA(Psych), GradDipAppPsych(Flin), M Com(Res), PhD(M elb)
- C. Selvarajah, BA(Tas), DipT&D, M BS, M BA(M elsey), PhD(Deak), FGM AA

**Professors (Adjunct)**

- J. Bailey, DipEE(F’cay), BComm(M elb), M BA, PhD(M elb), AAIM, FIEAust
- N. Bechervaise, Ed, MEd(M on), MACE
- D. Chr’ng, BSc(Hons)(M on), M Bus(M on)
- P. Chandler
- C. Christodoulou, BAgSc(M elb), M Sc(M on), M Admin(M on), PhD(M on)
- D. Ee, PhD(Colombia Pacific, USA)
- M. Epstein, M Sc, M EISUT), PhD
- L. Katzenstein, M(A(Tufts), M A(Harvard), PhD(Geneva)
- D.N. Khurana, BEng, M Sc.
- J. King
- S. Long, BA(Hons)(M elb), TSTC, M Ed(M on), PhD(M elb)
- K. Lusscombe
- J. Miller, AO, PhD, FCPA, FAICD
- R. Nordlinger, BSc(M IT), M Sc(M IT)
- G. Prideaux, BA, DipSc(W KSyd), M Admin(M on), EdD(Boston), FAHRI, FAHSE

**Senior Lecturers**

- P. Buckley, BN(SACAE), GradDipHlthAdmin(SAIT), M Ed(HRS)(UniSA), DocOrgDyn(SUT)
- A. McMuray, BScSc, BEd, M A, PhD
- S. Rahman, M A Econ(M anch), M Comm(Rajah), PhD(M anch)
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General Information

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<th>Officers and Staff</th>
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E. M cDonald

Postgraduate Administration Officer

K. Broek

Professional Public Programs and Project Manager

A. Norton, Grad Cert Bus (Business and Communication) (SUT)

Research and Centre for EFS Administrator

K. Pring

Academic Assistant, Learning Materials and Programs

N. Buchanan

Postgraduate Coordinator

A. Tonkin, BCom (Deakin)

Centre for Regional Development

Administration Officer

N. White

Deputy Vice-Chancellor’s Office

Personal Assistants

S. Lester

N. White

Executive Officer

D. M cGregor, TPTC (Geelong), M A (Tübingen), Grad Dip Mgmt (RMIT)
Industry Liaison Office
M. Blackburn
K. Pomeranz, BA(M on), DipEd(M on), BEd(M on)

Online Resources Co-ordinator
B. Kompe, BSc(Chem)(LaT), PhDChem(LaT)

Swinburne TAFE Division
Divisional Staff
Deputy Vize-Chancellor (TAFE)
A. Croucher, BSc(Hons)(Lond), PGCE(Camb)

Executive Director, Educational Development
J. Bisland, BA(Hons), GradDipChDev, GradDipEd, M A, M Ed

Executive Director, Strategic and Business Development
J. Cashion, BSc(M elb), DipEd, DipCompSc, GradAIP

TAFE School of Arts, Hospitality and Sciences
Director
H. Coats, BBus, DipEd, BEd, M Ed, GradDipLeadership&M anagement

School Administrator
M. Evans

Manager, Arts
W. W inford, DipArts&Design(RM IT), DipEd(Haw Inst)

Manager, Horticulture and Environmental Sciences
F. Helleigreig, DipHort, GradDipEd, GradDipLeadership&M anagement

Acting Manager, Hospitality and Toursim
V. Egan, CertInTravelOps(BIT), DipTeach(M elb), DipBus(Frontline M anagement)(SUT)

Manager, Industrial Sciences
L. Edwards, DipM edLabSc, GradDipComputing, GradCert(mgmtDev)(Education and Training), GradDipBus(Frontline M anagement), GradDip(OH&S)

Manager, Centre for Sustainability
L. Condon, BSc, GradDipEd, Cert4(Assessment & Workplace Training)

Manager, Centre for Occupational Health and Safety
M. Dawoud

TAFE School of Business and eCommerce
Director
I. Wittman, BEd, DipFM I, DipEd

School Administrator
M. Faikni

Manager, Administration and Business Technology
D. Barbuto, BComm, TSTC, GradCert in M anagement Development (Education & Training), Cert4(Assessment & Workplace Training)

Manager, Financial Services
S. Smith, BCom, BEd, GradCertEduAdmin

Manager, Management
G. Stattery, BComm(M elb), DipEd(M elb), DipBus(Frontline M anagement)(SUT), CertIV(Assessment and Workplace Training)

Manager, Marketing and International Studies
D. Sullivan, M BA, BComm, GradDipEd, GradDipLegal Studies, GradCertEduc, CertIV(Assessment and Workplace Training)

Manager (Acting), Business Enterprise Centre
J. Symons, GradDipVET(M elb), DipFM (SUT), CertIV(Assessment and Workplace Training)(SUT), DipPT(Science, M elb)

Manager, Centre for Collaborative Business Innovation
N. Everden

TAFE School of Engineering
Director
C. De M artinis, BScC(Hons), M ScC, DipEd, BEd, GradDip(Occupational Hygiene), GradDip(FLM)

School Administrator
J. Dansey, DipBusAdmin, GradCertBus(Executive Administration)(SUT), CertIV(Assessment & Workplace Training)

Manager, Information Technology
B. Clifford, BE, TTTC

Manager, Engineering
R. Barrow, DipHortSci, DipTechTeach, DipFLM

Manager, Performance and Development
D. Noel, AssDipGenAdmin, DipTechTeach(UTS), DipFLM

Manager, Centre for New Manufacturing
J. Cawley

TAFE School of Social Sciences
Director
R. J akson

School Administrator
E. Harkness

Manager, Access
L. Cutting, M AppLinguistics(Elb), DipEd(TES(LaT), GradCert(Secretarial Studies), Grad 4 M usic

Manager, Child and Family Studies
C. Forbes, BA, BS(hons)(M on), DipTeaching(Qld), DipFLM (ISUT)

Manager, Community and Further Education
K. Bailey, BA, DipPsych, DipT, M Ed (m anagement&)Leadership), DipFLM , CertIV(Assessment and Workplace Training)

Manager, Health, Recreation and Human Services
M. Lettieri

Manager, Centre for Health and Wellbeing
M. Nikolajuk
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 (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)
- Environment and Biotechnology Centre (T1)
- Industrial Research Institute Swinburne (IRIS) (T1)
- Institute for Social Research (T1)

Brain Sciences Institute (BSI)

Director: Assoc Prof David Crewther
Telephone: +61 3 9214 5877
Email: dccrewther@swin.edu.au
Contact: Kathy Douglas, Institute Administration Manager
Telephone: +61 3 9214 8375
Email: k.douglas@swin.edu.au
Website: www.scan.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 underlines 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: Dr Enzo Palombo
Telephone: +61 3 9214 8571
Fax: +61 3 9819 0834
Email: epalombo@swin.edu.au
Website: www.swin.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 16 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 focussed 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 Milan Brandt
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Fax: +61 3 9214 5050
Email: iris@swin.edu.au
Website: www.swin.edu.au/iris

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 micro- and nanotechnologies in manufacturing processes; and
- By building on our emerging core capability in bioprocessing.

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 closely 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 (IM S&T)
- The CRC for Cast Metals Manufacturing (Castmtn)
- 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 M Eng (by research) programs.

Institute for Social Research (ISR)

Acting Director: Prof Julian Thomas
Telephone: +61 3 9214 5466/8825
Fax: +61 3 9819 5349
Email: j.thomas@swin.edu.au
Website: www.isr.swin.edu.au

The ISR undertakes applied research in the social sciences and provides a platform for discussion and debate around contemporary social issues and policy. It runs postgraduate courses in housing management and philanthropy, provides research services and professional development programs, and is home to Australian Policy Online, a leading source of Australian public policy research.

The ISR focuses on three interdisciplinary programs:

- Cities and Housing
- Citizenship and Government
- 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 implications 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 Government program focuses on research on modern liberal government, on the roles of states, citizens, markets and communities, and on the impact of liberalization, internationalisation and competition. Areas of study include...
The National Centre for Gender and Cultural Diversity (NCGCD) is now located within one of few bodies in the world to offer specialised skills development 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 NCGCD also conducts the Recruitment and Retention Program for Women into Non-Traditional Study program at Hawthorn campus – this program rains and then employs young women in ‘non-trad’ courses to be ambassadors in a

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. The second theme examines the ways in which communications, and the cultures they produce, have modified our perception of space, place and identity.

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.

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.
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**

Director: Prof Matthew Bailes
Telephone: +61 3 9214 5569
Fax: +61 3 9214 8797
Email: mbailes@swin.edu.au
Website: astronomy.swin.edu.au

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 Kilometre 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 Advanced Internet Architectures (CAIA)**

Director: Assoc Prof Grenville Armitage
Telephone: +61 3 9214 8373
Fax: +61 3 9819 0856
Email: garmitage@swin.edu.au
Website: http://caia.swin.edu.au

The Centre for Advanced Internet Architectures (CAIA) is a research centre within the Faculty of Information and Communication Technologies. We aim to perform industrially relevant, innovative and creative 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, postdoctoral research fellows, research students, and research assistants.

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**Centre for Astrophysics and Supercomputing (CAOUS)**

Director: Prof Peter Hannaford
Telephone: +61 3 9214 5164
Fax: +61 3 9214 5840
Website: www.swinburne.edu.au/rescentres/soll/caous/

The Centre for Atom Optics and Ultrafast Spectroscopy is part of the newly established Swinburne Atomics 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 computer, ‘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 of decoherence places on the implementation of practical quantum computers and studies of quantum information processing based on magnetic microstructures as possible quantum bits.

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**Centre for Business and Management Research (CBMR)**

Acting Director: J ohn Pidgeon
Telephone: +61 3 9214 8390
Fax: +61 3 9214 5245
Website: www.swinburne.edu.au/business/cbmr/welcome.htm

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

The CBMR provides an interface with the commercial sector for the Faculty'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 Faculty of Business and Enterprise.

At present CBMR activities are organised around, but not confined to, five interrelated streams of research:

- Marketing
- Human Resource Management and Organisation Behaviour
- Accounting and Finance
- 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 Component Software and Enterprise Systems (CeCSES)
Director: Prof Jun Han
Telephone: +61 3 9214 5732
Fax: +61 3 9819 0823
Email: jhan@swin.edu.au
Website: www.it.swin.edu.au/centres/

The Centre for Component Software and Enterprise Systems (CeCSES) conducts research into component based engineering of software and enterprise systems, focusing on the development of advanced methods, techniques and tools. It addresses real-world goals for real-world systems with practical and scientifically based solutions. The Centre also provides consultancy to industry and governments in our areas of expertise.

CeCSES has internationally recognised expertise in the following areas: software composition, software interoperability, software security, software performance, dynamic and adaptive software systems, distributed object and component technologies, software architectures, system integration and evolution, software processes, software methodologies and foundations, requirements engineering, software and system engineering tools, and services computing.

Centre for eBusiness and Communication
Director: Dr Bruce Calway
Contact: Ann Norton
Telephone: +61 3 9215 7305
Fax: +61 3 9735 4713
Email: adminbus@swin.edu.au
Website: www.it.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.

Centre for Electronic Financial Services (CeFS)
Director: Dr Bruce Calway
Contact: Ann Norton
Telephone: +61 3 9215 7305
Fax: +61 3 9735 4713
Email: efsadmin@swin.edu.au
Website: www.it.swin.edu.au/efs

The Centre for Electronic Financial Services (CeFS) was established to address the needs of business people and others working or interested in the financial services sector, where the environment has been significantly changed by the advent of new enabling technologies.

Similarly to the Centre for eBusiness and Communication, the CeFS 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 academic, technology, and financial services organisations around the world.

The CeFS researches and advocates the engagement of eBusiness principles in the creation, conveyance, application, and deposition of finance. At the Centre for Electronic Financial Services, a multidisciplinary approach to learning and research has been taken from inception. Scholars from a variety of different disciplines work together in the same conceptual and physical space, an Enterprise Design Lab. This allows research and development to take place first within traditional discipline boundaries, and then moving forwards to a common problem or goal using new methods of analysis.

The Centre is currently preparing a new electronic financial services management program consisting of Graduate Certificate, Graduate Diploma and Master of Business.

Centre for Imaging and Applied Optics (CIAO)
Director: Dr Alex Mazzolini
Telephone: +61 3 9214 8866
Fax: +61 3 9819 0856
Email: amazzolini@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 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: kowalczyk@swin.edu.au
Website: www.it.swin.edu.au/centres/

CIAMAS carries out research in intelligent agents, mobile agents and multi-agent systems, focusing on autonomous decision-making, coordination and adaptation mechanisms, and their applications in building and managing open, large-scale, distributed systems. Research areas include complex agent negotiations and collective decision-making, distributed learning and adaptation in multi-agent systems, and dynamic interactions and coalition mechanisms. The application areas involve automated composition and management of service-oriented systems, dynamic virtual organisations and enterprises, collaborative e-business and smart information environments.

Centre for Intelligent Systems and Complex Processes (CISP)
Director: Prof Tim Hendtlass
Telephone: +61 3 9214 8863, or +61 3 9214 5272 (Postgrad Area)
Fax: +61 3 9214 0925
Email: thendtlass@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.
Molecular motors undertaken by CMS staff and postgraduate students include the investigation of:

- 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.

Centre for Software Engineering (CSE)

Director: Prof T.Y. Chen
Telephone: +61 3 9214 4369
Fax: +61 3 9819 0823
Email: TYChen@it.swin.edu.au
Website: www.it.swin.edu.au/centres/cse/

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 three research groups within the Centre for Software Engineering:

- Software Testing Group
- Software Usability through Requirements Engineering Group
- Software Completeness Testing Group

Software Completeness Testing 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. Our research group focuses on investigating visual information display, retrieval, recognition and processing.

Graduate School of Integrative Medicine (GSIM)

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

The Swinburne Graduate School of Integrative Medicine is designed to provide first-class educational programs in complementary medicine and to conduct rigorous and trail-blazing research into complementary therapies with the aim of becoming an important international research centre in this field.

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

Information Technology Innovation Group (ITIG)

Director: Kon M ozuksis
Telephone: +61 3 9214 8585
Fax: +61 3 9214 8736
Email: kmouzakis@swin.edu.au
Website: www.it.swin.edu.au/centres/itig/

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/stbs/pc](http://www.swinburne.edu.au/stbs/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.

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**Sensory Neuroscience Laboratory**

Director: Assoc Prof John Patterson  
Telephone: +61 3 9214 8662  
Fax: +61 3 9819 0856  
Email: jpatterson@swin.edu.au  

The Sensory Neuroscience Laboratory is a Swinburne research group investigating the electrophysiology 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.

The laboratory provides specialist research capacity for a variety of industries as well as undertaking of fundamental research and the laboratory has had a number of applied projects which are supported by industry bodies as well as individual companies.

Recently, the Laboratory has been experimenting with techniques to allow the recording of eye movements during activities like riding a mountain bike, or playing hockey. These techniques might have wide application allowing us to better understand the way we pay attention to the visual world outside the artificial laboratory situation. Further recent work has looked at the effect of whole body vibration on fatigue and well-being showing that even small intervals of vibration may alter our ability to handle tasks. A major feature of the Laboratory is its capacity to innovate in monitoring human and animal activity and physiology. When combined with the range of support from colleagues in the University, we are able to integrate many disciplines to analyse problems in novel ways.

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**Swinburne Centre for Neuropsychology**

Director: Prof Con Stough  
Telephone: +61 3 9214 8167  
Email: cstough@swin.edu.au  

The Swinburne Centre for Neuropsychology was established in 2002 as a strategic initiative of Swinburne University to advance research in the science of Neuropsychology. The Centre is committed to understanding the relationship between neurochemicals and psychological, neuropsychological and physiological functioning in both normal human and clinical populations.

The Centre conducts high quality multidisciplinary, applied, theoretical/experimental and clinical research that draws upon a number of scientific disciplines including Psychopharmacology, Organisational Psychology, Neuropsychology, Psychophysiology, and Psychiatry.

The Swinburne Centre for Neuropsychology includes the Organisational Psychology Research Unit, plus study areas in:

- Clinical and Forensic Psychology, Neuropsychology and Psychiatry
- Drugs and Driving
- Mobile Phone Emissions: Psychological and Neural Function
- Herbal and Nutrient Research
- Organisational Psychology (Emotional Intelligence, Occupational Stress)
- Psychological Assessment
- Psychophysiology: Basic and Clinical
- Emotional Intelligence in Schools
Undergraduate Courses
## Undergraduate Courses Chart

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Campus</th>
<th>Course Duration</th>
<th>VTAC Code (CSP)</th>
<th>2004 ENTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>A055</td>
<td>Bachelor of Business</td>
<td>H</td>
<td>3 yrs 6 yrs</td>
<td>34411</td>
<td>80.80</td>
</tr>
<tr>
<td>A042</td>
<td>Bachelor of Business in Accounting</td>
<td>H</td>
<td>3 yrs 6 yrs</td>
<td>34181</td>
<td>80.80</td>
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<tr>
<td>A043</td>
<td>Bachelor of Business in Human Resource Management</td>
<td>H</td>
<td>3 yrs 6 yrs</td>
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<tr>
<td>A045</td>
<td>Bachelor of Business in International Business</td>
<td>H</td>
<td>3 yrs 6 yrs</td>
<td>34411</td>
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<tr>
<td>A044</td>
<td>Bachelor of Business in Marketing</td>
<td>H</td>
<td>3 yrs 6 yrs</td>
<td>34411</td>
<td>80.80</td>
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### Double Degrees

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<tr>
<th>Course Code</th>
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<th>Course Duration</th>
<th>VTAC Code (CSP)</th>
<th>2004 ENTER</th>
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</thead>
<tbody>
<tr>
<td>A058</td>
<td>Bachelor of Business / Bachelor of Arts in Italian</td>
<td>H</td>
<td>4 yrs 8 yrs</td>
<td>34651</td>
<td>80.30</td>
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### Honours Year

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Swinburne University of Technology | Undergraduate Course Handbook 2005
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**Faculty of Life and Social Sciences**

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<td>Bachelor of Technology in Information Technology and Software Engineering</td>
<td>L</td>
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<td>6 yrs</td>
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### Double Degree

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<tr>
<td>L067</td>
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<td>L</td>
<td>4 yrs</td>
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### Dual Awards

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<tr>
<td>L057</td>
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<td>L</td>
<td>4 yrs</td>
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### Honours Year

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### National Institute of Circus Arts

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<tr>
<td>DCA10</td>
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<td>P</td>
<td>3 yrs</td>
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### Undergraduate Awards Chart

#### Higher Education Division (Hawthorn/Prahran)

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<th>Alternative Abbreviation (including discipline/specialisation)</th>
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<tr>
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<tr>
<td>N053</td>
<td>Bachelor of Arts in Media and Communications</td>
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<td>BA(Media and Communications)</td>
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<tr>
<td>N051</td>
<td>Bachelor of Arts in Psychology and Psychophysiology</td>
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<td>Bachelor of Business in International Business</td>
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<td>Bachelor of Business in Marketing</td>
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</tr>
<tr>
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<td>Bachelor of Business / Bachelor of Arts in Italian</td>
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<td>DCD10</td>
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<td>BDes(Communication Design)</td>
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<td>DID10</td>
<td>Bachelor of Design in Industrial Design</td>
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<td>BDes(Industrial Design)</td>
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<td>DINTD10</td>
<td>Bachelor of Design in Interior Design</td>
<td>BDes</td>
<td>BDes(Interior Design)</td>
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<td>DMM10</td>
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<td>Bachelor of Engineering in Civil Engineering</td>
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<td>BEng(Civil)</td>
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<td>Bachelor of Engineering in Electronics and Computer Systems</td>
<td>BEng</td>
<td>BEng(Electronics and Computer Systems)</td>
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<td>M050</td>
<td>Bachelor of Engineering in Mechanical Engineering</td>
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<td>BEng(Mechanical)</td>
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<tr>
<td>PDE50</td>
<td>Bachelor of Engineering in Product Design Engineering</td>
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<td>R058</td>
<td>Bachelor of Engineering in Robotics and Mechatronics</td>
<td>BEng</td>
<td>BEng(Robotics and Mechatronics)</td>
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<td>E059</td>
<td>Bachelor of Engineering in Telecommunications and Internet Technologies</td>
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<td>BEng(Telecommunications and Internet Technologies)</td>
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<td>BEng/BSc</td>
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</table>
### Undergraduate Awards Chart

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<th>Course Title</th>
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<td>Bachelor of Multimedia in Games and Interactivity / Bachelor of Science in Computer Science and Software Engineering</td>
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<td>BBus(Tourism and Management)/DipHospMgmt</td>
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<td>Course Title</td>
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<td>BSocSc</td>
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<td>Bachelor of Technology in Information Systems</td>
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<td>BTech(Information Systems)</td>
</tr>
<tr>
<td>L063</td>
<td>Bachelor of Technology in Information Technology and Software Engineering</td>
<td>BTech</td>
<td>BTech(Information Technology &amp; Software Engineering)</td>
</tr>
<tr>
<td>L059</td>
<td>Bachelor of Technology in Interactive Multimedia</td>
<td>BTech</td>
<td>BTech(Interactive Multimedia)</td>
</tr>
<tr>
<td>DCA10</td>
<td>Bachelor of Circus Arts</td>
<td>BCircA</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**National Institute of Circus Arts**

**Bachelor of Circus Arts**

DCA10  Bachelor of Circus Arts  BCircA  Not applicable
General Undergraduate Information for Students

Application procedure

How to Apply (Australian permanent residents only)
All full-time undergraduate courses together with the majority of full time TAFE courses offered by Swinburne, 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 must be 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 364 133.

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: (03) 9214 8151
- Email: isuen@swin.edu.au
- Website: www.swin.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. The direct entry application form has details of which courses require direct entry applications. Hard copy forms are also available from Swinburne faculty offices. Please see below for a list of faculty contacts.

Faculty of Business and Enterprise
Telephone: (03) 9214 5046
Website: www.swin.edu.au/fbe

Faculty of Design
Telephone: (03) 9214 6755
Website: www.swin.edu.au/design

Faculty of Engineering and Industrial Sciences
Telephone: (03) 9214 8372
Website: www.swin.edu.au/engineering

Faculty of Information and Communication Technologies
Telephone: (03) 9214 5505
Website: www.swin.edu.au/ict

Faculty of Life and Social Sciences
Telephone: (03) 9214 8859
Website: www.swin.edu.au/iss

Higher Education Division (Lilydale)
Telephone: (03) 9215 7000
Website: www.lilydale.swinburne.edu.au

Special Entry Access Schemes (SEAS)
Applicants in the following categories may apply to Swinburne for entry under SEAS. 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.

Access and Equity

Category 3: Recognition as an Indigenous Australian
Applicants applying under this category must firstly complete a VTAC application. In addition, all applicants must complete Section 2: Category 3 of the SEAS access and equity application and may also wish to include information under Section 2: Category 5 and Category 6. For further information visit the VTAC website: www.vtac.edu.au/forms/equityform.html, or contact the Swinburne Manager of Indigenous Programs on telephone: (03) 9214 5179.

Year 12 Chronic Circumstances
This scheme is aimed at assisting those current Year 12 students who have experienced circumstances that can be demonstrated to have had an adverse impact on the final year of their secondary school performance. Swinburne will take into account the information provided in the application when ranking current Year 12 students for selection provided the applicant meets the criteria outlined on the SEAS Year 12 Chronic Circumstances Application and in the Table of Circumstances, Evidence and Evidence Providers on page 9 of the application.

Applications can be made via the VTAC website: www.vtac.edu.au/forms/cy12chronic_form.html.

To view Swinburne’s Chronic Circumstances Policy Statement please go to: www.swin.edu.au/corporate/registrar/Chronic_Circumstances_Policy_Statement.htm

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 in advance by Swinburne. For further information visit: www.swin.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 faculty.

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 faculty/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 unit of study must lodge their form before the specified census date for that unit of study.

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 enrolment/re-enrolment on an Enrolment Advice and accompanying Direct Deposit Form.

General Service Fee
All students are required to pay the General Service Fee (GSF) as a contribution towards a range of services provided by Swinburne University of Technology.
These services are provided by the university, Swinburne Student Union or the Sports Association, depending on the type of service. The GSF is itemised separately in the account rendered to students at enrolment/re-enrolment.

Commonwealth Supported Students
The majority of domestic undergraduate students at Swinburne will be in a Commonwealth Supported Place (CSP). Domestic students are 2005, first enrolling Australian citizens, New Zealand citizens or holders of a permanent humanitarian visa. All other students are international students. Returning ‘pre-2005’ domestic students are Australian citizens, New Zealand citizens or holders of a permanent residency visa.

Higher Education Loan Program (HELP)
Under Federal Government education reforms, to take effect on 1 January 2005, a suite of new Higher Education Loan Programs (HELP) have been introduced to assist students. The reforms have resulted in changes to the Higher Education Contribution Scheme (HECS) and the Postgraduate Education Loan Scheme (PELS) and provide some support for full-fee paying undergraduate students. From 1 January 2005, the following loan programs will be available to eligible students: HECS-HELP, FEE-HELP and OS-HELP.

Student Contribution Amount
The student contribution amount is a fee charged by the Federal Government as a contribution towards the education of all students enrolled in the higher Education Sector, except for the following:
- Students paying fees as an international student.
- Students paying fees to the university for an undergraduate fee paying course.
- Students fully sponsored under a foreign aid program.
- Students paying fees for a non-award program.
- Students paying fees as an international student.
- Students who are awarded and continue to hold a Swinburne Foundation Scholarship or Swinburne Vice Chancellors Scholarship.

For information on student contribution amount refer to the booklet Information for Commonwealth Supported Students 2005 or visit: www.goingtouni.gov.au or www.swinburne.edu.au/fees

HECS-HELP
HECS-HELP is a loan that enables eligible students in a Commonwealth Supported Place (CSP) to defer payment of their student contributions until their income reaches a certain repayment threshold. HECS-HELP will commence from 1 January 2005. Note that for 2005 first enrolling students only Australian citizens and holders of permanent humanitarian visas are entitled to HECS-HELP assistance. Further information can be found at: www.goingtouni.gov.au or Information for Commonwealth Supported Students 2005 booklet.

FEE-HELP
Full-fee paying students pay the full tuition fee for their course without a subsidy from the Australian Government and occupy a full fee paying place. Eligible students who are not Commonwealth supported and are full fee paying students may be eligible for FEE-HELP.
FEE-HELP is a loan to assist eligible full fee paying students to pay their tuition fees. FEE-HELP can cover all or part of a student’s tuition fees, up to a lifetime limit of $50,000. A loan fee of 20% applies to FEE-HELP loans for undergraduate courses of study. If a student is entitled to FEE-HELP, the Commonwealth will lend the amount of any tuition fee for the unit of study that has not been paid at the end of the census date for the unit.
Further information can be found at www.goingtouni.gov.au or by reading the FEE-HELP Information 2005 booklet.

OS-HELP
Commencing 1 January 2005, OS-HELP is a new loan that assists eligible students to undertake some of their study overseas. Students may receive up to $5,000 per six-month study period for one or two overseas study periods, to assist with a range of expenses such as airfares and accommodation. Students cannot receive an OS-HELP loan for the first or last year (equivalent full-time) of their course of study. At the time of publication, this provision means that no student will be eligible in 2005 unless there is an amendment to the HESA legislation.

Further information can be found at the Education Abroad website: www.swinburne.edu.au/edadroad, or www.goingtouni.gov.au or the booklet Information for Commonwealth Supported Students 2005.

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 faculty.

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/ili/

The student contribution amount for IBL has been set at $3000 per year, $1500 per semester from the commencement of Semester 2, 2005.

Maths & Stats Help Centre
The Maths and Statistics Help Centre is available to 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 help students individually or in groups. The centre is open Monday to Friday and is located in EN614, 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 a 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/register/credit/

Note that 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 2005 scholarships recognise excellence in areas such as academic achievement, community service and leadership. Swinburne also believes in assisting its students to fulfil 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 faculty and further details can be found at the faculty/ department websites or by contacting them directly. Further information can be accessed on the web at: www.swinburne.edu.au/edu/scholarships/

Commonwealth Learning Scholarships (CLS)
The Commonwealth Learning Scholarships (CLS) program is a new Federal Government initiative to assist rural and regional, low income and indigenous students who are Australian citizens or holders of Australian permanent humanitarian visas, with costs associated with higher education.

There are two types of scholarships:
- Commonwealth Education Costs Scholarships (CECS) for educational costs, and
- Commonwealth Accommodation Scholarships (CAS) for accommodation costs.
Both are merit based, non-repayable and target students from low-income backgrounds. Special consideration will be given to Indigenous students. In some cases, a student may be eligible to hold both types of scholarships. The CAS are valued at $4,000 per year for up to four years, and the CECS are valued at $2,000 per year for up to four years. Students are required to maintain their eligibility to continue to receive the payments.

**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/pdp/files/rlinf.htm

**Single Subject/Cross Institutional Study**

Enrolment in a single subject is available to:

- Students who are not enrolled in an award course offered by Swinburne.
- Students who have already completed enough credit points towards a degree but wish to take additional units of study.

Cross-Institutional study is available to:

- Higher Education students enrolled for courses of study at Swinburne (the ‘home’ university) who may wish to enrol in a unit/s of study at another Australian university (the ‘host’ university), and
- Students enrolled for courses at another Australian university (the ‘home’ university) who may wish to enrol in a unit/s of study at Swinburne (the ‘host’ university).

Students must seek approval for cross-institutional study by submitting an application form to the awarding division/faculty.

Note that changes to legislation means that there have been changes to the way first enrolling students pay for any cross-institutional study. Consult your faculty for further information.

Further information and application/enrolment forms are available from: www.swinburne.edu.au/corporate/registrar/ind3.htm

**Student Information Centres**

The Student Information Centres provide information and procedural advice on admissions, examinations and awards. Other functions include processing cashingering, 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 30 minutes earlier.
- The offices are closed on public holidays.

**Croydon campus**

Room A133, 12-50 Norton Road
Telephone: (03) 9726 1540/1600/1762/1588/1732

**Hawthorn campus**

UN103, Ethel Hall
Cnr J ohn Street and Burwood Road
Telephone: 1300 368 777

**Lilydale campus**

Room LA102, J Melba Avenue
Telephone: (03) 9215 7034/7101

**Prahran campus**

2nd Floor, Building PK, St J ohn Street
Telephone: (03) 9214 6898/6793/6744/6761

**Wantirna campus**

Room 165, 369 Stud Road
Telephone: (03) 9210 1160/1123/1271/1274/1275/1163

**Summer Semester**

Swinburne students receive full credit toward their degree program for all successfully completed relevant Summer Semester units of study provided the units of study completed fulfill degree requirements. Swinburne students must seek appropriate approval if they wish to study Summer Semester units of study at another Swinburne Division or at another university. Visiting students must receive approval from their home institution to transfer credits prior to enrolling for Summer Semester units of study.

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.

The Summer Semester program, including details of the units of study available, enrolment details, availability of places, costs and fee policy and application/enrolment form will normally be made available by September each year. 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.
Faculty of Business and Enterprise

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

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

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

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

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

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

A055 Bachelor of Business

The Bachelor of Business equips students with a diverse range of theoretical knowledge and practical skills to prepare them for the demands of tomorrow’s business world. Key features of this degree are the ability to integrate a wide range of business, information technology, arts and social science 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.

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

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

Aims & Objectives

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

Campus

Hawthorn

Career opportunities

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

Professional recognition

The following professional recognition applies to students 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.

- HIT1025 Introduction to Information Systems (core)
- HIT1031 Introduction to Software Engineering
- HIT1091 Web Development
- HIT1109 Introduction to Programming
- HIT2016 Database 1
- HIT2110 Programming in V8.NET
- HIT3017 Database 2
- HIT3034 Information Systems Project
- HIT3044 Professional Issues in Information Technology
- HIT3049 Systems Analysis and Modelling
- HIT3185 Data Communications and Networks
Students should contact the ACS directly regarding current membership requirements and recognition of exemptions based on studies undertaken outside Australia.

**Australian Human Resources Institute (AHRI)**

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

- **HBB220** Organisation Behaviour and Change
- **HBB222** Organisation Design and Technology
- **HBB225** Human Resource Management in Contemporary Organisations
- **HBB226** Strategic Human Resource Management
- **HBB322** International Human Resource Management
- **HBB324** Managing Workplace Relations
- **HBB325** Human Resource Management and Entrepreneurship
- **HBB330** Leadership and Organisation Dynamics

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

To be eligible for associate membership of the CPA or 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
- **HIT1025** 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

**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. An elective is a subject that is not part of the core, a major or minor.

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

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

The combinations of majors and minors possible are:

- Option 1 - 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/minors from other faculties or from other universities may be taken subject to approval by the Faculty of Business and Enterprise Academic Committee.

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 - Language major**

Beginners Stream consists of the following seven subjects: HAA181, HAA182, HAA119, HAA281, 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.

**Italian - minor**

Beginners Stream Italian consists of the following five subjects: HAA181, HAA182, HAA119, HAA281 or HAA283, and HAA381 or HBB343.

Advanced Stream Italian consists of the following five subjects. HAA184, HAA185, HAA119, HAA284, plus one of HAA285 or HAA286, HAA377, plus one of HAA387 or HAA388.

**Japanese - Language major**

Beginners Stream consists of the following eight subjects: HAJ107, HAJ108, HAJ109, HAJ215, HAJ217, HAJ238, HAJ318 & HAJ319 or HBJ341.

Advanced Stream consists of the following eight subjects: HAJ131, HAJ132, HAJ133, HAJ231, HAJ232, HAJ233, HAJ234 & HAJ331.

**Japanese - minor**

Beginners Stream consists of the following six subjects: HAJ107, HAJ108, HAJ109, HAJ215, HAJ217, plus HAJ218 or HAJ202. Advanced Stream consists of the following six subjects: HAJ131, HAJ132, HAJ133, HAJ231, HAJ232, plus HAJ233 or HAJ202.

**Psychology**

A minor in Psychology consists of HAY100, HAY101, HAY206, HMA278, HMA279 and HAY307 or HAY321. The major in Psychology consists of seven Psychology subjects with at least two at Stage 3.

Note: This major does not fulfil Australian Psychological Society (APS) requirements. The approved APS three year program requires completion of the ten Psychology 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.

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 HBM 222 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 HBSG200 New Venture Development and Management will not normally be available for students enrolled in the Bachelor of Business.

• 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 Faculty of Business and Enterprise 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 in Business

Students enrolled in the Bachelor of Business who have completed an approved Advanced Diploma or Diploma in Business or equivalent must complete all the normal requirements for the course except they are only required to complete four of the seven business core subjects (which may include matched subject credits). However, all business core subjects required as prerequisite for later Stage 3 subjects selected for study must be completed.

The seven business core subjects are:

HBC110 Accounting for Success (A)
HBE110 Microeconomics (A)
HBM110 Organisation and Management (A)
HBL111 Law in Global Business (A)
HBM 110 The Marketing Concept
HIT1025 Introduction to Information Systems (A)
HM B110 Quantitative Analysis A (A), Or
HM B111 Quantitative Analysis B (A)
(A) Mandatory subjects for professional recognition by CPA Australia or ICAA.

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

Note: Only available to Australian and New Zealand citizens or holders of an Australian permanent resident visa.

Business 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#
• 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

The following majors/minors are available from Arts:

• Australian Studies
• Cultural Studies
• Electronic Society
• Italian
• Japanese
• Literature
• Media Studies
• Philosophy and Cultural Inquiry
• Politics
• Psychology
• Sociology

Key features of the Business specific major streams are described in the Business Specialisations section.

Entry requirements

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

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).

2004 Final Clearly-In ENTER: 80.80

Advanced Diploma holders: a minimum requirement of Credit Grade average 65% with no fails in the final year. In the first instance preference will be given to Advanced Diploma holders who have a Distinction Grade average (at least 75% or above) with no fail grades in the final year. Followed by Advanced Diploma holders who have a Grade average midway between Credit and Distinction (at least 70% or above) with no fail grades in the final year. Followed by applicants who have completed the equivalent of at least three full-time semesters towards
the Advanced Diploma who have a Distinction Grade average (at least 75% or above) without fail grades. Followed by Advanced Diploma holders who have a Credit Grade average (at least 65% or above) without fail grades in the final year. Diploma holders will only be considered for selection if a minimum of 50% of grades achieved are Distinctions (75% or above), with no fail, and places are available.

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

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

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

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

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

Business Specialisations

Accounting – Major/Minor

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

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

At 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

( ) Mandatory accounting subjects for professional recognition by CPA Australia or ICAA: HBE110, HBN110, HBL111, HIT1025, HM8110 or HM8111, HBE220, HBL220, and HBL221.

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 HBS341 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:

HAI102 Introduction to Japan - A Cultural Overview
HAI107 Introductory Japanese 1A (or other Asian language subject)
HAI202 Communication in Japanese
HBI342 International Investment and Taxation
HBI344 Work Experience in Japan
HBI391 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

**Stage 3**

- HBC321 Taxation Issues and Planning (A)
- HBI342 International Investment and Taxation
- HBL331 International Business Law
- HBL333 Finance Law

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

**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 Microeconomics and three post-core subjects, at least one of which is at Stage 3.

**Stage 1 (core subject)**

- HBE110 Microeconomics (A)

**Stage 2**

- HBE220 Microeconomics (A)

And three from the following:

- HBE228 Banking and Financial Markets
- HBI231 Foundations of International Business
- HBE333 Financial Institutions and Monetary Policy
- HBE335 International Finance

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

**eMarketing – Minor**

The Internet is revolutionising business conduct: the study and practice of marketing is changing rapidly, due to the commercialisation of the World Wide Web. Issues addressed in e-commerce 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 (SM Es), 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**

- HBC270 eBusiness
- HBM371 Customer Relationship Management
- HBM272 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 country of choice. Particular emphasis in the minor is placed on Italy, the sixth

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 HB192 European Union - Business Context and three post-core subjects from the subjects listed.

Course Subjects
Mandatory subject:
HB192 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
HB128 The European Union
HB342 International Investment and Taxation
HB343 International Business in the Italian Context
HB389 Work Experience in Europe
HB390 European Union Study Tour

Finance – Major/Minor

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

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

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

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

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

Stage 3
HBC339 Financial Risk Management
HBE333 Financial Institutions and Monetary Policy

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:

1. Prepare students for a range of human resource management and management roles in business.
2. 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.
3. Develop students’ capacity to reflect upon and understand their own and others’ behaviour.
4. 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. Many students will wish to take HRM/OB studies without a career in HRM in mind. Such a major/minor provides an excellent insight into human behaviour in organisations and the management of people, and would combine well with any other vocational major. All business professionals ultimately work in or with organisations and with people.

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

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

Structure
A major in HRM/OB consists of six post-core subjects from the following list, at least two of which must be at Stage 3. A minor in HRM/OB consists of four post-core subjects, at least one of which must be at Stage 3.

Stage 1 (core subject)
HBB110 Organisation and Management

Stage 2
HBB220 Organisation Behaviour and Change
HBB222 Organisation Design and Technology
HBB225 Human Resource Management in Contemporary Organisations
HBB226 Strategic Human Resource Management

Stage 3
HBB323 International Human Resource Management and Diversity
HBB324 Managing Workplace Relations
HBB325 Human Resource Management and Entrepreneurship
HBB330 Leadership and Organisation Dynamics
Information 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 vitally important 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)
- HIT1031 Introduction to Software Engineering (C)
- HIT1051 Software Development 1 (JAVA) (C)
- HIT1091 Web Development (C)
- HIT1109 Introduction to Programming (C)

**Stage 2**

- HIT2005 IT Infrastructure (C)
- HIT2006 Business Computing (C)
- HIT2013 COBOL Programming (C)
- HIT2016 Database 1 (C)
- HIT2024 Introduction to Human Computer Interaction (C)
- HIT2092 Advanced Web Technologies (C)
- HIT2110 Programming in VB.NET (C)

**Stage 3**

- HIT3007 Business Computing Applications (C)
- HIT3017 Database 2 (C)
- HIT3018 Database 3 (C)
- HIT3034 Information Systems Project (C)
- HIT3044 Professional Issues in Information Technology (C)
- HIT3049 Systems Analysis and Modelling (C)
- HIT3077 Introduction to ERP Systems (C)
- HIT3078 Knowledge Management (C)
- HIT3084 eCommerce: A Business Perspective (C)
- HIT3136 Information Technology: A Critical Review (C)
- HIT3185 Data Communications and Network (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: HBI231, HBI340 and HBL331, at least one of HBI341, HBI392 and HBI394, and remaining subjects to be selected from HBE335, HBM323, HBM342, 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 remaining subject to be selected from HBE335, HBM323, HBM342, HBM223 and HBM339.

**Stage 1 (core subjects)**

The following business core subjects are pre-requisites to the mandatory International Business 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
- HBH323 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 M 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; HBB22; HBM 341; one of the following: HBH220, HBH222, HBH225; or HBH226; and one of the following: HBH323, HBH325, HBH330, HBM 330, HBM 331.

A Management minor is not offered.

Students completing both a Management and Marketing major must complete HBM 222 and HBM 341 as part of the Management major and complete additional subjects towards the Marketing major. Refer to the Marketing section for Marketing major requirements.

Stage 1 (core subjects)
The following business core subjects are pre-requisites for the Management subjects:

- HBC110 Accounting for Success
- HBB110 Organisation and Management
- HBM 110 The Marketing Concept

Mandatory subjects:
- HBC222 Management Decision Making
- HBC224 Financial Management
- HBM 222 Marketing Planning

One of:
- HBH220 Organisation Behaviour and Change
- HBH222 Organisation Design and Technology
- HBH225 Human Resource Management in Contemporary Organisations
- HBH226 Strategic Human Resource Management

One of:
- HBH323 International Human Resource Management and Diversity
- HBH325 Human Resource Management and Entrepreneurship
- HBH330 Leadership and Organisation Dynamics
- HBM 330 Marketing Innovation Management
- HBM 331 Services Marketing and Management
- HBM 341 Business Strategy (mandatory capstone subject taken in final semester of study)

Manufacturing Management – Major/Minor
The manufacturing and processing of consumer and industrial products of food, beverages, automobiles, metals, plastics and minerals is an important part of the Australian economy. Following the deregulation of the early 1980’s, it is fair to say that today’s Australian companies in the dynamic manufacturing and processing industries are at, or close to, world class competitive standards. These industries are large employers: graduates with a major in Manufacturing Management are well positioned for a wide range of employment opportunities in operations management, human resource management, marketing, financial analysis, information systems, management accounting or technology management and innovation.

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

The Foundation for Australian Manufacturing Education (FAME) sponsors studies in Manufacturing Management. Business Victoria, Vitsy 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, in combination 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.

Stage 1 (core subjects)
The following business core subject is a pre-requisite for the mandatory Manufacturing Management subjects:

- HBM 110 Organisations & Management

Mandatory subjects:

- HBM 221 Organisation Design & Technology
- HBM 330 Marketing Innovation Management
- HBM 331 Quality Management in Manufacturing
- HBM 332 Managing Technology and Innovation

Plus two subjects from one of the following groups of subjects to complete a major:

Accounting
- HBB222 Management Decision Making
- HBB223 Analysis for Competitive Advantage
- HBB224 Financial Management

Business Law
- HBL220 Contract Law
- HBL222 Marketing Law

Human Resource Management/Organisation Behaviour
- HBB225 Human Resource Management in Contemporary Organisations
- HBB226 Human Resource Management and Entrepreneurship

One of:
- HBM 330 Marketing Innovation Management

Science, Engineering and Design
Subjects approved by Head, Faculty of Business and Enterprise.

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: HBM 220; HBM 222; HBM 223; HBQ229; either HBM 330 or HBM 331; and HBM 341.

To complete a Marketing minor with a Marketing major four of the following subjects must be completed, with at least one at Stage 3: HBL222; either HBM 271 or HBM 272; either HBM 330 or HBM 331; HBM 333; HBM 339.

To complete a Marketing minor without a Marketing major four of the following post-core subjects must be completed, with at least one at Stage 3: HBM 220; HBM 222; HBM 223; HBQ229; either HBM 330 or HBM 331; HBM 333; HBM 341.

Students completing both a Marketing and Management major must complete HBM 330 and HBM 331 and one other subject from the Marketing minor as HBM 222 and HBM 341 must be completed towards the Management major. Refer to the Management section for Management major requirements.

Stage 1 (core subjects)
- HBM 110 The Marketing Concept
- HMB 110 Quantitative Analysis A, OR
- HM 8111 Quantitative Analysis B

Stage 2
- HB222 Marketing Law
- HBM 220 Market Behaviour (highly recommended as first subject studied in Marketing major or minor post-core)
- HBM 222 Marketing Planning
- HBM 223 Transnational Marketing
- HBM 271 Customer Relationship Management
- HBM 272 eMarketing
- HBQ229 Marketing Research

Stage 3
- HBM 330 Marketing Innovation Management
- HBM 331 Services Marketing and Management
- HBM 333 Communications Strategy
- HBM 339 Transnational Business Practice
- HBM 341 Business Strategy (capstone subject)

A042 Bachelor of Business in 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. The program prepares students for a career in business, whether domestic or international, recognising that the business world is a global one as we step into the 21st Century. It also produces educationally rounded people, capable of taking their place in their chosen profession and in the community in which they live. Swinburne takes particular pride in producing business graduates who are employment-ready, of immediate practical relevance to their employers and capable of excellent career development from a strong commencing base.

Along with this knowledge and skills development, the program deliberately takes on an entrepreneurial ‘flavour’ throughout its entirety. Graduates will have the basic capacity, attributes and ‘mindset’ to consider creating their own enterprises from the time of graduation, or at some future point in their career. They will therefore be well prepared to either seek professional entry as an employee in their chosen field of specialisation or to grasp innovative business opportunities to employ themselves and others.

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

Campus
Hawthorn

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

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

Course duration
Three years full-time or six years part-time. An optional 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 and elective(s).

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 core, a major or minor. Refer to majors and minors listed under the Business Specialisations section.

All eighteen subjects listed below must be completed within this structure and an additional six subjects are required to make up either another 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.

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

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

Stage 1 (Business Core Subjects)
- HBC110 Accounting for Success
- HBE110 Microeconomics
- HBH110 Organisation and Management
- HBL111 Law in Global Business
- HBM 110 The Marketing Concept
- HIT1025 Introduction to Information Systems
- HM 8110 Quantitative Analysis A, OR
- HM 8111 Quantitative Analysis B

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Stage 2
HBC220  Financial Information Systems
HBC221  Corporate Accounting
HBC222  Management Decision Making
HBC223  Analysis for Competitive Advantage
HBC224  Financial Management
HBC225  Auditing and Assurance
HBE220  Macroeconomics
HBL220  Contract Law
HBL221  Company Law

Stage 3
HBC330  Current Issues in Accounting
HBC331  Taxation Issues and Planning

Six additional 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.
2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).
2004 Final Clearly-In ENTER: 80.80
Refer to the A055 Bachelor of Business for further entry options.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34181 (CSP), 34182 (Fee), 34183 (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

A043 Bachelor of Business in 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. The program prepares students for a career in business, whether domestic or international, recognising that the business world is a global one as we step into the 21st Century. It also produces educationally rounded people, capable of taking their places in their chosen professions and in the community.

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

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

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

Campus
Hawthorn

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

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

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

Structure
To complete the requirements of this course students must complete twenty-four subjects comprising the seven business core subjects, eight Human Resource Management subjects and nine additional subjects that may be taken as a major and three electives, two minors and one elective, or one minor and five 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. An elective is a subject that is not part of the core, a major or minor. Refer to majors and minors listed under the Business Specialisations section.

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

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

Stage 1 (Business Core Subjects)
HBC110  Accounting for Success
HBE110  Macroeconomics
HBM110  Organisation and Management
HBL111  Law in Global Business
HBM110  The Marketing Concept
HIT1025  Introduction to Information Systems
HM8110  Quantitative Analysis A, OR
HM8111  Quantitative Analysis B

Stage 2
HBH220  Organisation Behaviour and Change
HBH222  Organisation Design and Technology
HBH225  Human Resource Management in Contemporary Organisations
HBH226  Strategic Human Resource Management

Stage 3
HBH323  International Human Resource Management and Diversity
HBH324  Managing Workplace Relations
HBH325  Human Resource Management and Entrepreneurship
HBH330  Leadership and Organisation Dynamics

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.
2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).
2004 Final Clearly-In ENTER: 80.80
Refer to the A055 Bachelor of Business for further entry options.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34411 (CSP), 34412 (Fee), 34413 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au

NOTE: Application is to the A055 Bachelor of Business. Successful applicants will be requested to advise of their preferred course at the time of enrolment.

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu
A045  Bachelor of Business in International Business

The Bachelor of Business (International Business) is a vocationally oriented course that is designed to assist in the intellectual, social and personal development of the student as preparation for entrance into a range of specialist and generalist business professions. The program prepares students for a career in business, recognising that the business world is a global one as we step into the 21st Century. The Bachelor of Business (International Business) is a response to the pressures and opportunities globalisation is creating for Australian business. Australian business graduates must be equipped to operate in a global marketplace.

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

Aims & Objectives

Refer to A055 Bachelor of Business entry in this handbook.

Campus

Hawthorn

Career opportunities

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

Professional recognition

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

Course duration

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

Structure

To complete the requirements of this course students must complete twenty-four subjects comprising seven business core subjects, a major in International Business, a minor in either Asian Business or European Business, and an overseas study component, and seven additional subjects (which may comprise either another major and one elective, another 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. An elective is a subject that is not part of the core, a major or minor. Refer to majors and minors listed under the Business Specialisations section.

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

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

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:

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAJ 302</td>
<td>Work Experience in Japan</td>
</tr>
<tr>
<td>HBI389</td>
<td>Work Experience in Europe</td>
</tr>
<tr>
<td>HBI390</td>
<td>European Union Study Tour</td>
</tr>
<tr>
<td>HBI391</td>
<td>Pacific Rim Business Study Tour</td>
</tr>
<tr>
<td>HBI390</td>
<td>Industry Placement (completed overseas will also be accepted to fulfil the requirements of the overseas study component).</td>
</tr>
</tbody>
</table>

Business Core Subjects

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBC110</td>
<td>Accounting for Success</td>
</tr>
<tr>
<td>HBE110</td>
<td>Microeconomics</td>
</tr>
<tr>
<td>HBM110</td>
<td>Organisation and Management</td>
</tr>
<tr>
<td>HBL111</td>
<td>Law in Global Business</td>
</tr>
<tr>
<td>HBM 110</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

Mandatory Subjects:

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBJ31</td>
<td>Foundations of International Business</td>
</tr>
<tr>
<td>HBJ340</td>
<td>International Trade Strategies</td>
</tr>
<tr>
<td>HBJ331</td>
<td>International Business Law</td>
</tr>
</tbody>
</table>

At least one of:

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

And remaining subjects from:

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBE335</td>
<td>International Finance</td>
</tr>
<tr>
<td>HBJ323</td>
<td>International Human Resource Management and Diversity</td>
</tr>
<tr>
<td>HBJ342</td>
<td>International Investment and Taxation</td>
</tr>
<tr>
<td>HBJ223</td>
<td>Transnational Marketing</td>
</tr>
<tr>
<td>HBJ339</td>
<td>Transnational Business Practices</td>
</tr>
</tbody>
</table>

Asian Business Minor

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

And three from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAJ 102</td>
<td>Introduction to Japan: A Cultural Overview</td>
</tr>
<tr>
<td>HAJ 107</td>
<td>Introductory Japanese 1A (or other Asian language subject)</td>
</tr>
<tr>
<td>HAJ 202</td>
<td>Communication in Japanese</td>
</tr>
<tr>
<td>HBJ344</td>
<td>Work Experience in Japan</td>
</tr>
<tr>
<td>HBJ342</td>
<td>International Investment and Taxation</td>
</tr>
<tr>
<td>HBJ391</td>
<td>Pacific Rim Business Study Tour</td>
</tr>
<tr>
<td>HBJ339</td>
<td>Transnational Business Practices</td>
</tr>
</tbody>
</table>

European Business Minor

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

And three from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HJA119</td>
<td>Post-War Italy</td>
</tr>
<tr>
<td>HJA181</td>
<td>Italy and its Language 1 (or other European language subject)</td>
</tr>
<tr>
<td>HJA289</td>
<td>Comparative European Politics</td>
</tr>
<tr>
<td>HBJ343</td>
<td>International Business - the Italian Context</td>
</tr>
<tr>
<td>HBJ288</td>
<td>The European Union</td>
</tr>
<tr>
<td>HBJ342</td>
<td>International Investment and Taxation</td>
</tr>
<tr>
<td>HBJ389</td>
<td>Work Experience in Europe</td>
</tr>
<tr>
<td>HBJ390</td>
<td>European Union Study Tour</td>
</tr>
</tbody>
</table>

International Business Minor

At least two of:

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBJ31</td>
<td>Foundations of International Business</td>
</tr>
<tr>
<td>HBJ340</td>
<td>International Trade Strategies</td>
</tr>
<tr>
<td>HBJ331</td>
<td>International Business Law</td>
</tr>
</tbody>
</table>

At least one of:

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

And remaining subjects from:

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBE335</td>
<td>International Finance</td>
</tr>
</tbody>
</table>
To complete the requirements of this course students must complete twenty-four subjects. Industry-Based Learning (IBL) is also available.

### 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 a major and minor in marketing, and seven additional subjects that 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. An elective is a subject that is not part of the core, a major or minor. Refer to majors and minors listed under the Business Specialisations 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 Faculty 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
- **HITI025** Introduction to Information Systems
- **HM B110** Quantitative Analysis A, OR
- **HM B111** Quantitative Analysis B

### Stage 2

- **HBM220** Market Behaviour (highly recommended as first subject studied in marketing post-core)
- **HBM222** Marketing Planning
- **HBM223** Transnational Marketing
- **HBO229** 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.

2006 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any). 2004 Final Clearly-In ENTER: 80.80

Refer to the A055 Bachelor of Business for further entry options.

### Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34411 (CSP), 34412 (Fee), 34413 (Int. Fee)

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

**NOTE:** Application is to the A055 Bachelor of Business. Successful applicants will be requested to advise of their preferred course at the time of enrolment.

### Campus

Hawthorn

### Career opportunities

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

### Professional recognition

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

### Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34411 (CSP), 34412 (Fee), 34413 (Int. Fee)

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

**NOTE:** Application is to the A055 Bachelor of Business. Successful applicants will be requested to advise of their preferred course at the time of enrolment.

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 in 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 program prepares students for a career in business, whether domestic or international, recognising that the business world is a global one as we step into the 21st Century. It also produces educationally rounded people, capable of taking their place in their chosen profession and their community.

The ability to communicate, both verbally and in documents, in the language of the customer is seen as a significant advantage for Australian business people trying to break into competitive international markets. Swinburne particularly takes pride in producing business graduates who are employment-ready, of immediate practical relevance to their employers and capable of excellent career development from a strong commencing base.

Along with knowledge and skills development, the program deliberately takes on an entrepreneurial ‘flavour’ throughout its entirety. Graduates will have the basic capacity, attributes and ‘mindset’ to consider creating their own enterprises from the time of graduation, or at some future point in their career. They will therefore be well prepared to either seek professional entry as an employee in their chosen field of specialisation or grasp innovative business opportunities to employ themselves or others.

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

Aims & Objectives

Refer to A055 Bachelor of Business entry in this handbook.

Campus

Hawthorn

Career opportunities

Graduates of this double degree generally enjoy opportunities in Europe, with particular advantages in organisations where there are either joint country business ventures or offices located in Europe or Italy.

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

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 Faculty of Business and Enterprise by approval. For full details of Business and Arts specialisations pertaining to this course refer to the Bachelor of Business and Bachelor of Arts 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 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 Faculty Administration Manager prior to enrolment.

Stage 3 subjects-Honours Stream Option

Each semester a limited number of Stage 3 subjects are offered by the Faculty of Business and Enterprise 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 Japenese 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. Accounting - HBC, Marketing - HBM subject code prefix).
- A maximum of twelve Stage 1 subjects (e.g. HBM 110 - 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. HBM 330 - 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 HBM 222 may be counted towards either a M anagement or M arking 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.
- HBJ300 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
HAA119 Post War Italy

Cultural subjects

Stage 1

Advanced stream

Arts - Language subjects

- Australian Studies
- Cultural Studies
- Electronic Society
- Italian Studies
- Japanese
- Literature
- Media Studies
- Philosophy & Cultural Inquiry
- Politics
- Sociology

Business 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

- HAA181 Italy and its Language 1
- HAA182 Italy 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

HBI288 European Union
HBI343 International Business in the Italian Context
HBI392 European Union Business Context

Recommended electives

HBI389 Work Experience in Europe
HBI390 European Union Study Tour

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

Language and business 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.

2006 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any). Bonus points will be given for VCE LOTE.

2004 Final Clearly-In ENTER: 80,30

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

Refer to the A055 Bachelor of Business for further entry options.

Application procedure

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

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

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

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

A057 Bachelor of Business / Bachelor of Arts in Japanese

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

The ability to communicate, both verbally and in documents, in the language of the customer is seen as a significant advantage for Australian business people trying to break into competitive international markets. Swinburne takes particular pride in producing business graduates who are employment-ready, of immediate practical relevance to their employers and capable of excellent career development from a strong commencing base.

Along with knowledge and skills development, the program deliberately takes on an entrepreneurial ‘flavour’ throughout its entirety. Graduates will have the basic capacity, attributes and ‘mindset’ to consider creating their own enterprises from the time of graduation, or at some future point in their career. They will therefore be well prepared to either seek professional entry as an employee in their chosen field of specialisation or grasp innovative business opportunities to employ themselves or others.

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

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 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 specialisation subjects (four mandatory Japanese language 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 Faculty of Business and Enterprise by approval. For full details of Business and Arts specialisations pertaining to this course refer to the Bachelor of Business and Bachelor of Arts specialisation lists below.

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 Faculty Administration Manager prior to enrolment.

Stage 3 Subjects- Honours Stream Option
Each semester a limited number of Stage 3 subjects are offered by the Faculty of Business and Enterprise 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. HBM 110 - 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. HBM 330 - 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 HBM 222 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.
  - 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
- 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
- Japanese
- Literature
- Media Studies
- Philosophy & Cultural Inquiry
- Politics
- Psychology
- Sociology

Business Core subjects
The seven business core subjects are:
HBC110 Accounting for Success
HBE110 Microeconomics
HBM110 Organisation and Management
HBL111 Law in Global Business
HBM 110 The Marketing Concept
Entry requirements

Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification. 2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any). Bonus points will be given for VCE LOTE.

Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34801 (CSP), 34802 (Fee), 34803 (Int. Fee)

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

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 in International Business / Bachelor of Arts in 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 program prepares students for a career in business, whether domestic or international, recognising that the business world is a global one as we step into the 21st Century; it also produces educationally rounded people, capable of taking their places in their chosen professions and in the community in which they live.

The ability to communicate, both verbally and in documents, in the language of the customer is seen as a significant advantage for Australian business people trying to break into competitive international markets. Swinburne takes particular pride in producing business graduates who are employment-ready, of immediate practical relevance to their employers and capable of excellent career development from a strong commencing base.

Along with knowledge and skills development, the program deliberately takes on an entrepreneurial ‘flavour’ throughout its entirety. Graduates will have the basic capacity, attributes and ‘mindset’ to consider creating their own enterprises from the time of graduation, or at some future point in their career. They will therefore be well prepared to either seek professional entry as an employee in their chosen field of specialisation or grasp innovative business opportunities to employ themselves or others.

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

Aims & Objectives

Refer to A055 Bachelor of Business entry in this handbook.

Campus

Hawthorn

Career opportunities

Graduates of this double degree enjoy career opportunities generally in Europe, with particular advantages in organisations where there are either joint country business ventures or offices located in Europe and Italy. In order to teach Italian, graduates must have completed the Stage 3 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.

Note: Language subjects are not normally available in the evening.

An optional and additional year of Industry-Based Learning (IBL) is also available.

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 Faculty of Business and Enterprise by approval. For
detail information on 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.
Students wishing to enrol in subjects which are not a formal part of this course
will be required to seek approval from the Faculty Administrator prior to
enrolment.
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.

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 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
  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.
• 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.

Stage 3 Subjects- Honours Stream Option
Each semester a limited number of Stage 3 subjects are offered by the Faculty of
Business and Enterprise 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.
International students should contact the International Student Unit on +61 3 9214. VTAC code: 34651 (CSP), 34652 (Fee), 34653 (Int. Fee). Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).

Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34651 (CSP), 34652 (Fee), 34653 (Int. Fee) for further information, visit the VTAC website at: www.vtac.edu.au

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

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
- HAA299 Comparative European Politics
- HB1288 European Union
- HB1343 International Business in the Italian Context
- HB1392 European Business Context

Recommended electives

- HB1389 Work Experience in Europe
- HB1390 European Union Study Tour

Students who intend, on graduating, to teach Italian either at primary or secondary level or who do not wish to preclude this possibility, should note that the exit point required in the Italian Language stream is the third-year Advanced level. To achieve this, students are advised to transfer to the Advanced stream by enrolling in third year Advanced 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. 2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any). Bonus points will be given for VCE LOTE. 2004 Final Clearly-In ENTER: 80.30

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

Refer to the A055 Bachelor of Business for further entry options.

A0571 Bachelor of Business in International Business / Bachelor of Arts in Japanese

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

The ability to communicate, both verbally and in documents, in the language of the customer is seen as a significant advantage for Australian business people trying to break into competitive international markets. Swinburne takes particular pride in producing business graduates who are employment-ready, of immediate practical relevance to their employers and capable of excellent career development from a strong commencing base.

Along with knowledge and skills development, the program deliberately takes on an entrepreneurial ‘flavour’ throughout its entirety. Graduates will have the basic capacity, attributes and ‘mindset’ to consider creating their own enterprises from the time of graduation, or at some future point in their career. They will therefore be well prepared to either seek professional entry as an employee in their chosen field of specialisation or grasp innovative business opportunities to employ themselves or others.

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

Aims & Objectives

Refer to 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. Students with studies in International Business find rewarding work in an array of institutions and firms engaged in aspects of international business.

Professional recognition

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

Course duration

Four years full-time or eight years part-time.

Note: Language subjects are not normally available in the evening. An optional and additional year of Industry-Based Learning (IBL) is also available.

Structure

To complete the requirements of this course students must complete thirty-two subjects comprising thirteen Japanese 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 Business stream or Bachelor of Business specialisations or other disciplines outside the Faculty of Business and Enterprise by approval. For full details of Business and Arts specialisations pertaining to this course refer to the Bachelor of Business and Bachelor of Arts 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 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 A057 Bachelor of Business / Bachelor of Arts (japanese) 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 Faculty 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 or work experience.

**Stage 3 Subjects-Honours Stream Option**

Each semester a limited number of Stage 3 subjects are offered by the Faculty of Business and Enterprise 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. HBM 110 - 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. HBM 330 - 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 HB1342 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.
- HB1300 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
- Japanese
- Literature
- Media Studies
- Philosophy & Cultural Inquiry
- Politics
- Sociology

**Business - Core subjects**

The seven business core subjects are:

- HBC110 Accounting for Success
- HBE110 Microeconomics
- HBM110 The Marketing Concept
- HBM111 Law in Global Business
- HIT1025 Introduction to Information Systems
- HM B110 Quantitative Analysis A, or
- HM B111 Quantitative Analysis B

**International Business Major**

- HB1231 Foundations of International Business
- HB1340 International Trade Strategies
- HB1331 International Business Law

At least one of:

- HB1341 Asia - Business Context
- HB1392 European Union - Business Context
- HB1394 The Americas

And remaining subjects from:

- HBE335 International Finance
- HB1342 International Investment and Development
- HBM223 Transnational Management
- HBM339 Transnational Business Practices

**Arts - Language subjects**

**Beginners’ stream**

**Stage 1**

- HAJ 107 Introductory Japanese 1A
- HAJ 108 Written Japanese 1B
- HAJ 109 Spoken Japanese 1B

**Stage 2**

- HAJ 215 Intermediate Japanese 2A
- HAJ 217 Written Japanese 2B
- HAJ 218 Spoken Japanese 2B
Stage 3
HAJ 318 Written Japanese 3A
HAJ 319 Spoken Japanese 3A
HAJ 323 Written Japanese 3B
HAJ 324 Spoken Japanese 3B

Advanced stream
Stage 1
HAJ 131 Advanced Japanese 1A
HAJ 132 Advanced Spoken Japanese 1B
HAJ 133 Advanced Japanese 1B

Stage 2
HAJ 231 Advanced Written Japanese 2A
HAJ 232 Advanced Spoken Japanese 2A
HAJ 233 Advanced Written Japanese 2B
HAJ 234 Advanced Spoken Japanese 2B

Stage 3
HAJ 331 Advanced Written Business Japanese
HAJ 332 Advanced Spoken Business Japanese
HAJ 333 Advanced Business Readings and Communication

Cultural subjects
HAJ 102 Introduction to Japanese - A Cultural Overview
HAJ 202 Communication in Japanese
HBID41 Asia-Business Context

Recommended electives
HAT116 Linguistics
HBID44 Work Experience in Japanese (subject to availability of placements)
HBID391 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 in the Beginners stream 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.

2006 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any). Bonus points will be given for VCE LOTE.

2004 Final Clearly-In ENTER: 80.95

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

Refer to the A055 Bachelor of Business for further entry options.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC course code: 34801 (CSP), 34802 (Fee), 34803 (Int. Fee)

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

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 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.

Campus

Hawthorn

Career opportunities

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

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/Organisatio 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 (HBO415) 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 15,000 and 20,000 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%

**Majors/Specialisation**

- 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 one of Italian or Japanese.

**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**

- **HBH410** Human Resource Management/Organisation Behaviour Honours Dissertation
- **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**

- **HBMG411** Management Advanced Reading Unit

**Manufacturing Management**

- **HBP410** Manufacturing Management Honours Dissertation
- **HBP411** Manufacturing Management Advanced Reading Unit

**Marketing**

- **HBM 410** Marketing Honours Dissertation
- **HBM 411** 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, and in their major discipling, in order to be considered by the Faculty of Business and Enterprise 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. Applicants with satisfactory academic results will be required to attend an interview as part of the selection process.

**Application procedure**

Application forms are available from the Faculty of Business and Enterprise.
Faculty of Design

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

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

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

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

Further information

Telephone: +61 3 9214 6755
Fax: +61 3 9521 2665
Email: nid-enquiry@swin.edu.au
Website: www.swinburne.edu.au/design

DCD10 Bachelor of Design in 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 educates students to be effective designers and communicators through a wide variety of visual communication based projects, together with contextual and professional studies. Through the program’s strong links with industry, graduates are well placed to seek employment in advanced areas of communication design.

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 Design, COGARDA International Council of Graphic Design Associations

Course duration

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

Structure

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

Course subjects

Stage 1

Semester 1

HDC0111 Design Communication Studio 1

One of:

HDC0112 Technology 1
HDC0122 Technology 2

Two of:

HDD001A Design Lab A: 2D Constructs
HDD001B Design Lab B: Time & Sequence
HDD001C Design Lab C: Form and Object
HDD001D Design Lab D: Design On Line

Semester 2

HDC0121 Design Communication Studio 2

One of:

HDC0112 Technology 1
HDC0122 Technology 2

Two of:

HDD001A Design Lab A: 2D Constructs
HDD001B Design Lab B: Time & Sequence
HDD001C Design Lab C: Form and Object
HDD001D Design Lab D: Design On Line

Stage 2

Semester 1

HDC0231 Design Communication Studio 3
HDC0232 Graphic Communications 3
HDC0233 Technology 3

Semester 2

HDC0241 Design Communication Studio 4
HDC0242 Research Project

One of:

HDC0243 Photography in Communication Design
HDC0244 Information Design
HDC0245 Imaging for Communication Design
HDC0246 Interactive Design

Stage 3

Semester 1

HDC0351 Design Communication Studio 5
HDC0352 Graphic Communications 5

One of:

HDC0353 Interface Design
HDC0354 Image Based Design
HDC0355 Design for Publication
HDC0356 Interpretation Design

One of:

HDC0356 Graphic Design Discourse
HDMAN356 Design and Project Management

OR

HDC0000 IBL (37.5 credit points)

One of:

HDC0356 Graphic Design Discourse
HDMAN356 Design and Project Management

Semester 2

HDC0361 Design Communication Studio 6
Semester 1
HDID121 Engineering Principles
HDID05 Product Design Communication 2
Two of:
HDID001A Design Lab A: 2D Constructs
HDID001B Design Lab B: Time & Sequence
HDID001C Design Lab C: Form and Object
HDID001D Design Lab D: Design On Line

Semester 2
HDID121 Engineering Principles 2
HDID001A Design Lab A: 2D Constructs
HDID001B Design Lab B: Time & Sequence
HDID001C Design Lab C: Form and Object
HDID001D Design Lab D: Design On Line

Stage 2

HDID006 Digital Technology 3
HDID231 Manufacturing Technology 3
HDID232 Product Design Studio 3

**Semester 2**
HDID241 Manufacturing Technology 4
HDID242 Research Project
One of:
HDD007 Furniture Design Studio
HDD008 Exhibition Design Studio

**Stage 3**

**Semester 1**
HDID351 Digital Technology 5
One of:
HDD007 Furniture Design Studio
HDD008 Exhibition Design Studio
One of:
HDMAN356 Design and Project Management
HDID352 Professional Context 5
OR
HDID000 IBL
One of:
HDID351 Digital Technology 5
HDID352 Professional Context 5
HDMAN356 Design and Project Management

**Semester 2**
HDID361 Manufacturing Technology 6
HDID362 Product Design Studio 6
One of:
HDMAN366 Managing Design
HDID363 Professional Context 6
OR
HDID000 IBL
One of:
HDMAN366 Managing Design
HDID363 Professional Context 6
HDID361 Manufacturing Technology 6

**Limkokwing Institute of Creative Technology (LICT)**

**Semester 1**
HDD007KL Furniture Design Studio
HDID351KL Digital Technology 5
HDID352KL Industrial Design Discourse 5

**Semester 2**
HDID361KL Manufacturing Technology 6
HDID363KL Industrial Design Discourse 6
HDID362KL Product Design Studio 6

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

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), Mathematics (any) and in one of Visual Communication and Design, Design and Technology, and/or Physics.

Selection mode:
CY12: ENTER and two-stage process with a middle-band of approximately 20%.
Non12: Pre-selection kit, possible interview and folio presentation.

Middle-band: A study score of at least 20 in design and technology, mathematical methods, physics or visual communication and design = an ENTER 3 points higher per study, to a maximum of 6 points.

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

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

**DINTD10 Bachelor of Design in 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 Bachelor of Design (Interior Design) 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 exemption for, the subjects below. Work expected of students outside normal timetabled hours, in keeping with related design courses, will usually be no less than one for one.

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

**Course subjects**

**Stage 1**

**Semester 1**
HDINTD111 Interior Design Communication 1
HDINTD112 Construction Technology 1
Two of:
HDD001A Design Lab A: 2D Constructs
HDD001B Design Lab B: Time & Sequence
HDD001C Design Lab C: Form and Object
HDD001D Design Lab D: Design On Line

**Semester 2**
HDINTD121 Interior Design Communication 2
HDINTD122 Construction Technology 2
Two of:
HDD001A Design Lab A: 2D Constructs
HDD001B Design Lab B: Time & Sequence
HDD001C Design Lab C: Form and Object
HDD001D Design Lab D: Design On Line

**Stage 2**

**Semester 1**
HDINTD231 Construction Technology 3
HDINTD232 Digital Technology 3
HDINTD233 Design Project 3

Semester 2
HDINTD241 Construction Technology 4
HDINTD243 Digital Technology 4
One of:
HDD007 Furniture Design Studio
HDD008 Exhibition Design Studio

Stage 3
Semester 1
HDINTD351 Construction Technology 5
One of:
HDD007 Furniture Design Studio
HDD008 Exhibition Design Studio
One of:
HDMAN356 Design and Project Management
HDINTD352 Professional Context 5
OR
HDINTD000 IBL
One of:
HDMAN356 Design and Project Management
HDINTD352 Professional Context 5

Semester 2
HDINTD361 Design Project 6
HDINTD364 Research Project
One of:
HDMAN366 Managing Design
HDINTD363 Professional Context 6
OR
HDINTD000 IBL
One of:
HDMAN366 Managing Design
HDINTD363 Professional Context 6

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

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any) and in Visual Communication and Design and/or Studio Art.

Selection mode: ENTER and two-stage process with a middle-band of approximately 20%.

Middle-band: A study score of at least 20 in design and technology, physics or studio arts = an ENTER 3 points higher per study, to a maximum 6 points.

NonY12: Selection will be based on recognition of prior learning together with written application, folio appraisal and interview.

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

DMM10 Bachelor of Design in 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 studies, 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. Work expected of students outside normal timetabled hours, in keeping with related design courses, will usually be no less than one for one.

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

Course subjects
Stage 1
Semester 1
HDMD111 Multimedia Design Technology 1
Two of:
HDD001A Design Lab A: 2D Constructs
HDD001B Design Lab B: Time & Sequence
HDD001C Design Lab C: Form and Object
HDD001D Design Lab D: Design On Line

Semester 2
HDMD121 Multimedia Design Technology 2
Two of:
HDD001A Design Lab A: 2D Constructs
HDD001B Design Lab B: Time & Sequence
HDD001C Design Lab C: Form and Object
HDD001D Design Lab D: Design On Line

Stage 2
Semester 1
HDM D231 Design Project Series 3
HDM D232 Multimedia Design Technology 3
One of:
HALM 104 Media, Literature, Film: Texts and Contexts
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.

Course duration

Three years (six semesters) full-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.

Course subjects

Stage 1

Semester 1

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

Semester 2

HFTV121 Film & Television Technology Production 2
HFTV122 Film & Television Language and Communication 2
HALM104 Media Literature Film: Texts and Contexts

Stage 2

Semester 1

HFTV231 Film & Television Project Series 1
One of:
HFTV233 Screen Techniques 1
HDM D243 Typographic Design for Screen
HALM 312 Cinema Studies

Semester 2

HFTV241 Film & Television Technology 4
HFTV242 Film & Television Project Series 2
One of:
HFTV243 Screen Techniques 2
HFTV244 Title Design
HAM 211 New Media: The Telecommunications Revolution
HBSG200 New Venture Development & Management

Stage 3

Semester 1

HFTV251 Film & Television Project Series 3
HFTV252 Film & Television Group Research Project 1
One of:
Honours Year

DCD20 Bachelor of Design (Honours)
in Communication Design

The Communication Design Honours 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 educates students to be effective designers and communicators through a wide variety of visual communication based projects, together with contextual and professional studies. Through the program's strong links with industry, graduates are well placed to seek employment in advanced areas of communication design.

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, 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.

The award of Honours is based on the average of the final two semester's marks.

85 - 100 First Class
75 - 84   Upper Second Class
65 - 74   Lower Second Class
50 - 64   Pass

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 1

HDC471 Communication Design Research 7
HDC472 Design Communication Studio 7
HDC473 Creative Strategy Projects

OR

Design Centre
HDC41PP Communication Design Professional Practice 7
HDC471 Communication Design Research 7

Semester 2

HDC481 Communication Design Research 8
HDC482 Design Communication Studio 8
HDC483 Creative Strategy Projects

OR

Design Centre
HDC481 Communication Design Research 8
HDC42PP Communication Design Professional Practice 8

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

Application forms are available from the Faculty of Design.

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

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 utilizing 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**

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**

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.

The award of Honours is based on the average of the final two semester's marks: 85 - 100 First Class / 75 - 84 Upper Second Class / 65 - 74 Lower Second Class / 50 - 64 Pass

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.

**Course subjects**

**Semester 1**

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<th>Code</th>
<th>Subject</th>
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<td>HDID471</td>
<td>Studio Practice 7</td>
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<td>HDID473</td>
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**Semester 2**

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<td>ID Professional Practice 8</td>
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<td>HDID482</td>
<td>ID Hons Research 8</td>
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</tbody>
</table>

**Entry requirements**

Successful completion of the Bachelor of Design (Industrial Design) degree.

**Application procedure**

Application forms are available from the Faculty of Design.

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

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**

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 years full-time or two years part-time (Honours)

**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.

The award of Honours is based on the average of the final two semester’s marks: 85 - 100 First Class / 75 - 84 Upper Second Class / 65 - 74 Lower Second Class / 50 - 64 Pass

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 1**

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</tbody>
</table>

**Entry requirements**

Successful completion of the Bachelor of Design (Interior Design) degree.

**Application procedure**

Application forms are available from the Faculty of Design.
DMM20 Bachelor of Design (Honours) in Multimedia Design

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
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). Honours students will spend approximately six 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 preceding 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 1

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<td>Individual Multimedia Project 7</td>
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<td>HDM473</td>
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Design Centre

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<td>HDM42PP</td>
<td>Multimedia Design Professional Practice 8</td>
</tr>
</tbody>
</table>

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

Application procedure
Application forms are available from the Faculty of Design.

Faculty of Engineering and Industrial Sciences

Swinburne has long been recognised for its excellence in engineering education. In the past few years it has built up a fine reputation for its research in fundamental physics, applied physics and engineering. The Faculty of Engineering and Industrial Sciences is committed to enhancing credentials and to offering a range of engineering qualifications.

We aim to produce well-rounded graduates who have the skills to operate in, and manage, the engineering process. A new outlook and changes to course content mean that our graduates are entrepreneurial, trained to recognise new business opportunities and will contribute to the wealth creation of society.

We offer a range of courses which maximise the benefits to both domestic and international students to give them a competitive edge in the workforce. Our undergraduate courses include bachelor of engineering degrees in civil engineering, mechanical engineering, robotics and mechatronics, and electronics and computer systems, bachelor of science degree in photonics and bachelor of technology degrees in aviation and air transportation management.

Our courses have a practical and applied focus and students are given the opportunity to participate in projects such as the building of a competitive Formula SAE racing car. We also encourage students to spend a year working in a relevant company after they have completed their second year of studies. Many students choose to include in their studies a year of paid professional experience in their preferred industry which provides valuable vocational experience.

Further information
Telephone: +61 3 9214 8372
Fax: +61 3 9214 8264
Email: engineering@swin.edu.au
Website: www.swinburne.edu.au/engineering

Z029 Bachelor of Engineering in 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.

Aims & Objectives

The course has the following objectives:
- To develop in students a mastery of a wide spectrum of basic engineering principles underlying biomedical 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 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 in students problem solving skills in complex human-machine systems.
• To develop students’ communication skills so that they can present their ideas clearly by verbal, written and graphical means.

• To give students an appropriate introduction to the role of the professional engineer in the community and to explore the social effects of engineering decisions.

• To prepare students for the changing workplace and changing societal context of engineering by developing their life-long learning skills and flexibility of mind.

• To integrate the formal course of study with an optional one year period of Industry-Based Learning.

• To deliver a professionally recognised course of study that will enable graduates to join the Institution of Engineers Australia as graduate members.

Campus
Hawthorn

Career opportunities
Graduates may work in biomedical areas of either the public sector, for example in hospitals, or in the health industry. Alternatively, graduates may choose to work as an electrical engineer.

Professional recognition
Graduates will be eligible to apply for graduate membership of the Institution of Engineers, Australia. Graduates are also eligible for membership of the Australasian College of Physical Scientists and Engineers in Medicine.

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

Students must complete at least 400 credit points made up of:

- Biomedical Engineering (BM E) Core Studies (287.5 credit points)
- Software Engineering Studies (25 credit points)
- Management and Business Studies (37.5 credit points)
- Specialist Technical (BM E) Studies (12.5 credit points)
- Technical (BM E) Studies and/or Software Engineering Studies (37.5 credit points)

Course subjects
All subjects have a value of 12.5 credit points unless indicated otherwise.

Biomedical Engineering (BM E) Core Studies
HEF1000 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

HET220 Cardiovascular Biophysics
HET222 Embedded Microcontrollers
HET225 Biomedical Electronics
HET240 Cellular Biophysics
HET260 Renal & Respiratory Biophysics
HET324 Communications Principles
HET408 Biomedical Imaging & Emerging Technologies
HET419 Physiological Modelling
HET550 Design & Development Project 1
HET556 Design & Development Project 2
HM S111 Engineering Mathematics 1
HM S112 Engineering Mathematics 2
HM S213 Engineering Mathematics 3B
HM S214 Engineering Mathematics 4B

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

Technical (BME) Studies
HET103 Photonics 1
HET308 Circuits & Electronics 2
HET312 Control and Automation
HET329 Digital Signal & Image Processing
HET489 Robotic Control
HIT3138 Intelligent Systems

Specialist Technical (BME) Studies
HET219 Neurological Monitoring
HET227 Neurophysiology
HET425 Nucleons and Spectroscopy
HETS27 Sleep and Attention

Management and Business Studies
HBSG200 New Venture Development & Management
HES3380 Engineering Management 1
HES5380 Engineering Management 2
HES5385 Engineering Management 3

Recommended Study Sequence
Semester 1
HEF1000 Professional Engineering
HET102 Introductory Physiology
HET124 Energy & Motion
HM S111 Engineering Mathematics 1

Semester 2
HET133 Human Physiology
HET182 Electronic Systems
HIT1051 Software Development 1
HM S112 Engineering Mathematics 2

Semester 3
HET202 Digital Electronics Design
HET240 Cellular Biophysics
HIT1052 Software Development 2
HM S213 Engineering Mathematics 3B

Semester 4
HET230 Cardiovascular Biophysics
HET225 Biomedical Electronics
HET260 Renal & Respiratory Biophysics
HM S214 Engineering Mathematics 4B
Aims & Objectives

- To equip students with relevant professional abilities including effective communication, rational and creative thinking and responsible project management.
- To enhance personal qualities including working in teams, leadership, independence and sensitivity to people, cultures and the environment.

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

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.

Course subjects

Stage 1

Semester 1

HES1000 Professional Engineering

HES1125 Mechanics of Structures

HET124 Energy and Motion

HM S111 Engineering Mathematics 1

Semester 2

HES1230 Materials and Processes

HES1105 Civil Engineering Project

HET182 Electronic Systems

HM S112 Engineering Maths 2

Stage 2

Semester 1

HES146C Computer Aided Engineering

HES2120 Structural Mechanics

HES2131 Topographical Engineering

HM S215 Engineering Mathematics 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

HES3112 Urban Water Resources

HES3121 Design of Steel Structures

HES3150 Geotechnical Engineering
To develop in students a mastery of a wide spectrum of basic engineering principles underlying electronics and computer systems engineering.

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2006 VCE Prerequisites: Units 3 & 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.

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
Students must complete at least 400 credit points made up of:
Management and Business Studies
Specialist Technical (E&CS) Studies
Technical (E&CS) Studies
Software Engineering Studies
Students choose subjects from five Subject Groups:
Technical (E&CS) Studies and/or Specialist Technical (E&CS) Studies (25 credit points)
Management and Business Studies (37.5 credit points)
Specialist Technical (E&CS) Studies (37.5 credit points)
Software Engineering Studies (37.5 credit points)

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.

Course subjects
All subjects have a value of 12.5 credit points unless indicated otherwise.

Engineering (E&CS) Core Studies
HET1000 Professional Engineering
HET1005 Engineering Project
HET124 Energy & Motion
HET182 Electronic Systems
HET202 Digital Electronics Design

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

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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>HET214</td>
<td>Circuits &amp; Electronics 1</td>
</tr>
<tr>
<td>HET232</td>
<td>Embedded Microcontrollers</td>
</tr>
<tr>
<td>HET308</td>
<td>Circuits &amp; Electronics 2</td>
</tr>
<tr>
<td>HET312</td>
<td>Control &amp; Automation</td>
</tr>
<tr>
<td>HET314</td>
<td>Communications Principles</td>
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<tr>
<td>HET316</td>
<td>Electromagnetic Waves</td>
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<tr>
<td>HET329</td>
<td>Digital Signal &amp; Image Processing</td>
</tr>
<tr>
<td>HET378</td>
<td>Integrated Circuit Design</td>
</tr>
<tr>
<td>HET416</td>
<td>Computer System Engineering</td>
</tr>
<tr>
<td>HET513</td>
<td>Design of DSP Architectures</td>
</tr>
<tr>
<td>HET515</td>
<td>Advanced Embedded Systems</td>
</tr>
<tr>
<td>HET550</td>
<td>Design &amp; Development Project 1</td>
</tr>
<tr>
<td>HET556</td>
<td>Design &amp; Development Project 2</td>
</tr>
<tr>
<td>HM5111</td>
<td>Engineering Mathematics 1</td>
</tr>
<tr>
<td>HM5112</td>
<td>Engineering Mathematics 2</td>
</tr>
<tr>
<td>HM5213</td>
<td>Engineering Mathematics 3B</td>
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<tr>
<td>HM5214</td>
<td>Engineering Mathematics 4B</td>
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</tbody>
</table>

**Software Engineering Studies**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HIT1051</td>
<td>Software Development 1</td>
</tr>
<tr>
<td>HIT1052</td>
<td>Software Development 2</td>
</tr>
<tr>
<td>HIT3072</td>
<td>C++ for Programmers</td>
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</table>

**Technical (E&CS) Studies**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HMS250</td>
<td>Robotic System Design</td>
</tr>
<tr>
<td>HET225</td>
<td>Electrical Machines</td>
</tr>
<tr>
<td>HET315</td>
<td>Communications Information Theory</td>
</tr>
<tr>
<td>HET343</td>
<td>Mechatronics</td>
</tr>
<tr>
<td>HET417</td>
<td>Photonics &amp; Fibre Optics</td>
</tr>
<tr>
<td>HET452</td>
<td>Wireless Communications</td>
</tr>
<tr>
<td>HET489</td>
<td>Robotics Control</td>
</tr>
<tr>
<td>HET559</td>
<td>Power Electronics</td>
</tr>
<tr>
<td>HIT2024</td>
<td>Introduction to Human Computer Interaction</td>
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</tbody>
</table>

**Specialist Technical (E&CS) Studies**

<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>HET209</td>
<td>Fibre Optics Communication</td>
</tr>
<tr>
<td>HET336</td>
<td>Network Engineering</td>
</tr>
<tr>
<td>HET406</td>
<td>Multimedia Data Processing</td>
</tr>
<tr>
<td>HET517</td>
<td>RF Electronics Design</td>
</tr>
<tr>
<td>HIT2114</td>
<td>Operating Systems (Linux)</td>
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<tr>
<td>HIT3138</td>
<td>Intelligent Systems</td>
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</table>

**Management and Business Studies**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HBSG200</td>
<td>New Venture Development &amp; Management</td>
</tr>
<tr>
<td>HES3380</td>
<td>Engineering Management 1</td>
</tr>
<tr>
<td>HES5380</td>
<td>Engineering Management 2</td>
</tr>
<tr>
<td>HES5385</td>
<td>Engineering Management 3</td>
</tr>
</tbody>
</table>

**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 BSEE Academic Committee.

**Recommended Study Sequence**

**Semester 1**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HEF1000</td>
<td>Professional Engineering</td>
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<tr>
<td>HET124</td>
<td>Energy &amp; Motion</td>
</tr>
<tr>
<td>HIT1051</td>
<td>Software Development 1</td>
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<td>HM5111</td>
<td>Engineering Mathematics 1</td>
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**Semester 2**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>HET1005</td>
<td>Engineering Project</td>
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<tr>
<td>HET182</td>
<td>Electronic Systems</td>
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<tr>
<td>HIT1052</td>
<td>Software Development 2</td>
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<td>HM5112</td>
<td>Engineering Mathematics 2</td>
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**Semester 3**

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<tr>
<td>HET202</td>
<td>Digital Electronics Design</td>
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<td>HET314</td>
<td>Communications Principles</td>
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<tr>
<td>HIT3072</td>
<td>C++ for Programmers</td>
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<tr>
<td>HM5213</td>
<td>Engineering Mathematics 3B</td>
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**Semester 4**

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<td>Digital Signal &amp; Image Processing</td>
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<td>HM5214</td>
<td>Engineering Mathematics 4B</td>
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**Semester 5**

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<th>Course Code</th>
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<tr>
<td>HET308</td>
<td>Circuits &amp; Electronics 2</td>
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<tr>
<td>HET312</td>
<td>Control &amp; Automation</td>
</tr>
<tr>
<td>HET316</td>
<td>Electromagnetic Waves</td>
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**Optional IBL year**

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>HET300</td>
<td>Industry-Based Learning</td>
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<td>HET400</td>
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**Semester 6**

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>HET416</td>
<td>Computer Systems Engineering</td>
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**Management and Business (choose one)**

**Technical/Specialist Technical E&CS Studies (choose two)**

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**Semester 7**

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<th>Course Code</th>
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<tbody>
<tr>
<td>HET515</td>
<td>Advanced Embedded Systems</td>
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<td>HET530</td>
<td>Design &amp; Development Project 1</td>
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</table>

**Management and Business (choose one)**

**Technical/Specialist Technical E&CS Studies (choose one)**

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**Semester 8**

<table>
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<th>Course Code</th>
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<tr>
<td>HET513</td>
<td>Design of DSP Architectures</td>
</tr>
<tr>
<td>HET536</td>
<td>Design &amp; Development Project 2</td>
</tr>
</tbody>
</table>

**Management and Business (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.

2006 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.

Selection mode: ENTER and two-stage process with a middle-band of 20%.

Middle-band selection: Applicants who have a study score of at least 25 in Physics or Specialist Mathematics, will be deemed to have an ENTER up to 3.0 percentage points higher for each study to a maximum of 6.5 percentage points.

2004 Final Clearly-In ENTER: 80.55

**Application procedure**

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

VTAC code: 34591 (CSP), 34592 (Fee), 34593 (Int. Fee)

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

This course is also offered through the Vice-Chancellor's Scholarship Program. Successful applicants are awarded HECS waiver scholarships and will be funded for the duration of their course. For further information visit the website at: www.swin.edu.au/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 8647 or via the website at: www.swin.edu.au/isu
M050 Bachelor of Engineering in Mechanical Engineering

Mechanical engineering deals with the design, manufacture and maintenance of machine components and systems from small domestic products to highly complex vehicle and aerospace systems. Mechanical engineers need to respond to a changing world dominated by advances in technology. Their combination of broad engineering knowledge and detailed expertise in specialist fields enables them to harness these changes.

Aims & Objectives

The Mechanical Engineering course 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.

Campus

Hawthorn

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 plus one year optional Industry-Based Learning (or the equivalent part-time) or a minimum of 12 weeks professional engineering practice.

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 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.

Course subjects

Stage 1

Semester 1

HES1300 Robotics & Mechatronics Project 1
HES1230 Materials & Processes
HET124 Energy and Motion
HMS111 Engineering Maths 1

Semester 2

HES1125 Mechanics of Structures
HES1305 Robotics & Mechatronics Project 2
HET182 Electronic Systems
HMS111 Engineering Maths 2

Stage 2

Semester 1

HM5211 Engineering Mathematics 3A
HES2330 Thermodynamics 1
HES2120 Structural Mechanics
HES2146 Computer Aided Engineering

Semester 2

HES2230 Engineering Materials
HES2340 Fluid Mechanics 1
HES2310 Machine Dynamics 1
HES2280 Manufacturing Technology 1

Stage 3

Semester 1

HES3350 Machine Design
HES3310 Control Engineering
HES3360 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
HES 3220 Solid Mechanics
HES 4350 Mechanical Systems Design
HM 5212 Engineering Mathematics 4A

Stage 5

Semester 1

HES 3380 Engineering Management 2
HES 3310 Machine Dynamics 2
HES 3340 Fluid Mechanics 2

Elective: Choose one:

HES5290 Advanced Technologies
HES5360 SAE Automotive Engineering Project

Semester 2

HES 3350 Product Design
HES 3385 Engineering Management 3
HES 5106 Research Project

Elective: Choose one:

HES5250 Robot System Design
HES4280 Manufacturing Technology 2
HES4250 Design for Manufacture
HM 5411 Engineering Mathematics 5A

Entry requirements

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

2006 VCE Prerequisites: Units 3 & 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.

2004 Final Clearly-In ENTER: 80.65

Applicants who have successfully completed an Associate Diploma of Engineering (Mechanical) or (Manufacturing) at a Victorian Institute of TAFE, or reached an approved equivalent standard will also be eligible for consideration for admission. However, this does not guarantee a place.
Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and normally have at least five years related work experience, may be considered for admission if they can demonstrate motivation and ability to succeed.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34611 (CSP), 34612 (Fee), 34613 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor’s Scholarship Program. For further information visit the website at: www.swin.edu.au/hed/scholarships/vcschol.htm
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swin.edu.au/isu

PDES50 Bachelor of Engineering in Product Design Engineering

Product Design engineering is a combination of two traditionally separate fields: engineering with its scientific material and manufacturing knowledge and industrial design with its human-centred approach. They have been brought together to produce a new professional who will be able to develop competitive products in both engineering quality and design innovation. The subjects studied during the course are equally shared by the Faculty of Engineering and Industrial Sciences and the Faculty of Design. These subjects have a focus on creative design, engineering science, project management and innovation.

Aims & Objectives
The main aim of the course is to educate creative product design engineers with the knowledge, skills and attitudes that make them valuable members of a product design, development and production team. This aim is to be achieved by providing a project driven learning environment which covers the required disciplines involved in creative design, engineering science, material selection, 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/Prahran

Career opportunities
Graduates are best equipped for 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. Students may also undertake an optional year of Industry-Based Learning (IBL).

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 in which case only three subjects are studied. The total number per semester is 50 credit points. Eight semesters of academic study plus one year optional Industry-Based Learning or twelve weeks compulsory, approved industrial experience is required to complete this course.

Course subjects

Stage 1
 Semester 1
HDO003 Product Design Modelling
HDO004 Product Design Comm 1
HET124 Energy & Motion
HM S111P Engineering Mathematics 1

Stage 2
 Semester 1
HDO005 Product Design Comm 2
HES112S Mechanics of Structures
HET182 Electronic Systems
HM S112P Engineering Mathematics 2

Stage 3
 Semester 1
HDP0211 Product Design 3
HES2120 Structural Mechanics
HES1230 Materials and Processes

Stage 4
 Semester 1
HDP0311 Product Design 5
HES3334 Thermofluid Systems
HES3380 Engineering management 2
HES3330 Machine Design

Stage 5
 Semester 1
HDP0511 Product Design 7
HDP0512 Professional Project
HES5210 Industrial Systems Engineering
Elective: select one of:
HES3360 Human Factors, or
HES5290 Advanced Technologies

Stage 6
 Semester 1
HDP0521 Product Design 8
HDP0522 Professional Project
HES5385 Engineering Management 3
Design Elective: select one of:
HDP0500 Multimedia
HBM 220 Market Behaviour
HBP337 Managing Technology and Innovation
Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or International Year 12 qualification.
2006 VCE Prerequisites: Units 3 & 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 Chemistry, Information Technology: Information Systems, Physics or Specialist Mathematics.
2004 ENTER: Individual offer.
Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary studies, and normally have at least five years related work experience, may be considered for admission if they can demonstrate motivation and ability to succeed.
All applicants must participate in a pre-selection program and, if selected, attend an interview. For further details, refer to the VTAC guide.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34121(CSP), 34122 (Fee), 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.swin.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.swin.edu.au/isu

R050 Bachelor of Engineering in Robotics and Mechatronics

This course brings together the complementary disciplines of Robotics and Mechatronics which are founded in the engineering sciences, mathematics and mechanical/electrical 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 (plus one year optional Industry-Based Learning).

Course subjects

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Semester 1</th>
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<tbody>
<tr>
<td>HET101</td>
<td>Robotics and Mechatronics Project 1</td>
</tr>
<tr>
<td>HES1125</td>
<td>Mechanics of Structures</td>
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<tr>
<td>HET124</td>
<td>Energy and Motion</td>
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<td>HM S111</td>
<td>Engineering Mathematics 1</td>
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<tr>
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<tr>
<td>HET105</td>
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<td>Materials &amp; Processes</td>
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<td>Engineering Maths 2</td>
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<td>HM S211</td>
<td>Engineering Maths 3A</td>
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<td>HES2120</td>
<td>Structural Mechanics</td>
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<tr>
<td>HET210</td>
<td>Electronics</td>
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<tr>
<td>HIT1051</td>
<td>Software Development 1</td>
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<th>Stage 4</th>
<th>Semester 2</th>
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<td>HES3110</td>
<td>Machine Dynamics 1</td>
</tr>
<tr>
<td>HET225</td>
<td>Electrical Machines</td>
</tr>
<tr>
<td>HIT1052</td>
<td>Software Development 2</td>
</tr>
<tr>
<td>HIT221</td>
<td>Embedded Microcontrollers</td>
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<tbody>
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<td>Design and Development Project 1</td>
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<td>HES5290</td>
<td>Advanced Technologies</td>
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<tr>
<td>HES5380</td>
<td>Engineering Management 2</td>
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<td>HET417</td>
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<td>HIT3072</td>
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<tbody>
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<td>HET557</td>
<td>Design and Development Project 2</td>
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<td>Robot System Design</td>
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<td>HES5385</td>
<td>Engineering Management 3</td>
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<tr>
<td>HIT3138</td>
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<td>HIT3054</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.
2006 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.
2004 Final Clearly-In ENTER: 83.00
Applicants who have successfully completed an Advanced Certificate or Associate Diploma at a Victorian Institute of TAFE, or reached an approved equivalent standard will also be eligible for consideration for admission. However, this does not guarantee a place.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34011 (CSP), 34012 (Fee), 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.swin.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.swin.edu.au/isu

S050 Bachelor of Science in Photonics
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

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.

Course subjects
All subjects have a value of 12.5 credit points unless indicated otherwise.

Semester 1
HET101 Energy & Motion
HET313 Telecommunications Technologies
HIT1051 Software Development 1
HM 5111 Engineering Mathematics 1

Semester 2
HET103 Photonics 1
HET102 Electronic Systems
HIT1052 Software Development 2
HM 5112 Engineering Mathematics 2

Semester 3
HET128 Physics 2
HET210 Electronics

HET417 Photonics & Fibre Optics
HM 5213 Engineering Mathematics 3B

Semester 4
HET203 Photonics 2
HET205 Introduction to Modern Optics
HM 5214 Engineering Mathematics 4B
Choose one of:
HET104 LAN Principles
HET410 Network Administration

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

Semester 5
HET204 Photonics 3
HET206 Modern Physics
HET316 Electromagnetic Waves
Choose one of:
HET424 IP Technologies
HIT3041 Advanced Web Development

Semester 6
HET207 Modelling & Simulation Projects
HET209 Fibre Optics Communications & Optical Instrumentation
HET329 Digital Signal & Image Processing
General Elective

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any) and Mathematical Methods.
Bonus points given for Physics, Specialist Mathematics or Information Systems.
2004 Final Clearly-In ENTER: 82.10

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34011 (CSP), 34012 (Fee), 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

M056 Bachelor of Technology in 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
The Air Transportation Management course prepares students for professional careers in the following areas: airline management, airline flight operations, airline ground operations, airport management, airport operations, airport planning, aviation consultancy firms, aviation charter firms, air services, aviation regulatory and safety services, aviation safety authorities.

Course duration
Three years full-time plus an optional six months to one year Industry-Based Learning (IBL).
Course subjects

Year 1
Semester 1
HES1920 Private Pilot Licence
HET124 Energy & Motion
HM5141 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
HES2990 Airport Planning, Operation & Management
HES2940 Aircraft Aerodynamics & Performance
HES2930 Aircraft Structures
HES2910 Human Factors & Performance
Semester 2
HES6720 Risk Perception & Analysis
HES2915 Airline Planning and Operations
HES2935 Aircraft Maintenance
HES2986 Aviation Regulation, Environment and Operation

Year 3
Semester 1
HES3903 Non-Flying Industry-Based Learning
Semester 2
HES3905 Non-Flying Industry-Based Learning

Year 4
Semester 1
HES6132 Managing Modern Distribution
HES4990 Aviation Legal Framework
HES4960 Aviation Project
HES4981 Aviation Business Management
Semester 2
HES2945 Aircraft Design & Operations
HES4985 Airspace Management & Air Traffic Services
HES4916 Integrated Safety Management Systems
XXXXXXX Elective

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

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), and a study score of at least 20 in M mathematical Methods, and in one of Biology, Chemistry, Physics, Specialist Mathematics, Information Technology: Information Systems, or Psychology.

2004 Final Clearly-In ENTER: RC

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34421 (CSP), 34422 (Fee), 34423 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swin.edu.au/isu

M055  Bachelor of Technology in Aviation

The aim of the course is to prepare students for careers in the aviation industry as professional pilots. Skill training and education processes are weighted equally in the course where there is a need to provide a high level of both flying prowess and the ability to solve problems through the application of methodical and rational thinking. High quality Commercial Pilot Licence training is augmented with educational topics designed to provide an optimum balance between the range of areas required by today's professional pilots. Aviation Human Factors training, Aviation Management and additional aircraft specific engineering topics are included to attain this objective.

During the three year duration of the course, adequate time and facilities are provided to enable the students to undertake the flying training necessary to reach Commercial Pilot Licence standard based on a 150 hour integrated flying syllabus. Additional flying training to suit particular needs, such as instructor, agricultural or instrument ratings is also available.

Campus
Hawthorn

Career opportunities
This course prepares students for aviation careers in the air transportation industry as professional pilots.

Professional recognition
The BTech (Aviation) and BTech (Aviation)/BBus courses are 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 (CPPL) practical test.

Course duration
Three years full-time.

Course subjects

Year 1
Semester 1
HES1900 Private Pilot Licence
HET124 Energy and Motion
HM5141 Aviation Mathematics
HES1910 Human Factors & Communication
Semester 2
HES1905 Commercial Pilot Licence I
HES1935 Internal Comb. & Gas Turb. Eng.
HES1945 A/C Electrics & Avionics
HES1915 Occupational Health & Safety

Year 2
Semester 1
HES2900 Air Transport Pilot Licence 1
HES2940 A/C Aerodynamics & Performance
HES2930 A/C Structures
HES2910 Human Factors & Performance
Semester 2
HES2905 Air Transport Pilot Licence 2
HES2945 A/C Design & Operations
HES2935 A/C Maintenance
HES2986 Aviation Regulation, Environment & Operation

Year 3
Semester 1
HES4900 Air Transport Pilot Licence 3
HES4990 Aviation Legal Framework
HES4960 Aviation Project
HES4981 Aviation Business Management
Semester 2

HES4905 Air Transport Pilot Licence 4  
Elective
HES4985 Aireospace Mgt. & Air Traffi. Serv.
HES4916 Integrated Safety Management Systems

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2006 VCE Prerequisites: Units 3 & 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, Physics, Specialist Mathematics, Information Technology: Information Systems, or Psychology.
2004 Final Clearly-In ENTER: RC
Applicants should ensure they are able to pass the medical requirements of the Civil Aviation Safety Authority (CASA) Class 1 Medical.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34511 (CSP), 34512 (Fee), 34513 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
Applicants must also submit an application form, available from the Faculty of Engineering and Industrial Sciences by the 30 September.
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swin.edu.au/isu

Double Degrees

ECB050 Bachelor of Engineering in Civil Engineering / Bachelor of Business

This double degree combines engineering and business subjects, and is designed to provide students with skills and understanding of civil engineering principles along with 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 (AM I)
- Institute of Corporate Managers, Secretaries and Administrators

Course duration
Five years full-time, plus one year optional 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.

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 and design projects are undertaken throughout the course.

Course subjects

Year 1

Semester 1
HEF1000 Professional Engineering
HET124 Energy & Motion
HES1125 Mechanics of Structures
HM1111 Engineering Maths 1

Semester 2
HES1105 Civil Engineering Project
HES1230 Materials & Processes
HET182 Electronic Systems
HM1112 Engineering Maths 2

Year 2

Semester 1
HES2131 Topographical Engineering
HES2146C Computer Aided Engineering
HES2120 Structural Mechanics 1
HM1215 Engineering Maths 3C

Semester 2
HES2155 Geomechanics
HES2136 Road Engineering
HES2340 Fluid Mechanics 1
HES2125 Design of Concrete Structures

Year 3

Semester 1
HES3300 Industry-Based Learning

Semester 2
HES4300 Industry-Based Learning

Year 4

Semester 1
HES3150 Geotechnical Engineering
HES3112 Urban Water Resources
HES3121 Design of Steel Structures
HBM110 Organisations & Management

Semester 2
HES4126 Structural Engineering
HES4146 Water & Environmental Engineering
HES4136 Transport Engineering
HBC110 Accounting for Success

Year 5

Semester 1
HES5190 Infrastructure Design Project
HES5191 Infrastructure Deterioration Assessment
HBE110 Microeconomics
HBM110 The Marketing Concept

Semester 2
HES5195 Infrastructure Management Project
HES5106 Research Project
HBL111 Law in Global Business
1st Subject of Chosen Major

Year 6

Semester 1
2nd Subject of Chosen Major
Aims & Objectives

This double degree aims to:

- Develop a general knowledge and perspective of business by a study of a variety of disciplines and of their relationship to one another, forming an integrated, holistic business understanding.
- 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.
- Develop skills and attitudes conducive to life-long learning.

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 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 two and a half years academic semesters of study if relevant to the first named degree or after three and a half years academic semesters of study if relevant to the second named degree.

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

Students must 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)
- Management and Business Studies (including one Business Major) (112.5 credit points)
- Specialist Technical (E&CS/B) Studies (12.5 credit points)

Business Component

This component comprises a minimum of fourteen 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 of the Bachelor of Business.

- At least three additional business subjects must be undertaken in order to total a minimum of fourteen 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

Course subjects

All subjects have a value of 12.5 credit points unless indicated otherwise.

Engineering & Business (E&CS/B) Core Studies

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<tr>
<td>HBE110</td>
<td>Microeconomics</td>
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<td>HBH110</td>
<td>Organisations and Management</td>
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<td>HBL111</td>
<td>Law in Global Business</td>
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<td>HBM110</td>
<td>The Marketing Concept</td>
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<td>Professional Engineering</td>
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<td>HET232</td>
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<td>Control &amp; Automation</td>
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<td>HET314</td>
<td>Communications Principles</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>Integrated Circuit Design</td>
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<td>HET416</td>
<td>Computer System Engineering</td>
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<td>Design of DSP Architectures</td>
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<td>Advanced Embedded Systems</td>
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<td>Design &amp; Development Project 1</td>
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<td>Design &amp; Development Project 2</td>
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<td>Engineering Mathematics 1</td>
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<td>HM S112</td>
<td>Engineering Mathematics 2</td>
</tr>
<tr>
<td>HM S213</td>
<td>Engineering Mathematics 3B</td>
</tr>
<tr>
<td>HM S214</td>
<td>Engineering Mathematics 4B</td>
</tr>
</tbody>
</table>

Software Engineering Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</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>HIT3072</td>
<td>C++ for Programmers</td>
</tr>
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</table>

Specialist Technical (E&CS) Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
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<tbody>
<tr>
<td>HET209</td>
<td>Fibre Optics Communication</td>
</tr>
<tr>
<td>HET336</td>
<td>Network Engineering</td>
</tr>
<tr>
<td>HET406</td>
<td>Multimedia Data Processing</td>
</tr>
<tr>
<td>HET517</td>
<td>RF Electronics Design</td>
</tr>
<tr>
<td>HIT2114</td>
<td>Operating Systems (Linux)</td>
</tr>
<tr>
<td>HIT3138</td>
<td>Intelligent Systems</td>
</tr>
</tbody>
</table>

Management and Business Studies

M inimum 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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>HEF1000</td>
<td>Professional Engineering</td>
</tr>
<tr>
<td>HET124</td>
<td>Energy &amp; Motion</td>
</tr>
<tr>
<td>HIT1051</td>
<td>Software Development 1</td>
</tr>
<tr>
<td>HM S111</td>
<td>Engineering Mathematics 1</td>
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</table>

Semester 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HIT1005</td>
<td>Engineering Project</td>
</tr>
<tr>
<td>HET182</td>
<td>Electronic Systems</td>
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<td>HIT1052</td>
<td>Software Development 2</td>
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Semester 3

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<tbody>
<tr>
<td>HET214</td>
<td>Circuits &amp; Electronics 1</td>
</tr>
<tr>
<td>HET222</td>
<td>Embedded Microcontrollers</td>
</tr>
<tr>
<td>HET329</td>
<td>Digital Signal &amp; Image Processing</td>
</tr>
<tr>
<td>HM S214</td>
<td>Engineering Mathematics 4B</td>
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Semester 4

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<th>Course Title</th>
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<tbody>
<tr>
<td>HET308</td>
<td>Circuits &amp; Electronics 2</td>
</tr>
<tr>
<td>HET312</td>
<td>Control &amp; Automation</td>
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<tr>
<td>HET378</td>
<td>Integrated Circuit Design</td>
</tr>
<tr>
<td>HM S213</td>
<td>Engineering Mathematics 3B</td>
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Optional IBL year

<table>
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<tr>
<td>HET300</td>
<td>Industry-Based Learning</td>
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<td>HET400</td>
<td>Industry-Based Learning</td>
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Semester 6

<table>
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<tbody>
<tr>
<td>HET416</td>
<td>Computer Systems Engineering</td>
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<tr>
<td>HET513</td>
<td>Specialist Technical (E&amp;CS) Studies (choose one)</td>
</tr>
<tr>
<td>HET550</td>
<td>Design &amp; Development Project 1</td>
</tr>
<tr>
<td>HET556</td>
<td>Design &amp; Development Project 2</td>
</tr>
<tr>
<td>HM S111</td>
<td>Engineering Mathematics 1</td>
</tr>
<tr>
<td>HM S112</td>
<td>Engineering Mathematics 2</td>
</tr>
<tr>
<td>HM S213</td>
<td>Engineering Mathematics 3B</td>
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Semester 7

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<tr>
<td>HET316</td>
<td>Electromagnetic Waves</td>
</tr>
<tr>
<td>HET513</td>
<td>Design of DSP Architectures</td>
</tr>
<tr>
<td>HET556</td>
<td>Design &amp; Development Project 2</td>
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Semester 8

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<tr>
<th>Course Code</th>
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<tr>
<td>HET515</td>
<td>Advanced Embedded Systems</td>
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Semester 9

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<tr>
<td>HET515</td>
<td>Advanced Embedded Systems</td>
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Semester 10

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<th>Course Code</th>
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<tbody>
<tr>
<td></td>
<td>Management and Business Studies (choose three)</td>
</tr>
<tr>
<td></td>
<td>Management and Business Studies (choose four)</td>
</tr>
</tbody>
</table>
Note:
- Electives will be offered subject to a sufficient number of enrolments.
- The choice of subjects from the Management and Business Studies Group must include one Business major.

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

2006 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.

Select mode: ENTER and two-stage process with a middle-band of 20%.

Middle-band selection: Applicants who have a study score of at least 25 in Physics and/or Specialist Mathematics, will be deemed to have an ENTER up to 3.0 percentage points higher for each study to a maximum of 6.5 percentage points.

2004 Final Clearly-In ENTER: 80.55

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

VTAC code: 34591 (CSP), 34592 (Fee), 34593 (Int. Fee)

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

This course is also offered through the Vice-Chancellor’s Scholarship Program. Successful applicants are awarded HECs waiver scholarships and will be funded for the duration of their course. For further information visit the website at: www.swin.edu.au/hed/scholarships/vcschol.htm

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

EC051 Bachelor of Engineering in Electronics and Computer Systems/ Bachelor of Science in Computer Science and Software Engineering

This double degree program is based on two existing single degree programs, the Bachelor of Engineering (Electronics and Computer Systems) and the Bachelor of Science (Computer Science and Software Engineering). These courses are complementary in providing hardware and software aspects of design and development. It provides a course that can be completed in five years without sacrificing the strengths of either course.

Aims & Objectives
The course has the following objectives:
- Develop design expertise in electronics, computer systems and software engineering.
- Cultivate logical and lateral thinking that leads to creation and innovation in the pursuit of solutions to engineering problems.
- Develop students’ communication skills so that they can present their ideas clearly by verbal, written and graphical means.
- Give students an appropriate introduction to the role of the professional engineer in the community and to explore the social effects of engineering decisions.
- Prepare students for the changing workplace and changing societal context of engineering by developing their life-long learning skills and flexibility of mind.
- Deliver a professionally 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(CSSE) has been accredited at professional level by the Australian Computer Society (ACS). The double degree would provide a similar level of recognition by these societies.

Course duration
Five years full-time, plus an optional and additional year of Industry-Based Learning (IBL).

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

Students must complete at least 500 credit points made up of:
- Electronics and Computer System Engineering Core Studies (250 credit points)
- Software Engineering Studies (200 credit points)
- Management and Business Studies (37.5 credit points)
- Technical Studies or Specialist Technical Studies (12.5 credit points)

Course subjects
All subjects have a value of 12.5 credit points unless indicated otherwise.

Electronics and Computer Systems Engineering Core Studies

HEF1000 Professional Engineering
HEF1005 Engineering Project
HEF124 Energy & Motion
HEF182 Electronic Systems
HEF202 Digital Electronics Design
HEF214 Circuits & Electronics 1
HEF222 Embedded MicroControllers
HEF308 Circuits & Electronics 2
HEF314 Communications Principles
HEF316 Electromagnetic Waves
HEF329 Digital Signal & Image Processing
HEF378 Integrated Circuit Design
HEF416 Computer System Engineering
HEF513 Design of DSP Architectures
HEF515 Advanced Embedded Systems
HET552 Design & Development Project
HM5111 Engineering Mathematics 1
HM5112 Engineering Mathematics 2
HM5213 Engineering Mathematics 3B
HM5214 Engineering Mathematics 4B

Software Engineering Studies

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
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 credit points)
HIT3072  C++ for Programmers
HIT3102  Intelligent Agents
HIT3149  Analysis Modelling and Design

Technical Studies
HE5250  Robotic System Design
HET225  Electrical Machines
HET315  Communications Information Theory
HET343  Mechatronics
HET417  Photonics & Fibre Optics
HET452  Wireless Communications
HET499  Robotics Control
HETS59  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
HIT3063  UNIX Systems Programming
HIT3087  Advanced Java
HIT3157  Large Scale System Design

Specialist Technical Studies
HET209  Fibre Optics Communication
HET336  Network Engineering
HET406  Multimedia Data Processing
HET517  RF Electronics Design

Management and Business Studies
HE5300  New Venture Development
HE5380  Engineering Management 1
HE5385  Engineering Management 2
HE5386  Engineering Management 3

Management and Business Studies (choose one)

Recommended Study Sequence

Semester 1
HEF1000  Professional Engineering
HET124  Energy & Motion
HIT1051  Software Development 1
HM 5311  Engineering Mathematics 1

Semester 2
HET1005  Engineering Project
HET182  Electronic Systems
HIT1052  Software Development 2
HM 5312  Engineering Mathematics 2

Semester 3
HET202  Digital Electronics Design
HET314  Communications Principles
HIT3072  C++ for Programmers
HM 5213  Engineering Mathematics 3B

Semester 4
HET214  Circuits & Electronics 1
HET222  Embedded Microcontrollers
HIT1031  Introduction To Software Engineering
HM 5214  Engineering Mathematics 4B

Semester 5
HET308  Circuits & Electronics 2
HET316  Electromagnetic Waves
HET378  Integrated Circuit Design
HIT2253  Data Structures & Algorithms

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

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

Semester 7
HET315  Advanced Embedded Systems
HIT2016  Database 1
HIT2056  Software Project Management
Management and Business Studies (choose one)

Semester 8
HET513  Design of DSP Architectures
HIT2024  Introduction to Human Computer Interaction
HIT3149  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
HIT314  Advanced Web Development
HIT3044  Professional Issues in IT
HIT3058  Software Engineering Project
Technical Studies or Specialist Technical Studies (choose one)

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.
2006 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.
Selection mode: ENTER and two-stage process with a middle-band of 20%.
Middle-band selection: Applicants who have a study score of at least 25 in Physics and/or Specialist Mathematics, will be deemed to have an ENTER up to 3.0 percentage points higher for each study to a maximum of 6.5 percentage points.
2004 Final Clearly-In ENTER: 80.55

Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34591(CSP), 34592 (Fee), 34593 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
Note: VTAC applicants accepted into the single degree E051 Bachelor of Engineering (Electronics and Computer Systems) can select this double degree at enrolment.

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

**EMB050 Bachelor of Engineering in 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 (CIA) Australian Marketing Institute (AMI) Institute of Corporate Managers, Secretaries and Administrators

**Course duration**

Five years full-time, plus one year optional Industry-Based Learning may be available or a minimum of 12 weeks professional engineering practise.

**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.

**Course subjects**

**Year 1**

**Semester 1**

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
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</thead>
<tbody>
<tr>
<td>HES1300</td>
<td>Robotics &amp; Mechatronics Project 1</td>
</tr>
<tr>
<td>HET124</td>
<td>Energy &amp; Motion</td>
</tr>
<tr>
<td>HES1220</td>
<td>Materials &amp; Processes</td>
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<tr>
<td>HMS111</td>
<td>Engineering Maths 1</td>
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**Semester 2**

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<tr>
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<th>Subject Name</th>
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<tbody>
<tr>
<td>HES1305</td>
<td>Robotics &amp; Mechatronics Project 2</td>
</tr>
<tr>
<td>HES1125</td>
<td>Mechanics of Structures</td>
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<tr>
<td>HET182</td>
<td>Electronic Systems</td>
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<td>HMS112</td>
<td>Engineering Maths 2</td>
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**Year 2**

**Semester 1**

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<tbody>
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<td>Engineering Maths 3A</td>
</tr>
<tr>
<td>HES2146</td>
<td>Computer Aided Engineering</td>
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<tr>
<td>HES2230</td>
<td>Thermodynamics 1</td>
</tr>
<tr>
<td>HES2120</td>
<td>Structural Mechanics 1</td>
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**Semester 2**

<table>
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<th>Subject Name</th>
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<tbody>
<tr>
<td>HES2310</td>
<td>Machine Dynamics 1</td>
</tr>
<tr>
<td>HES2340</td>
<td>Fluid Mechanics 1</td>
</tr>
<tr>
<td>HES2280</td>
<td>Manufacturing Technology 1</td>
</tr>
<tr>
<td>HES2230</td>
<td>Engineering Materials</td>
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**Year 3**

**Semester 1**

<table>
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<th>Subject Code</th>
<th>Subject Name</th>
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<tbody>
<tr>
<td>HES3350</td>
<td>Machine Design</td>
</tr>
<tr>
<td>HES3360</td>
<td>Human Factors</td>
</tr>
<tr>
<td>HES3330</td>
<td>Control Engineering</td>
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<tr>
<td>HBE110</td>
<td>Organisations &amp; Management</td>
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**Semester 2**

<table>
<thead>
<tr>
<th>Subject Code</th>
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<tbody>
<tr>
<td>HES4360</td>
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**Year 4**

**Semester 1**

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<td>HES3300</td>
<td>Industry-Based Learning</td>
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**Semester 2**

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<tbody>
<tr>
<td>HES4350</td>
<td>Mechanical Systems Design</td>
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<td>HES3220</td>
<td>Solid Mechanics</td>
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<td>HES4330</td>
<td>Thermodynamics 2</td>
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<td>HBE110</td>
<td>Microeconomics</td>
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**Year 5**

**Semester 1**

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<td>Machine Dynamics 2</td>
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<tr>
<td>HES3340</td>
<td>Fluid Mechanics 2</td>
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<tr>
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<td>Microeconomics</td>
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**Year 6**

**Semester 1**

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<td>HES5106</td>
<td>Research Project</td>
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<td>HBL111</td>
<td>Law in Global Business</td>
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**Semester 2**

<table>
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<tr>
<td>2nd Subject of Chosen Major</td>
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<tr>
<td>3rd Subject of Chosen Major</td>
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<tr>
<td>4th Subject of Chosen Major</td>
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<tr>
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**Semester 3**

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<tr>
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<tr>
<td>Elective Business subject (2)</td>
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<tr>
<td>Elective Business subject (3)</td>
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</table>

**Entry requirements**

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

2006 VCE Prerequisites: Units 3 & 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.

2004 Final Clearly-In ENTER: 80.65

**Application procedure**

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

VTAC code: 34611 (CSP), 34612 (Fee), 34613 (Int. Fee)

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

Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swin.edu.au/hed/scholarships/vcschol.htm

Applications for part-time places should be made directly to the Faculty of Engineering and Industrial Sciences on the appropriate form.
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swin.edu.au/isu

ERCS050  Bachelor of Engineering in Robotics and Mechatronics / Bachelor of Science in Computer Science and 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, results in a homogeneous and focused course. Graduates will possess a combination of skills that will allow them to make a valuable contribution to society.

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 year of Industry-Based Learning. This course is not available on a part-time basis.

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.

Course subjects

Year 1

Semester 1

HES100  Robotics & Mechatronics Project 1
HET124  Energy and Motion
HES1230  Materials & Processes
HM S111  Engineering Maths 1

Semester 2

HES1305  Robotics & Mechatronics Project 2
HES1125  Mechanics of Structures
HET182  Electronic Systems
HM S112  Engineering Maths 2

Year 2

Semester 1

HM S211  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
HET222  Embedded Microcontrollers

Year 3

Semester 1

HES3350  Machine Design
HET312  Control & Automation
HIT2253  Data Structures and Algorithms
Global digital networking, mobile and fibre optics communications. Photonics (light, lasers, optics, optoelectronics) and telecommunications (local and international). This double degree maximises a student’s career choices through a combination of technologies.

S060 Bachelor of Science in Photonics/Bachelor of Engineering in Telecommunications and 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 five Subject Groups:
- Engineering & Science (Ph-TIT) Core Studies
- Technical (Ph-TIT) Studies
- Software Engineering (TIT) Studies
- Management and Business Studies.

Students must complete at least 500 credit points made up of:
- Engineering & Science (Ph-TIT) Core Studies (387.5 credit points)
- Software Engineering (TIT) Studies (50 credit points)
- Technical (Ph-TIT) Studies (25 credit points)
- Management & Business Studies (37.5 credit points)

Course subjects
All subjects have a value of 12.5 credit points unless indicated otherwise.

Engineering & Science (Ph-TIT) Core Studies
HET103 Photonics 1
HET105 Professional Skills - Telecommunications
HET124 Energy & Motion
HET128 Physics 2
HET182 Electronic Systems
HET202 Digital Electronics Design
HET203 Photonics 2
HET204 Photonics 3
HET205 Introduction to Modern Optics
HET206 Modern Physics
HET207 Modelling and Simulation Projects
HET209 Fibre Optics Communications & Optical Instrumentation
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
HET417 Photonics & Fibre Optics
HET436 Broadband Multimedia Networks

Semester 1
HIT2120 Data Communications and Security
HET499 Robotic Control
HET329 Digital Signal & Image Processing
HIT1031 Introduction to Software Engineering

Year 4
Semester 1
HIT2056 Software Project Management
HESS290 Advanced Technologies
HESS296 Human Factors
HESS380 Engineering Management 2

Semester 2
HIT3054 C++ for Java Programmers
HESS290 Robot System Design
HIT3149 Analysis, Modelling & Design
HIT2016 Database 1

Year 5
Semester 1
HET552 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
HESS385 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.

2006 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any), Mathematical Methods and one of Biology, Chemistry, Information Technology: Information Systems, Physics, Psychology or Specialist Mathematics.

2004 Final Clearly-In ENTER: 90.85

Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and normally have at least five years related work experience, may be considered for admission if they can demonstrate motivation and ability to succeed.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34991 (CSP), 34992 (Fee), 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.swin.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.swin.edu.au/isu

S060 Bachelor of Science in Photonics/Bachelor of Engineering in Telecommunications and 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.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>HET452</td>
<td>Wireless Communications</td>
</tr>
<tr>
<td>HET550</td>
<td>Design &amp; Development Project 1</td>
</tr>
<tr>
<td>HET556</td>
<td>Design &amp; Development Project 2</td>
</tr>
<tr>
<td>HM5111</td>
<td>Engineering Mathematics 1</td>
</tr>
<tr>
<td>HM5112</td>
<td>Engineering Mathematics 2</td>
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<tr>
<td>HM5213</td>
<td>Engineering Mathematics 3B</td>
</tr>
<tr>
<td>HM5214</td>
<td>Engineering Mathematics 4B</td>
</tr>
<tr>
<td>HET529</td>
<td>Digital Signal &amp; Image Processing</td>
</tr>
<tr>
<td>HIT1031</td>
<td>Introduction to Software Engineering</td>
</tr>
<tr>
<td>HIT104</td>
<td>LAN Principles*</td>
</tr>
<tr>
<td>HET410</td>
<td>Network Administration</td>
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<tr>
<td>Semester 1</td>
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<tr>
<td>HET111</td>
<td>Energy &amp; Motion</td>
</tr>
<tr>
<td>HET313</td>
<td>Telecommunications Technologies</td>
</tr>
<tr>
<td>HIT1051</td>
<td>Software Development 1</td>
</tr>
<tr>
<td>HM5111</td>
<td>Engineering Mathematics 1</td>
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<tr>
<td>Semester 2</td>
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</tr>
<tr>
<td>HET103</td>
<td>Photonics 1</td>
</tr>
<tr>
<td>HET182</td>
<td>Electronic Systems</td>
</tr>
<tr>
<td>HIT1052</td>
<td>Software Development 2</td>
</tr>
<tr>
<td>HM5112</td>
<td>Engineering Mathematics 2</td>
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<td>Semester 3</td>
<td></td>
</tr>
<tr>
<td>HET105</td>
<td>Professional Skills - Telecommunications</td>
</tr>
<tr>
<td>HET128</td>
<td>Physics 2</td>
</tr>
<tr>
<td>HET417</td>
<td>Photonics &amp; Fibre Optics</td>
</tr>
<tr>
<td>HM5213</td>
<td>Engineering Mathematics 3B</td>
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<tr>
<td>Semester 4</td>
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<tr>
<td>HET203</td>
<td>Photonics 2</td>
</tr>
<tr>
<td>HET205</td>
<td>Introduction to Modern Optics</td>
</tr>
<tr>
<td>HET214</td>
<td>Circuits and Electronics 1</td>
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<tr>
<td>HM5214</td>
<td>Engineering Mathematics 4B</td>
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<tr>
<td>Semester 5</td>
<td></td>
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<tr>
<td>HET202</td>
<td>Digital Electronics Design</td>
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<tr>
<td>HET204</td>
<td>Photonics 3</td>
</tr>
<tr>
<td>HET206</td>
<td>Modern Physics</td>
</tr>
<tr>
<td>HIT3072</td>
<td>C++ for Programmers</td>
</tr>
<tr>
<td>Semester 6</td>
<td></td>
</tr>
<tr>
<td>HET209</td>
<td>Fibre Optics Communications &amp; Optical Instrumentation</td>
</tr>
</tbody>
</table>

**Recommended Study Sequence**

**Semester 1**
- HET111  | Energy & Motion
- HET313  | Telecommunications Technologies
- HIT1051 | Software Development 1
- HM5111  | Engineering Mathematics 1

**Semester 2**
- HET103  | Photonics 1
- HET182  | Electronic Systems
- HIT1052 | Software Development 2
- HM5112  | Engineering Mathematics 2

**Semester 3**
- HET105  | Professional Skills - Telecommunications
- HET128  | Physics 2
- HET417  | Photonics & Fibre Optics
- HM5213  | Engineering Mathematics 3B

**Semester 4**
- HET203  | Photonics 2
- HET205  | Introduction to Modern Optics
- HET214  | Circuits and Electronics 1
- HM5214  | Engineering Mathematics 4B

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

**Semester 5**
- HET202  | Digital Electronics Design
- HET204  | Photonics 3
- HET206  | Modern Physics
- HIT3072 | C++ for Programmers

**Semester 6**
- HET209  | Fibre Optics Communications & Optical Instrumentation

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**Entry requirements**

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

**Application procedure**

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

VTAC code: 34011 (CSP), 34012 (Fee), 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

**EATB050 Bachelor of Technology in 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
The Air Transportation Management course prepares students for professional careers in the following areas: airline management, airline flight operations, airline ground operations, airport management, airport operations, airport planning, aviation consultancy firms, aviation charter firms, air services, aviation regulatory and safety services, aviation safety authorities.

Professional recognition
The combined degree fulfills the educational requirements for associate membership of the Institute of Corporate Managers, Secretaries and Administrators, affiliate membership of the Australian Institute of Banking and Finance, initial membership requirements for the Australian Institute of Management.

Course duration
Four years full-time plus six months to one year optional Industry-Based Learning.

Structure
Students must complete thirteen Business subjects and nineteen Air Transportation Management subjects.

Business Subjects
Four of the Five Core Business subjects:
- HBC110 Accounting for Success
- HBE110 Microeconomics
- HBL111 Law in Global Business
- HBM110 The Marketing Concept

The four subjects selected are chosen considering pre-requisite study for later year studies and any professional body requirements that may apply.

Three subjects taken from the Management Major which consists of:
- HBC222 Management Decision Making, OR
- HBC224 Financial Management
- HBH220 Organisation Behaviour and Change, OR
- HBM222 Marketing Planning

One of:
- HBH323 Internation HRM and Diversity, OR
- HBH325 HRM and Entrepreneurship, OR
- HBH330 Leadership and Organisational Dynamics, OR
- HBM 330 Marketing Innovation Management, OR
- HBM 331 Services Marketing and Management

And
- HBM 341 Business Strategy

Plus four subjects taken from any Business Major which consists of:

Year 1

Semester 1
- HES1920 Private Pilot Licence
- HET124 Energy and Motion
- HM 5141 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
- HES2990 Airport Planning, Operation & Management
- HES2940 Aircraft Aerodynamics & Performance
- HES2930 Aircraft Structures
- HES2910 Human Factors & Performance

Semester 2
- HES6720 Risk Perception & Analysis
- HES2915 Airline Planning and Operations
- HES2986 Aviation Regulation, Environment and Operation
- HES2935 Aircraft Maintenance, OR
- HES4985 Airspace Mgt & Air Traffic Serv

Year 3

Semester 1
- HES4990 Aviation Legal Framework

Semester 2
- HES4916 Integrated Safety Management Systems, OR
- HES2945 A/C Design & Operations

Year 4

Semester 1
- Business Subject
- Business Subject
- Business Subject
- Business Subject

Semester 2
- Business Subject
- Business Subject
- Business Subject
- Business Subject

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

2006 VCE Prerequisites: Units 3 & 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, Physics, Specialist Mathematics, Information Technology: Information Systems, Psychology.

2004 Final Clearly-In ENTER: RC
Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34421 (CSP), 34422 (Fee), 34423 (Int. Fee).
For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swin.edu.au/isu

EAB050 Bachelor of Technology in Aviation / Bachelor of Business

This degree prepares students for careers in the air transportation industry as professional pilots. The course incorporates the theory subjects required by the Australian Civil Aviation Safety Authority (CASA) up to Air Transport Pilot Licence (ATPL) standard. Students who successfully complete this course are awarded the degree of Bachelor of Technology (Aviation) and will also gain a Commercial Pilot Licence (CPL). Additionally, professional education in the world of business will be provided.

Aims & Objectives
The aim of the course is to prepare students for careers in the aviation industry as professional pilots. Skill training and education processes are weighted equally in the course where there is a need to provide a high level of both flying 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
The B Tech(Aviation) and B Tech(Aviation)/BBus courses are 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) 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, initial membership requirements for the Australian Institute of Management.

Course duration
Four years full-time.

Structure
Students must complete thirteen business subjects and nineteen aviation subjects.

Business Subjects
Four of the Five Core Business subjects:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBC110</td>
<td>Accounting for Success</td>
</tr>
<tr>
<td>HBE110</td>
<td>Microeconomics</td>
</tr>
<tr>
<td>HBL111</td>
<td>Law in Global Business</td>
</tr>
<tr>
<td>HBM 110</td>
<td>The Marketing Concept</td>
</tr>
<tr>
<td>HIT1025</td>
<td>Introduction to Information Systems</td>
</tr>
</tbody>
</table>

The four subjects selected are chosen considering pre-requisite study for later year studies and any professional body requirements that may apply. Three subjects taken from the Management Major which consists of:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBC225</td>
<td>Human Resource Management in Contemporary Organisations</td>
</tr>
<tr>
<td>HBM 222</td>
<td>Marketing Planning</td>
</tr>
<tr>
<td>HBE323</td>
<td>International HRM and Diversity, OR</td>
</tr>
<tr>
<td>HBB325</td>
<td>HRM and Entrepreneurship, OR</td>
</tr>
<tr>
<td>HBB330</td>
<td>Leadership and Organisational Dynamics, OR</td>
</tr>
<tr>
<td>HBM 330</td>
<td>Marketing Innovation Management, OR</td>
</tr>
<tr>
<td>HBM 331</td>
<td>Services Marketing and Management</td>
</tr>
<tr>
<td>HBM 341</td>
<td>Business Strategy</td>
</tr>
</tbody>
</table>

The four subjects selected are chosen considering pre-requisite study for later year studies and any professional body requirements that may apply. Three subjects taken from the Management Major which consists of:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBC222</td>
<td>Management Decision Making, OR</td>
</tr>
<tr>
<td>HBC224</td>
<td>Financial Management</td>
</tr>
<tr>
<td>HBB220</td>
<td>Organisation Behaviour and Change, OR</td>
</tr>
</tbody>
</table>

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 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.

Course subjects

Year 1

<table>
<thead>
<tr>
<th>Semester 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>HES1900</td>
</tr>
<tr>
<td>HET124</td>
</tr>
<tr>
<td>HM S141</td>
</tr>
<tr>
<td>HES1910</td>
</tr>
</tbody>
</table>

Semester 2

| HES1905    | Commercial Pilot Licence 1           |
| HES1935    | Internal Combustion & Gas Turbine Engines |
| HES1945    | Aircraft Electronics & Avionics      |
| HES1915    | Occupational Health & Safety         |

Year 2

<table>
<thead>
<tr>
<th>Semester 1</th>
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</thead>
<tbody>
<tr>
<td>HES2900</td>
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<td>HES2940</td>
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<tr>
<td>HES2930</td>
</tr>
<tr>
<td>HES2910</td>
</tr>
</tbody>
</table>

Semester 2

| HES2905    | Air Transport Pilot Licence 2        |
| HES2935    | Aircraft Maintenance, OR             |
| HES4916    | Integrated Safety Management Systems, OR |
| HES4985    | Airspace Management & Air Traffic Services |
| HES2986    | Aviation Regulation, Environment and Operation |

Business Subject
### Aviation Business Management

**Semester 2**

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HES4901</td>
<td>HES4903</td>
</tr>
</tbody>
</table>

**Year 4**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester 1</td>
<td>Business Subject</td>
</tr>
<tr>
<td>Semester 2</td>
<td>Business Subject</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.

2006 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, Physics, Specialist Mathematics, Information Technology: Information Systems, or Psychology.

2004 Final Clearly-In ENTER: RC

Applicants should ensure they are able to pass the medical requirements of the Civil Aviation Safety Authority (CASA) Class 1 Medical.

**Application procedure**

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

VTAC code: 34511 (CSP), 34512 (Fee), 34513 (Int. Fee)

Applicants must also submit an application form, available from the Faculty of Engineering and Industrial Sciences by the 30 September.

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

### Biophotonics

**Honours Year**

**Z019 Bachelor of Science (Honours) in Biophotonics**

This course allows students, who have 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**

This course aims to:

- Provide students with the appropriate experimental, analytical, and theoretical skills required for high quality research involving optical technologies.
- Provide students with the resources, both physical and intellectual, to actively participate in frontier research projects.
- Develop students’ communication skills, enabling them to present their ideas clearly by verbal and written means.
- 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).

**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.

**Course subjects**

All subjects have a value of 12.5 credit points unless indicated otherwise.

**Core Subjects**

- HETS511 Honours Research Project (50 credit points)
- HETS512 Research Methods (40 credit points)
- HETS505 Lasers and Advanced Optical Imaging Theory

Choose two from:
The honours program comprises two components:

- **Structure**
  - Four semesters part-time. In exceptional circumstances the program will be available to students, in full-time employment, on a part-time basis. In such a case the duration will be the equivalent of two semesters of full-time study ie. four semesters part-time.

- **Course duration**
  - Two semesters full-time. In exceptional circumstances the program will be available to students, in full-time employment, on a part-time basis. In such a case the duration will be the equivalent of two semesters of full-time study ie. four semesters part-time.

### Entry requirements

Entry to this course is available to academically prepared students. These students must have completed a three-year (pass) degree (or four years for BEng) from Swinburne University of Technology or another recognised university. The pass degree should show strong academic achievement, corresponding to a Credit average or higher. It should also include at least two years of mathematics, and preferably some study of electromagnetism.

### Application procedure

Application forms are available from the Faculty of Engineering and Industrial Sciences.

### Core Subjects

- HET503 Lasers
- HET504 Quantum Mechanics A, OR 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*
- HET511 Honours Research Project (50 credit points)
- HET512 Research Methods (0 credit points)
- HET513 Research Project (50 credit points)

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.

### Course subjects

All subjects have a value of 12.5 credit points unless indicated otherwise.

- **Coursework** (50 credit points)
- **Research project** (50 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.

### Application procedure

Application forms are available from the Faculty of Engineering and Industrial Sciences.
Faculty of Information and Communication Technologies

Information and communication technologies are pervasive in the contemporary world. The capabilities that have emerged as these technologies have converged have enabled wonderful developments in all aspects of life, from space travel to international banking, from human communication by email to interactive television.

At Swinburne, the Faculty of Information and Communication Technologies (ICT) is home to the disciplines of computer science, software engineering, information systems, telecommunications and networks, astronomy and computational science. We offer some of Australia’s most innovative undergraduate programs in IT and telecommunications, as well as challenging postgraduate coursework programs in IT, networks and astronomy, and support several research programs that are recognised as world-class.

Our approach to education is highlighted by the prestigious Bachelor of Information Technology which is sponsored by over 20 of Australia’s top companies with guaranteed scholarships of over $10,000 per annum to every student. The curriculum, which combines the latest in information technology and a strong exposure to the business context in which it is applied, is developed through collaboration with sponsoring companies, with all students spending two 20-week periods in industry working with a sponsoring organisation.

Further information
Phone: +61 3 9214 5505
Fax: +61 3 9819 0823
Email: counter@it.swin.edu.au
Website: www.swinburne.edu.au/ict

E059 Bachelor of Engineering in 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.
- 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 (T&IT) Core Studies
- Software Engineering (T&IT) Studies
- Technical (T&IT) Studies
- Specialist Technical (T&IT) Studies
- Management and Business Studies

Students must complete at least 400 credit points made up of:
- Engineering (T&IT) Core Studies (275 credit points)
- Software Engineering (T&IT) Studies (50 credit points)
- Technical (T&IT) Studies (25 credit points)
- Specialist Technical (T&IT) Studies (12.5 credit points), and
- Management and Business Studies (37.5 credit points)

Course subjects
All subjects have a value of 12.5 credit points unless indicated otherwise.

Engineering (T&IT) Core Studies

HET105 Professional Skills - Telecommunications
HET182 Electronic Systems
HET202 Digital Electronics Design
HET214 Circuits & Electronics 1
HET222 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
HIT3042 Advanced Web Development
HM S111 Engineering Mathematics 1
HM S112 Engineering Mathematics 2
HM S213 Engineering Mathematics 3B
HM S214 Engineering Mathematics 4B

Software Engineering (T&IT) Studies

HIT102 Introduction to Software Engineering

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

Technical (T&IT) Studies
HET1005 Engineering Project
HET104 LAN Principles*
HET410 Network Administration
HET417 Photonics & Fibre Optics
HET424 IP Technologies*

Specialist Technical (T&IT) Studies
HET406 Multimedia Data Processing
HET417 Photonics & Fibre Optics

Management & Business Studies
HB5200 New Venture Development
HES5380 Engineering Management 1
HES5380 Engineering Management 2
HES5385 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
HM 5111 Engineering Mathematics 1

Semester 2
HET182 Electronic Systems
HIT1052 Software Development 2
HM 5112 Engineering Mathematics 2

Choose one of:
HET104 LAN Principles*
HET410 Network Administration
HET1005 Engineering Project

Semester 3
HET202 Digital Electronics Design
HIT3072 C++ for Programmers
HM 5213 Engineering Mathematics 3B

Choose one of:
HET417 Photonics & Fibre Optics
HET424 IP Technologies*

Semester 4
HET214 Circuits & Electronics 1
HIT1031 Introduction to Software Engineering
HIT3041 Advanced Web Development
HM 5214 Engineering Mathematics 4B

Semester 5
HET307 Advanced Routing & Switching
HET314 Communications Principles
HET316 Electromagnetic Waves
HET336 Network Engineering

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

Semester 6
HET232 Embedded Microcontrollers
HET315 Communications Information Theory

HET29 Digital Signal & Image Processing
Management and Business Studies (choose one)

Semester 7
HET436 Broadband Multimedia Networks
HET550 Design & Development Project 1
Management and Business Studies (choose one)
Specialist Technical (T&IT) Studies (choose one)

Semester 8
HET306 UNIX for Telecommunications
HET452 Wireless Communication
HET536 Design & Development Project 2
Management and Business Studies (choose one)

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

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2006 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any) and a study score of at least 20 in one of Mathematical Methods or Specialist Mathematics.
Selection mode: ENTER and two-stage process with a middle-band of approx 20%.
Middle-band selection: Re-ranking based on study scores in Specialist Mathematics and/or Physics.
2004 Final Clearly-In ENTER: 80.30

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34201 (CSP), 34202 (Fee), 34203 (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 via the website at: www.swinburne.edu.au/isu
This course is also offered through the Vice-Chancellor's Scholarship Program. Successful applicants are awarded HECS waiver scholarships and will be funded for the duration of their course. For further information visit the website at: www.swinburne.edu.au/hed/scholarships/vcschol.htm

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 Analyst: 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 twenty-four subjects (or equivalent). The 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.
• Two IT electives, one of which must be at Stage 3.
• Two electives which can be from Arts, Business, Social Science or IT.

In addition to the above, there are two mandatory subjects, both without charge, and with zero credit points. They are:
HIT0103 IT Transition - designed to smooth the entry into tertiary education and learning (taken in the first semester), and
HIT0004 Careers in the Curriculum - designed to fit students for employment, whether Industrial Placement or full-time work (taken in the second 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 Business, Languages, Media or Social Sciences areas.

Course subjects

Stage 1

Semester 1
HIT0103 IT Transition
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
HEE110 Microeconomics, or
HM8111 Quantitative Analysis B

Stage 2

Semester 1
HIT3049 Systems Analysis & Modelling (VB stream), or
HIT2006 Business Computing (Java stream)
HIT3017 Database 2
HBH110 Organisation & Management
HBM 110 The Marketing Concept

Semester 2
HIT0004 Careers in the Curriculum
HIT3185 Data Communications & Networks (either stream), or
HIT2210 Data Communications & Security (Java stream)
Elective
Elective
Elective

Stage 3
HIT3101 Optional IBL Year

Stage 3 or 4

Semester 1
HIT3136 Information Technology - A Critical Review
Elective
Elective
Elective

Semester 2
HIT3034 Information Systems Project
HIT3044 Professional Issues in Information Technology
Elective
Elective

Electives
Possible electives include the following:
HIT2005 IT Infrastructure
HIT2024 Introduction to Human-Computer Interaction
HIT2082 Advanced Web Technologies
HIT3007 Business Computing Applications
HIT3018 Database 3
HIT3072 C++ for Programmers
HIT3084 E-Commerce - A Business Perspective
HIT3120 Component Based Development .NET
HIT3149 Analysis Modelling & Design (Java stream only)
HIT4071 Research Project
HBSG200 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.
2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any). Passes may be accumulated over more than one year.
2004 Final Cleanly-In ENTER: 82.65

Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and have at least five years related work experience, may be considered for admission if they can demonstrate motivation and ability to succeed.

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

Campus
Hawthorn

Career opportunities
Graduates of the Bachelor of Information Technology will be well equipped to meet the requirements of both industrial and commercial organisations for information technology specialists. Technical skills such as systems analysis and design and project management are sought after by industry, with good opportunities available for progressing into management and leadership positions. Since the commencement of the course all BIT graduates have obtained relevant positions in IT-related fields and positions including: 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.
J 060 Bachelor of Multimedia in 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 in-depth 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.

Note: students who wish to study a course which includes advanced computer programming and the development of complex, web-based systems should apply to study the Bachelor of Science (Computer Science and Software Engineering). Students who wish to undertake a course which develops advanced skills in software engineering should apply to study the Bachelor of Software Engineering.

Aims & Objectives
- To provide the knowledge and skills necessary to become a multimedia programmer.
- To provide a foundation in the technical aspects of multimedia software development through knowledge in the fundamental areas of database, data communications, multimedia systems and software development.
- To provide knowledge and skills enabling the development and engineering of usable systems integrating different media types.
- To provide the skills and knowledge to enable the development of different types of media, including 3-D animations and the main media elements.

Campus
Hawthorn

Career opportunities
Graduates of this course will be well equipped to meet the predicted growth in industry demand for professionals in multimedia and web design. They will have extensive skills in software development using an object-oriented approach, Java programming, and multimedia design. They also will have developed experience in a broad range of creative and design aspects of multimedia and Internet technologies.

Professional recognition
This degree is accredited at professional level towards membership of the Australian Computer Society.

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 time-tableing and resource constraints.

Course subjects
Stage 1
Semester 1
HDMD101 Design for Multimedia 1
HET113 The Internet & WWW 1
HIT1003 IT Transition Program
HIT1015 Computer Systems
HIT1052 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. The course is primarily intended for high achieving school leavers. Only Australian citizens or permanent residents are eligible to apply.

2006 VCQ Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any) and M mathematics (any).

2004 ENTER: RC
Prior to selection into the course, all short-listed candidates are required to attend a briefing session on the course and an interview. The briefing explains in detail about the course and is designed to ensure students enter the course with realistic expectations. Interviews are non-technical and assess the candidate’s suitability for the course. Selection is based upon academic merit and interview.

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

VTAC code: 34311C(SP)

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 University of Technology, School of Information Technology by September. To receive a Swinburne Bachelor of Information Technology application form please contact the Undergraduate Administrative Officer on (03) 9214 8763 or via our website at: www.it.swinburne.edu.au/courses/forms/bitmapform.pdf where the form is available as a Microsoft document. Interviews will be held shortly after the end of the VCE examinations. Deferred or offered places will not be possible.
2004 Final Clearly-In ENTER: 82.65
Applicants who do not satisfy the above requirements may be selected after consideration of their employment and educational background.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34091(CSP), 34092 (Fee), 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/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

J 043 Bachelor of Multimedia in 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/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 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
- Elective Studies

Students must complete at least 300 credit points made up of:

- Core Multimedia Studies (100 credit points)
- Further Multimedia Studies (50 credit points)
- Co-major Studies Group A (75 credit points)
- Co-major Studies Group B (37.5 credit points)
- Elective Studies (12.5 credit points)
- Co-major Studies Group B and/or Elective Studies (25 credit points)

**Course subjects**

All subjects have a value of 12.5 credit points unless indicated otherwise.

**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
- HIT2092 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 Interactive Multimedia

**Co-major Studies Group A**

- HET104 LAN Principles*
- HET306 UNIX for Telecommunications
- HET307 Advanced Routing & Switching
- HET410 Network Administration (MCSE)
- HET424 IP Technologies*
- HIT1051 Software Development 1

**Co-major Studies Group B**

- HIT1031 Introduction to Software Engineering
- HIT1052 Software Development 2
- HIT2110 Programming in VB.NET
- HIT3017 Database 2
- HIT3044 Professional Issues in Information Technology
- HIT3072 C++ for Programmers
- HIT3087 Advanced Java
- HIT3149 Analysis, Modelling and Design

**Elective Studies**

- HAM113 Professional Communication Practice
- HBSG200 New Venture Development & Management
- HES3380 Engineering Management 1
- HET313 Telecommunication Technologies
- HIT2253 Data Structures and Algorithms
- HIT3002 Introduction to Artificial Intelligence
- HM S111 Engineering Mathematics 1
- HM S112 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

**Recommended Study Sequence**

**Semester 1**

- HDMD101 Design for Multimedia 1
- HET113 The Internet & WWW 1
- HIT1051 Software Development 1

Choose 1 of:

- HM S111 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:

- HET123 The Internet & WWW 2#
- HIT2092 Advanced Web Technologies #

**Semester 3**

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

**Semester 4**

- HIT1031 Introduction to Software Engineering

Choose 2 of:

- HIT208 3D Animation & Special Effects
- HET222 Digital Video & Audio
- HET332 Interactive Multimedia

**Optional IBL year**

- HET300 Industry-Based Learning
- HET400 Industry-Based Learning

**Semester 5**

- HET306 UNIX for Telecommunications
- HET410 Network Administration

**Semester 6**

- HIT2110 Programming in VB.NET
- HIT3072 C++ for Programmers
- HIT3087 Advanced Java
- HIT3149 Analysis, Modelling and Design

**Semester 5**

- HET307 Advanced Routing & Switching
- HET401 Multimedia Project 1
- HET407 Multimedia Technology

Choose 1 of:

- HIT2110 Programming in VB.NET
- HIT3072 C++ for Programmers
- HIT3087 Advanced Java
- HIT3149 Analysis, Modelling and Design

**Semester 6**

- HET402 Multimedia Project 2

Choose 2 of:

- HIT208 3D Animation & Special Effects
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**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 j ava as the first programming language, recognising the role of this language in the development of web-based systems. Students then develop skills in the C++ programming language.

Graduates of this course will have extensive skills in software development, particularly relating to medium and large scale projects, will have developed experience in working on team projects, and will have well developed oral and written communication skills. The course involves the use of the most up-to-date technology and methods, and includes a major emphasis on software development for multimedia applications on the web. The course is oriented towards applications in areas such as defence, aerospace and medicine, where complex software plays a major role, often of a safety-critical nature, as well as in businesses that require extensive computer support, such as banking and manufacturing.

**Aims & Objectives**

Graduates of this course will possess:

- The skills necessary for working in a software development team on a large scale project.
- A deep understanding of the process of software development.
- Skills in the object-oriented approach to systems analysis, design and implementation.
- A high level of skill in developing software in J ava 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.

**Entry requirements**

Successful completion of an appropriate Victorian Year 12 or its equivalent. 2006 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any) and a study score of at least 20 in one of Mathematical Methods or Specialist Mathematics.

Selection mode: ENTER and two-stage process with a middle-band of approximately 20%.

Middle-band selection: Consideration given to VCE studies (Units 3 & 4) with a score of at least 20 in Art, Information Technology: Information Systems, Music (any), Physics, Specialist Mathematics, Studio Arts, VET Multimedia, VET Information Technology or Visual Communication and Design.

2004 Final Clearly-In ENTER: $1,00

**Course subjects**

**Stage 1**

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
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<tbody>
<tr>
<td>HIT1013</td>
<td>HIT1072</td>
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<tr>
<td>IT Transition Program</td>
<td>Introduction to Information Systems</td>
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<tr>
<td>HIT1015</td>
<td>HIT1031</td>
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<tr>
<td>Computer Systems</td>
<td>Introduction to Software Engineering</td>
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<tr>
<td>HIT1051</td>
<td>HIT1052</td>
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<tr>
<td>Software Development 1</td>
<td>Software Development 2</td>
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<tr>
<td>HIT1092</td>
<td>HIT2016</td>
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<tr>
<td>Web Development</td>
<td>Database 1</td>
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<td>HIT2056</td>
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**Stage 2**

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<tr>
<th>Semester 1</th>
<th>Semester 2</th>
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<tr>
<td>HIT10004</td>
<td>HIT1072</td>
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<tr>
<td>Careers in the Curriculum</td>
<td>Introduction to Information Systems</td>
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<tr>
<td>HIT2024</td>
<td>HIT1031</td>
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<tr>
<td>Introduction to Human-Computer Interaction</td>
<td>Introduction to Software Engineering</td>
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<tr>
<td>HIT2056</td>
<td>HIT1052</td>
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<tr>
<td>Software Project Management</td>
<td>Software Development 2</td>
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<tr>
<td>HIT2092</td>
<td>HIT2253</td>
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<tr>
<td>Advanced Web Technologies</td>
<td>Data Structures And Algorithms</td>
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<td>HIT2243</td>
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<tr>
<td>Data Communications &amp; Security</td>
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<td>HIT3149</td>
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<td>Analysis Modelling &amp; Design</td>
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<tr>
<td>HIT3054</td>
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<tr>
<td>C++ for J ava Programmers</td>
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**Stage 3**

| HIT3101              |
| Optional Industry-Based Learning (JBL Year) |
Z160Y Bachelor of Science in 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 further exemptions.

Course subjects

Stage 1

Semester 1

HIT101 Software Development 1
HIT1092 Web Development
HIT2016 Database 1
HIT2024 Introduction to Human-Computer Interaction

Semester 2

HIT0004 Careers in the Curriculum

Further information is available on the VTAC website: www.vtac.edu.au
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 eight to ten 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 eight subjects over two normal semesters. Students who have completed a diploma in information systems or in systems completion a subject in the shorter summer semester. Students who have completed a subject in the shorter summer semester.

Course subjects

Introduction to Artificial Intelligence
Programming Business Systems
Database 3
Real Time Programming
C++ for Java Programmers
Software Maintenance Project
Software Testing and Reliability
UNIX Systems Programming
eCommerce - A Business Perspective
Advanced Java
XMl Technologies
Enterprise .NET
Information Technology - A Critical Review
Multimedia for the WWW
Object-Oriented Modelling
Multi-Agent Systems
Large Scale System Design
Skills in the object-oriented approach to systems analysis, design and development. A deep understanding of the process of software development.

The skills necessary for working in a software development team on a large scale. Advanced skills in management of resources and technology, as required of an engineering professional.

Knowledge of the methods (the management principles underpinning contemporary Software Engineering).

Knowledge of the fundamentals of Mathematics, Computer Science and related disciplines. It provides students with the knowledge and practice base characterising the graduate engineer.

Graduates 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.

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 8647 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 study 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 will possess:

- 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 oriented 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.

Course subjects

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Semester 1</th>
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<tbody>
<tr>
<td>HIT103</td>
<td>IT Transition Program</td>
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<tr>
<td>HIT115</td>
<td>Computer Systems</td>
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<tr>
<td>HIT1151</td>
<td>Software Development 1A</td>
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<td>HIT206</td>
<td>Database 1</td>
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<td>HM S111</td>
<td>Engineering Mathematics 1</td>
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<tr>
<th>Semester 2</th>
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<tr>
<td>HIT1031</td>
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<td>HIT1152</td>
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<tr>
<td>HIT182</td>
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<tr>
<th>Stage 2</th>
<th>Semester 1</th>
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<td>HIT2024</td>
<td>Introduction to Human-Computer Interaction</td>
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<tr>
<td>HIT2056</td>
<td>Software Project Management</td>
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<tr>
<td>HIT2253</td>
<td>Data Structures &amp; Algorithms</td>
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<td>HM S213</td>
<td>Engineering Mathematics 3B</td>
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<th>Semester 2</th>
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<td>HIT3054</td>
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<td>HIT3041</td>
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<tr>
<td>HIT2092</td>
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<td>HM S214</td>
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</tbody>
</table>
Availability of electives is subject to timetabling and resource constraints. IT Electives

Note: Students choosing this stream may be permitted to study an additional 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
HET306 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
HES5250 Robotic System Design

Electives

Availability of electives is subject to timetabling and resource constraints. IT electives to be offered may include the following:

HIT3017 Database 2
HIT3047 Real-Time Programming
HIT3047 Engineering Minor Stream

Semester 2

HIT3055 Software Maintenance Project
HIT3057 Software Testing and Reliability
HIT3149 Analysis Modelling & Design
HIT3197 Advanced .NET Programming
HIT3243 Games Programming
HIT4071 Research Project
HIT4189 Usability Engineering

Entry requirements

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

2006 VCE Prerequisites: Units 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 & 4 Physics. Information Technology: Information Systems and/or Specialist Mathematics.

Passes may be accumulated over more than one year.

2004 Final Clearly-In ENTER: 81.00; Fringe ENTER: 82.30

Applicants who do not satisfy the above requirements may be selected after consideration of their employment and educational background.

Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34961(CSP), 34962 (Fees), 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: https://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 Degrees

EO69Y Bachelor of Engineering in Telecommunications and Internet Technologies / Bachelor of Science in 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

This double degree course aims to:

- Develop in students a broad mastery of the basic science and engineering principles underlying telecommunications and internet technologies, including the computing technologies (hardware and software), and an ability to apply that knowledge.
- Develop in students a thorough understanding of appropriate engineering methods and techniques, and competence in their application, so that students are able to comprehend and analyse problems and obtain satisfactory design solutions which, where appropriate, show originality and resourcefulness.
• Develop students' communication skills so that they can present their ideas clearly by verbal, 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.
• 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. Students choose subjects from four Subject Groups:

• T&IT and Software Engineering Core Studies
• Technical (T&IT) Studies
• Specialist Technical (T&IT) Studies
• Management and Business Studies

Students must complete at least 500 credit points made up of:

• T&IT and Software Engineering Core Studies (425 credit points)
• Technical (T&IT) Studies (25 credit points)
• Specialist Technical (T&IT) Studies (22.5 credit points)
• Management and Business Studies (37.5 credit points)

Course subjects
All subjects have a value of 12.5 credit points unless indicated otherwise.

T&IT and Software Engineering Core Studies
HET105 Professional Skills - Telecommunications
HET112 Electronic Systems
HET202 Digital Electronics Design
HET214 Circuits & Electronics 1
HET220 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
HET352 Design & Development Project
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
HIT2253 Data Structures and Algorithms
HIT3002 Introduction to Artificial Intelligence
HIT3041 Advanced Web Development
HIT3044 Professional Issues in Information Technology
HIT3058 Software Engineering Project (50 credit points)
HIT3072 C++ for Programmers
HIT3149 Analysis Modelling & Design
HM5111 Engineering Mathematics 1
HM5112 Engineering Mathematics 2
HM5213 Engineering Mathematics 3B
HM5214 Engineering Mathematics 4B

Technical (T&IT) Studies
HET1005 Engineering Project
HET104 LAN Principles*
HET410 Network Administration
HET417 Photonics & Fibre Optics
HET424 IP Technologies*
Specialist Technical (T&IT) Studies
HET406 Multimedia Data Processing
HET417 Photonics & Fibre Optics
HIT3017 Database 2

Management & Business Studies
HBSG200 New Venture Development
HES3380 Engineering Management 1
HES5380 Engineering Management 2
HES5385 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
HM 5111 Engineering Mathematics 1

Semester 2
HET182 Electronic Systems
HIT1052 Software Development 2
HM 5112 Engineering Mathematics 2
Choose one of:
HET1005 Engineering Project
HET104 LAN Principles*
HET410 Network Administration

Semester 3
HET202 Digital Electronics Design
HIT3072 C++ for Programmers
HM 5213 Engineering Mathematics 3B
Choose one of:
HET417 Photonics & Fibre Optics
HET424 IP Technologies*

Semester 4
HET214 Circuits & Electronics 1
HIT3031 Introduction to Software Engineering
HIT3041 Advanced Web Development
HM 5214 Engineering Mathematics 4B

Semester 5
HET307 Advanced Routing & Switching
HET314 Communications Principles
HIT336 Network Engineering
HIT2253 Data Structures and Algorithms

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

Semester 6
HET322 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
HIT3149 Analysis Modelling & Design

Semester 9
HET436 Broadband Multimedia Networks
HIT3002 Introduction to Artificial Intelligence
HIT3058 Software Engineering Project A
Management and Business Studies (choose one)

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

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2006 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any) and a study score of at least 20 in one of Mathematical Methods or Specialist Mathematics.
Selection mode: ENTER and two-stage process with a middle-band of approximately 20%.
Middle-band selection: Re-ranking based on study scores in Information Technology: Information Systems, Physics and/or Specialist Mathematics.
2004 Final Clearly-In ENTER: 83.60

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34791 (CSP), 34792 (Fee), 34793 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
This course is also offered through the Vice-Chancellor’s Scholarship Program. Successful applicants are awarded HECS waiver scholarships and will be funded for the duration of their course. For further information visit the website at: www.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

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.
Students must satisfy the course requirements of both the Bachelor of Information Systems and the Bachelor of Business to be eligible for the double degree.

Aims & Objectives
The course is designed to provide students with a complete study of business practices leading to a choice of generalist or specialist career in the utilisation of information technology to solve business problems.

Campus
Hawthorn
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
- Eight electives, split as follows:
  - A minimum of two and a maximum of four must be IT (at least one at Level 3).
  - The balance (four to six) may be from Business, Arts or Social Science (in any combination).

In addition to the above, there are two mandatory subjects, both without charge and with zero credit points. They are:

HIT0103 IT Transition - designed to smooth the entry into tertiary education and learning (taken in the first semester), and

HIT0004 Careers in the Curriculum - designed to fit students for employment, whether Industrial Placement or full-time work (taken in the 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). Students must meet the prerequisite requirements of the elective they select.

Availability of all electives is subject to timetabling and resource constraints.

The available business disciplines are:

- Accounting
- Business Law
- Economics
- Finance
- Human Resource Management/Organisation Behaviour
- Manufacturing Management
- Marketing

Arts and Social Science electives could include:

- Australian studies
- Cultural studies
- Italian
- Japanese
- Literature
- Media studies
- Political studies
- Psychology
- Philosophy and Cultural Inquiry

Course subjects

Stage 1

Semester 1

HIT0103 IT Transition
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

Stage 2

Semester 1

HIT3049 Systems Analysis & Modelling (VB stream), or
HIT2006 Business Computing (Java stream)
HIT3017 Database 2
HBE110 Microeconomics
HBM110 Organisation & Management

Semester 2

HIT3185 Data Communications & Networks (either stream), or
HIT2120 Data Communications & Security (Java stream)
HBL111 Law in Global Business
HM B111 Quantitative Analysis

Elective
**Stage 3**

**Semester 1**

| HIT0004 | Careers in the Curriculum |
| HIT3136 | Information Technology - A Critical Review |

Elective

Elective

**Semester 2**

| HIT3034 | Information Systems Project |
| HIT3044 | Professional Issues in Information Technology |

Elective

Elective

**Stage 4**

Optional year of Industry-Based Learning (IBL)

**Stage 5**

**Semester 1**

| 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 |
| HIT4071 | Research Project |

**IT Electives**

Possible electives include the following:

| 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 |
| HIT4071 | Research Project |

**Entry requirements**

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

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).

Passes may be accumulated over more than one year.

2004 Final Clearly-In ENTER: 82.65

Applicants who do have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and have at least five years related work experience, may be considered for admission if they can demonstrate motivation and ability to succeed.

**Application procedure**

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

VTAC Code: 34561 (CP), 34562 (Fee), 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/vschol.htm

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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**J032 Bachelor of Multimedia in Networks and Computing / Bachelor of Engineering in 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**

This double degree program aims 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.
- 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 analyze 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 produce 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.
- 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/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 Rules, subject to timetable constraints and prerequisite studies being met.

Students study subjects chosen from five Subject Groups:
- **Engineering & Multimedia (N&C/T&IT) Core Studies**
- **Technical (N&C/T&IT) Studies**
- **Software Engineering (N&C/T&IT) Studies**
- **Management and Business Studies**

Students must complete at least 500 credit points made up of:
- **Engineering & Multimedia (N&C/T&IT) Core Studies** (37.5 credit points)
- **Software Engineering (N&C/T&IT) Studies** (50 credit points)
- **Technical (N&C/T&IT) Studies** (37.5 credit points)
- **Management and Business Studies** (37.5 credit points)

**Course subjects**
All subjects have a value of 12.5 credit points unless indicated otherwise.

<table>
<thead>
<tr>
<th><strong>Engineering &amp; Multimedia (N&amp;C/T&amp;IT) Core Studies</strong></th>
<th><strong>Course</strong></th>
<th><strong>Title</strong></th>
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<tbody>
<tr>
<td>HET313</td>
<td>Telecommunication Technologies</td>
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<tr>
<td>HET314</td>
<td>Communications Principles</td>
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<tr>
<td>HET315</td>
<td>Communications Information Theory</td>
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<td>HET336</td>
<td>Network Engineering</td>
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<td>HET436</td>
<td>Broadband Multimedia Networks</td>
<td></td>
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<tr>
<td>HET452</td>
<td>Wireless Communications</td>
<td></td>
</tr>
<tr>
<td>HMS111</td>
<td>Engineering Mathematics 1</td>
<td></td>
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<tr>
<td>HMS112</td>
<td>Engineering Mathematics 2</td>
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<tr>
<td>HMS213</td>
<td>Engineering Mathematics 3B</td>
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<tr>
<td>HMS214</td>
<td>Engineering Mathematics 4B</td>
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<tr>
<td>HET182</td>
<td>Electrical Systems</td>
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<tr>
<td>HET202</td>
<td>Digital Electronics Design</td>
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<tr>
<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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<tr>
<th><strong>Recommended Study Sequence</strong></th>
<th><strong>Semester 1</strong></th>
<th><strong>Course</strong></th>
<th><strong>Title</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>HDM D101</td>
<td>Design for Multimedia 1</td>
<td></td>
<td></td>
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<tr>
<td>HET313</td>
<td>Telecommunication Technologies</td>
<td></td>
<td></td>
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<tr>
<td>HIT1051</td>
<td>Software Development 1</td>
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</tr>
</tbody>
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<tr>
<th><strong>Semester 2</strong></th>
<th><strong>Course</strong></th>
<th><strong>Title</strong></th>
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</thead>
<tbody>
<tr>
<td>HDM D102</td>
<td>Design for Multimedia 2</td>
<td></td>
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<tr>
<td>HIT1052</td>
<td>Software Development 2</td>
<td></td>
</tr>
</tbody>
</table>

**Semester 3**

Choose one of:
- HET104: LAN Principles*
- HIT2092: Advanced Web Technologies#
Choose one of:
HET417 Photonics & Fibre Optics
HET424 IP Technologies *

Semester 4
HET182 Electronic Systems
HET208 3D Animation & Special Effects
HET222 Digital Video & Audio
HM S112 Engineering Mathematics 2

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

Semester 5
HET202 Digital Electronics Design
HET407 Multimedia Technology
HIT2016 Database 1
HM S213 Engineering Mathematics 3B

Semester 6
HET214 Circuits & Electronics 1
HIT3072 C++ for Programmers
HM S214 Engineering Mathematics 4B
Management and Business (N&G) Studies (choose one)

Semester 7
HET307 Advanced Routing & Switching
HET314 Communications Principles
HET316 Electromagnetic Waves
HET336 Network Engineering

Semester 8
HET232 Embedded Microcontrollers
HET315 Communications Information Theory
HET329 Digital Signal & Image Processing
Management and Business (N&G) Studies (choose one)

Semester 9
HET406 Multimedia Data Processing
HET436 Broadband Multimedia Networks
HET550 Design & Development Project 1
Management and Business (N&G) Studies (choose one)

Semester 10
HET506 UNIX for Telecommunications
HET552 Wireless Communications
HET556 Design & Development Project 2
Choose one of:
HET525 Principles of Game Design
HET332 Interactive Multimedia

* Students who have not completed an approved Cisco Networking Academy Program (CNAP) must do HET104 and HET424.
# Students may only complete one of HET123 and HIT2092

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent. 2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any) and a study score of at least 20 in one of Mathematical Methods or Specialist Mathematics.
Selection mode: ENTER and two-stage process with a middle-band of approximately 20%.
Middle-band selection: Re-ranking based on study scores in Physics, Specialist Mathematics and/or Information Technology: Information Systems.
2004 Round 1 Clearly-in ENTER: B1.00

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34111(CSP), 34112 (Fee), 34113 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
This course is also offered through the Vice-Chancellor's Scholarship Program. Successful applicants are awarded HECS waiver scholarships and will be funded for the duration of their course. For further information visit the website at: www.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

EO62Y Bachelor of Science in Research and Development / Bachelor of Engineering in 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/hed/scholarships/vcsschol.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 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.
- 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 year of their degree. Examples of projects can be found at http://astronomy.swinburne.edu.au/~cfluke/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

Students must complete at least 500 credit points made up of:
- Engineering & Science (R&D) Core Studies (375 credit points)
- Software Engineering Studies (37.5 credit points)
- Management and Business Studies (37.5 credit points)
- Technical (R&D) Studies and Specialist Technical (R&D) Studies (50 credit points)

Course subjects
All subjects have a value of 12.5 credit points unless indicated otherwise.

Engineering & Science (R&D) Core Studies
HEF1000 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
HET601 Research and Development Project 6
HET701 Research and Development Project 7
HIT3138 Intelligent Systems
HMS5111 Engineering Mathematics 1
HMS5112 Engineering Mathematics 2
HMS5213 Engineering Mathematics 3B
HMS5214 Engineering Mathematics 4B

Technical (R&D) Studies
HET104 LAN Principles
HET308 Circuits & Electronics 2
HET316 Electromagnetic Waves
HET313 Design of DSP Architectures
HET315 Advanced Embedded Systems

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

Specialist Technical (R&D) Studies
HET103 Photonics 1
HET133 Human Physiology
HET226 Sensor Systems
HET227 Neurophysiology
HET419 Physiological Modelling
HET425 Nucleonics and Spectroscopy
HET504 Quantum Mechanics A
HET603 Exploring Stars and the Milky Way*
HET604 Exploring Galaxies and the Cosmos*
HET611 Stellar Astrophysics*
HIT2024 Introduction to Human Computer Interaction
HIT2253 Data Structures and Algorithms

Management and Business Studies
HBSG200 New Venture Development & Management
HE5380 Engineering Management 1
HE5380 Engineering Management 2
HE5385 Engineering Management 3

* Students may not take more than two of HET603, HET604 or HET611

Note:
Not all subjects are offered every semester.
Some subjects may be only offered subject to sufficient enrolments.

Recommended Study Sequence
Semester 1
HEF1000 Professional Engineering
HET102 Introductory Physiology
HET124 Energy & 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
HET603 Exploring Stars and the Milky Way

Semester 3
HET101 Research and Development Project 1
HET182 Electronic Systems
HMS112 Engineering Mathematics 2
Choose one of:
HET133 Human Physiology
HET603 Exploring Stars and the Milky Way

Semester 4
HET128 Physics 2
HET202 Digital Electronics Design
HIT1051 Software Development 1
HMS5213 Engineering Mathematics 3B

Swinburne University of Technology | Undergraduate Course Handbook 2005
Semester 5
HET305 Research and Development Project 3
HET314 Communications Principles
HET378 Integrated Circuit Design
Technical (R&D) and Specialist Technical (R&D) Studies (choose one)

Semester 6
HET232 Embedded Microcontrollers
HET299 Digital Signal & Image Processing
Technical (R&D) and Specialist Technical (R&D) Studies (choose two)

Semester 7
HET405 Research and Development Project 4

Semester 8
HET315 Communications Information Theory
HET501 Research and Development Project 5
HIT3072 C++ for Programmers
HIT3138 Intelligent Systems

Semester 9
HET312 Control and Automation
HET417 Photonics and Fibre Optics
HET601 Research and Development Project 6
Management and Business Studies (choose one)

Semester 10
HET416 Computer Systems Engineering
HET701 Research and Development Project 7
Management and Business Studies (choose two)

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), Physics, and in Mathematical Methods or Specialist Mathematics.
Selection mode: ENTER and interview.
Minimum ENTER of 90.00

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34041 (CSP), 34042 (Fee).
For further information, visit the VTAC website at: www.vtac.edu.au

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.

The Honours course is a recognised point of entry into postgraduate research studies (see PhD scholarships at www.it.swinburne.edu.au/centres/scholarships.htm). Students concentrate on their chosen major area, gaining a better understanding and practising appropriate research techniques. The requirement to complete a substantial original piece of research for their thesis ensures that honours graduates develop their abilities to conceptualise problems, devise research strategies and carry out individual research work under the supervision of a member of staff with expertise in the area.

Campus
Hawthorn

Career opportunities
The course's strong orientation to research instructs students in the principles and techniques of original research and prepares them for areas of professional employment in which conceptual, organisational and research skills are in demand.

Course duration
One year full-time.

Structure
Honours students enrol in an equivalent of eight subjects: four coursework subjects and an Honours thesis equivalent to four subjects. The course consists of components with a breakdown of workload as follows:

- HIT4000 Honours Research Project (50 credit points)
- Coursework (50 credit points) comprising:
  - HIT4010 Research Methods (12.5 credit points)
  - Three honours elective 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
HIT4000 Honours Research Project
HIT4010 Research Methods
Elective 1
Elective 2

Semester 2
HIT4000 Honours Research Project
Elective 3

Entry requirements
To be eligible for admission to the Honours course, a student must have demonstrated a high level of academic achievement overall and an excellent academic record in their chosen major study.
A student who holds a Bachelors (pass) degree from Swinburne University of Technology or another recognised university (or equivalent) or is eligible to graduate with a Bachelors (pass) degree may be admitted to the Honours course.

Application procedure
The application form is available for downloading at www.it.swinburne.edu.au/centres/honours.htm
I051 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.

The honours course is a recognised point of entry into postgraduate research studies (see PhD scholarships at www.it.swinburne.edu.au/centres/scholarships.htm). Students concentrate on their chosen major area, gaining a better understanding and practising appropriate research techniques. The requirement to complete a substantial original piece of research for their thesis ensures that honours graduates develop their abilities to conceptualise problems, devise research strategies and carry out individual research work under the supervision of a member of staff with expertise in the area.

Campus
Hawthorn

Career opportunities
For students wishing to seek employment following their Honours degree, the course affords the opportunity to extend their knowledge of information technology and to specialise in an area within it. The course's strong orientation to research instructs students in the principles and techniques of original research and prepares them for areas of professional employment in which conceptual, organisational and research skills are in demand.

Course duration
One year full-time.

Structure
Honours students enrol in an equivalent of eight subjects: four coursework subjects and an Honours thesis equivalent to four 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
HIT4000 Honours Research Project
HIT4010 Research Methods
Elective 1
Elective 2

Semester 2
HIT4000 Honours Research Project
Elective 3

Entry requirements
To be eligible for admission to the Honours course, a student must have demonstrated a high level of academic achievement overall and an excellent academic record in their chosen major study.

A student who is eligible to graduate with, or already holds a Bachelor of Information Technology (pass) degree from Swinburne University of Technology may also be admitted to the Honours course.

Application procedure
The application form is available for downloading at www.it.swinburne.edu.au/centres/honours.htm

Z065Y Bachelor of Science (Honours) in Computer Science

The Honours year is intended to provide students, with demonstrated academic ability, the opportunity to pursue their undergraduate studies to an advanced level, to deepen their intellectual understanding in their major field and to develop their research skills.

The honours course is a recognised point of entry into postgraduate research studies (see PhD scholarships at www.it.swinburne.edu.au/centres/scholarships.htm). Students concentrate on their chosen major area, gaining a better understanding and practising appropriate research techniques. The requirement to complete a substantial original piece of research for their thesis ensures that honours graduates develop their abilities to conceptualise problems, devise research strategies and carry out individual research work under the supervision of a member of staff with expertise in the area.

Campus
Hawthorn

Career opportunities
For students wishing to seek employment following their Honours degree, the course affords the opportunity to extend their knowledge of information technology and to specialise in an area within it. The course's strong orientation to research instructs students in the principles and techniques of original research and prepares them for areas of professional employment in which conceptual, organisational and research skills are in demand.

Course duration
One year full-time

Structure
Honours students enrol in an equivalent of eight subjects: four coursework subjects and an Honours thesis equivalent to four 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
HIT4000 Honours Research Project
HIT4010 Research Methods
Elective 1
Elective 2

Semester 2
HIT4000 Honours Research Project
Elective 3

Entry requirements
To be eligible for admission to the Honours course, a student must have demonstrated a high level of academic achievement overall and an excellent academic record in their chosen major study.

A student who holds a Bachelors (pass) degree from Swinburne University of Technology or another recognised university (or equivalent) or is eligible to graduate with a Bachelors (pass) degree may also be admitted to the Honours course.

Application procedure
The application form is available for downloading at www.it.swinburne.edu.au/centres/honours.htm
Faculty of Life and Social Sciences

We are living during a time of rapid technological innovation, described by some as the ‘information Age’, or the ‘Third Industrial Revolution’. The extraordinary technological changes have led to new economic, political and social institutions and have given rise to new forms of everyday life, relationships, artistic expression, new choices and ethical dilemmas.

The Faculty of Life and Social Sciences is an innovative combination of disciplines, from the life and neurological sciences to the social sciences and humanities. It provides a unique platform for cross-disciplinary teaching and research at the cutting edge of technological innovation, including its behavioural and social dimensions.

It is the largest of Swinburne’s five faculties, with more than 180 academic, administrative, research and technical support staff and more than 150 postgraduate research students.

There is high demand for undergraduate programs within the Faculty, particularly in the areas of media and communications, psychology, sociology, multimedia and psychophysiology. According to the 2005 Good Universities Guide to Universities and Private Colleges graduates of our sciences and psychology courses have employment rates among the highest levels of all Victorian graduates in these disciplines.

Both undergraduate and postgraduate programs attract an increasing number of international students, particularly in the area of multimedia. There is growing international interest in the biotechnology and biomedical sciences disciplines, which is expected to result in increasing enrolments of students from overseas in the next few years.

With its breadth of courses and demonstrated excellence in research, the faculty is well placed to continue to deliver high quality education and research outcomes to the local and international community, and government and industry partners in research and consultancy.

Further information
Tel: +61 3 9214 8859
Fax: +61 3 9819 0574
Email: sbsadmin@swin.edu.au or bsee@swin.edu.au
Website: www.swinburne.edu.au/lss

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.
• Students who commenced in 2003 and 2004 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.
• Students commencing in 2005 or later may not complete a Business major, but may complete a Business minor. NOTE: Students completing either a Business major or minor are not permitted to complete any further subjects outside Arts and Social Sciences.
• Students may complete a maximum of five subjects (excluding HM A103, HM A104, HM A278 and HM A279) outside Arts and Social 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/Specialisation
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 from Arts or Social Science.

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 minors:
• Accounting
• Asian Business
• Business Law
• Economics
• eMarketing
• European Business
• Finance
• Human Resource M anagement/Organisation Behaviour
• Information Systems
• International Business
• M anufacturing M anagement
• M arketing

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.
2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).
2004 Final Clearly-In ENTER: 80.30
Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and have at least five years related work experience, may be considered for admission if they can demonstrate motivation and ability to succeed. Because of restrictions on the number of places, not all eligible applicants can be offered a place.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34321(CSP), 34322 (Fee), 34323 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
Part-time study is also available to Australian citizens and holders of Australian residency.
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

Arts Specialisations

Australian Studies
Australian Studies examines Australian society and its cultures from several different disciplinary 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 are as follows:

Stage 1

<table>
<thead>
<tr>
<th>Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAM 105</td>
<td>The Media in Australia</td>
</tr>
<tr>
<td>HAP 100</td>
<td>Australian Politics</td>
</tr>
<tr>
<td>HAS 101</td>
<td>Sociology 1B (Social Institutions and Social Change)</td>
</tr>
</tbody>
</table>

Stage 2

<table>
<thead>
<tr>
<th>Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAL 209</td>
<td>Australian Writing and Cultural Change</td>
</tr>
<tr>
<td>HAM 210</td>
<td>Popular Culture</td>
</tr>
<tr>
<td>HAS 202</td>
<td>Social Theory</td>
</tr>
</tbody>
</table>

The following subjects may be taken at Stage 2 or Stage 3 but not both:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAH 222</td>
<td>Practical Ethics</td>
</tr>
<tr>
<td>HAP 221/HAP 321</td>
<td>Modern Australia#</td>
</tr>
<tr>
<td>HAS 200/HAS 300</td>
<td>Public Policy in Australia</td>
</tr>
<tr>
<td>HAS 201/HAS 301</td>
<td>Work in Australia#</td>
</tr>
</tbody>
</table>

Stage 3

<table>
<thead>
<tr>
<th>Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAL 312</td>
<td>Cinema Studies</td>
</tr>
<tr>
<td>HAS 304</td>
<td>Sociology and Social Policy</td>
</tr>
<tr>
<td>HAS 309</td>
<td>Social Research Design: Principles and Methods</td>
</tr>
<tr>
<td>HAS 307</td>
<td>Qualitative Research Methods</td>
</tr>
</tbody>
</table>

# 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 degree come from Philosophy & Cultural Inquiry, Media Studies, Literature, Politics, Psychology, and Asian Languages and Cultures. Students are provided with the means to comprehend and critically analyse the diverse components and media of culture: science, literature, film, television, popular culture, print, electronic media etc., the relationship between these, and the relationship between different cultures of different regions, nations and ethnic groups.

Students may construct their degrees to focus on their particular interests, such as: literature and film as cultural phenomena, cultural politics, the problematic relationship between cultures in a globalised world, the problems associated with the disintegration of traditional cultures and the search for new foundations for beliefs, science and philosophy as cultural phenomena.

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 are as follows:

**Stage 1**

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</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>HAML104</td>
<td>Media Literature Film: Texts and Contexts</td>
</tr>
</tbody>
</table>

**Stage 2**

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAL209</td>
<td>Australian Writing and Cultural Change</td>
</tr>
<tr>
<td>HALM200</td>
<td>Reading, Writing and Criticism</td>
</tr>
<tr>
<td>HAM210</td>
<td>Popular Culture</td>
</tr>
<tr>
<td>HASM201</td>
<td>eSociety: Sociology of the Electronic Age</td>
</tr>
<tr>
<td>HASP202</td>
<td>Social Theory</td>
</tr>
</tbody>
</table>

The following subjects may be taken as Stage 2 or Stage 3 subjects, but not both:

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAH209/#</td>
<td>Philosophy of Culture#</td>
</tr>
<tr>
<td>HAH210/#</td>
<td>Philosophy, Media, Culture#</td>
</tr>
<tr>
<td>HAH223/#</td>
<td>Environmental Philosophy#</td>
</tr>
<tr>
<td>HAH224/#</td>
<td>Natural Philosophy and The Sciences</td>
</tr>
<tr>
<td>HAH225/#</td>
<td>Philosophy, Politics, and Society</td>
</tr>
<tr>
<td>HAH226/#</td>
<td>Knowledge, Reason, and Society: Contemporary Issues and Perspectives</td>
</tr>
</tbody>
</table>

**Stage 3**

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAL309</td>
<td>Renaissance Literary Culture</td>
</tr>
<tr>
<td>HALM312</td>
<td>Cinema Studies</td>
</tr>
<tr>
<td>HAML316</td>
<td>Electronic Writing</td>
</tr>
<tr>
<td>HAY310</td>
<td>Social and Personal Relationships (cannot be undertaken if HAY307 has been completed)</td>
</tr>
</tbody>
</table>

# 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 new social 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**

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAM105</td>
<td>The Media in Australia</td>
</tr>
<tr>
<td>HAS100</td>
<td>Sociology 1A</td>
</tr>
</tbody>
</table>

**Stage 2**

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HALM206</td>
<td>Issues in Electronic Media</td>
</tr>
<tr>
<td>HAM211</td>
<td>New Media: The Telecommunications Revolution</td>
</tr>
<tr>
<td>HASM201</td>
<td>eSociety: Sociology of the Electronic Age</td>
</tr>
<tr>
<td>HAY208</td>
<td>Human Information Processing (cannot be undertaken if HAY205 has been completed)</td>
</tr>
</tbody>
</table>

The following subjects may be taken at Stage 2 or Stage 3 but not both:

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAH210/#</td>
<td>Philosophy, Media, Culture#</td>
</tr>
<tr>
<td>HAH225/#</td>
<td>Philosophy, Politics, and Society</td>
</tr>
<tr>
<td>HAH226/#</td>
<td>Knowledge, Reason, and Society: Contemporary Issues and Perspectives</td>
</tr>
<tr>
<td>HAH230/#</td>
<td>Philosophy of Culture#</td>
</tr>
<tr>
<td>HAH301/#</td>
<td>Media, Culture#</td>
</tr>
<tr>
<td>HAH310/#</td>
<td>Environmental Philosophy#</td>
</tr>
<tr>
<td>HAH306/#</td>
<td>Natural Philosophy and The Sciences</td>
</tr>
<tr>
<td>HAH315/#</td>
<td>Philosophy, Politics, and Society</td>
</tr>
<tr>
<td>HAH326/#</td>
<td>Knowledge, Reason, and Society: Contemporary Issues and Perspectives</td>
</tr>
</tbody>
</table>

**Stage 3**

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAM315</td>
<td>Information Society: A Global Perspective</td>
</tr>
</tbody>
</table>

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

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

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 HAA384 Individual Project after completing HAA283 Italian 2Z. A credit is the minimum requirement to be able to transfer to the Advanced course. Students must obtain approval from the Italian Studies Convenor prior to changing from one stream to another.

Course Subjects
The Italian Studies major consists of the following:

Stage 1
- HAA181 Italy and its Language 1#
- HAA182 Italy 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 fifth 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 Japanese 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 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.

Japanese 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#
- HAJ325 Advanced Written Japanese 3A
- HAJ326 Advanced Spoken Japanese 3A

Japanese 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 even 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 twenty-first 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 education, 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 practice of new writing technologies, such as hypertext.

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 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 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 are as follows:

**Stage 1**

- HALM104 Media Literature Film: Texts and Contexts
- HALM103 Writing Fiction

**Stage 2**

- HALM209 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**

- HALM309 Renaissance Literary Culture
- HALM312 Cinema Studies
- HALM316 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 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**

- HAM101 Media Voices, Media Style: The Process of Journalism
- HAM106 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
- HALM316 Electronic Writing
- HALM317 Media/Literature Project
- 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 achieve this goal, we draw on influential currents in philosophy, the history of ideas, social and political theory, psychology and the social sciences, as well as the history and philosophy of science.
Philosophy and Cultural Inquiry at Swinburne thus provides a unique blend of traditional philosophical studies and an inquiry into the cultural underpinnings of present day society, with a view to facilitating the development of more effective responses to pressing contemporary challenges. In addition to enriching their conceptual understanding, we introduce students to the techniques of philosophical inquiry with a view to developing a variety of critical and creative reasoning skills, which are of great value in their own right in personal and professional life.

Overall, Philosophy and Cultural Inquiry at Swinburne seeks to promote philosophical understanding, cultural awareness, and critical and creative thought, and thereby advance the student’s personal and professional well being. Moreover, we aspire to do so in a way that complements the activities of the other major areas of study within the Arts and Social Sciences and across the University.

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 both their professional and 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**
- HAH100 Introduction to Philosophy
- HAH101 History of Ideas
- HAH103 Critical Thinking

The following subjects can be taken as Stage 2 or Stage 3, but not both:
- HAH209/HAH309 Philosophy of Culture
- HAH210/HAH310 Philosophy, Media, Culture
- HAH219/HAH319 Philosophical Psychology
- HAH222/HAH322 Practical Ethics
- 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

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.

N053 Bachelor of Arts in Media and Communications

Media Studies can incorporate a wide range of academic and production subjects. At Swinburne, they fall into three overlapping areas:

- **Texts in context**: 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 examination of issues such as ownership, control of the media and the cultural impact of new technologies.
- **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 twenty-four 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 trimester) is a part-time load. From 2005, commencing students are required to complete the Media and Communications component and a combination of major(s)/minor(s) and electives.

Mandatory subject (from 2005 onwards):
- HMA103 Statistics and Research Methods A (for students completing a Psychology major or minor)

Students who commenced prior to 2005 are required to complete HMA104, or HMA103 (if Psychology major or minor).

Media and Communications Component: 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: HALM 104) and six post-Stage 1 subjects. At least three subjects must be taken at Stage 3 (eg: HALM 312). 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).

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 Arts and Social Science subjects offered by the Faculty of Life and Social Sciences and, subject to approval, from other areas of study.
From 2005, in addition to completing the Media and Communications component, commencing students must choose one of the following options:

Option 1 - One major and six electives
Option 2 - Two minors and three electives

**Course requirements and restrictions**

The following course requirements and restrictions apply:

- Students must complete a minimum of six Stage 1 Arts/Social Science subjects.
- Students must complete at least four Stage 3 subjects for the Media and Communications Component.
- 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 2005 are permitted to complete a Business minor, but may not complete a Business major.
- Students may complete a maximum of five subjects (excluding HMA103, HM A104, HMA278 and HMA279) outside Arts and Social 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/Specialisation**

To qualify for the award of the Bachelor of Arts (Media and Communications) degree, students must complete the Media and Communication component subjects, a major or two minors, and electives. Students who commenced prior to 2005 must also complete the mandatory subject.

**Arts majors/minors:**
- Australian Studies
- Cultural Studies
- Electronic Society
- Italian Studies
- Japanese
- Literature
- Philosophy & Cultural Inquiry

**Social Science majors/minors:**
- Politics
- Psychology
- Sociology

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

Please refer to Bachelor of Business for details.

### Course subjects

The Media and Communications component consists of the following subjects:

**Stage 1**
- HAML104 Media Literature Film: Texts and Contexts*
- HAML105 The Media in Australia*
- HAML113 Professional Communication Practice*

* Subjects must be completed as part of the Media and Communications Component unless the student is also completing an electronic society or literature major.

**And eight of the following subjects with at least four at Stage 3**

**Stage 2**
- HAML200 Reading, Writing and Criticism
- HAML201 Media Voices, Media Style: The Process of Journalism
- HAML206 Issues in the Electronic Media
- HAML210 Popular Culture
- HAML211 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:
- HAMP 226/HAMP 326 Making News and Making Policy: The Media and Politics

**Stage 3**
- HAML312 Cinema Studies
- HAML316 Electronic Writing
- HAML317 Media/Literature Project
- HAML318 Radio Production and Criticism A
- HAML319 Radio Production and Criticism B
- HAML324 Professional Attachment Program (this subject is available to selected students only)
- HAML325 Information Society: A Global Perspective
- HAML326 Radio Production and Criticism B

### Entry requirements

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

2006 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any).

2004 Final Clearly-In ENTER: 84.30

Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and have at least five years related work experience, may be considered for admission if they can demonstrate motivation and ability to succeed. Because of restrictions on numbers of places, not all eligible applicants can be offered a place.

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. These include the Bachelor of Arts and Bachelor of Social Science.

### Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34071 (CSP), 34072 (Fee), 34073 (Int. Fee)

Part-time study is also available for Australian citizens and holders of Australian residency.

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

**N051 Bachelor of Arts in Psychology and Psychophysiology**

The Bachelor of Arts (Psychology and Psychophysiology) 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.

**Career opportunities**

Graduates of the psychology/psychophysiology course 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.

**Course subjects**

**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**

- HET333 Human Physiology
- HET148 Technology and Data Acquisition
- HAY101 Psychology 101
- Elective (chosen from Arts, Social Science or Science subjects)

**Year 2**

**Semester 1**

- HET227 Neurophysiology
- 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**

- HET527 Sleep & Attention
- HET528 Higher Cortical Function

- HAY308 Psychology of Personality
- HAY309 Psychological Measurement

**Semester 2**

- HET631 Abnormal Psychophysiology
- HET200 Psychophysiology Project
- HAY307 Social Psychology
- HAY331 Abnormal Psychology

**Entry requirements**

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

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any) and in one of Biology, Chemistry, Mathematics (any), Physics or Psychology.

2004 Final Clearly-In ENTER: 81.20

Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and have at least five years related work experience, may be considered for admission if they can demonstrate motivation and ability to succeed. Because of restrictions on numbers of places, not all eligible applicants can be offered a place.

**Application procedure**

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC), VTAC code: 34461 (CSP), 34462 (Fee), 34463 (Int. Fee)

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

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 in Public and Environmental Health**

This course, formerly known as the Bachelor of Health Science (Environmental Health Management), 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 public and 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 public and environmental health management and their relationship to human behaviour, social health and the environment.
- To produce a professional graduate who has a thorough understanding of environmental health methodology and the ability to interpret and apply it competently and appropriately in the relevant professional context and setting.
- To instil the graduate with an appreciation of the role of the environmental health practitioner in society, a sense of resourcefulness, originality, impartiality and a well developed culture of community service and ethics.
- To develop self-educative skills, flexibility of mind, and an inherent recognition of the need to research and keep abreast of technological, financial, social and political change.
- To develop graduates who are able to communicate with and relate confidently to a wide range of professionals and others who interface with public and environmental health practice.

Swinburne University of Technology | Undergraduate Course Handbook 2005
To develop graduates who are able to participate in the education of society in matters of community health.

To develop the management skills required to administer and deliver a range of public and environmental health services to an increasingly informed society.

To assist students to demonstrate the necessary academic strengths and motivation to seek and obtain entry to a wide range of post graduate programs relevant to public and environmental health management.

To meet the accreditation requirements for public and environmental health undergraduate degree programs set by the Australian Institute of Environmental Health.

### Career opportunities

Graduates of the public and environmental health degree obtain many diverse and multidisciplinary skills enabling them to work in a variety of roles. Areas of employment include working as a environmental health practitioner with a range of government authorities, obtaining positions in the areas of health promotion, policy development, communicable disease investigation, immunisation, environment protection, waste management, sustainability and public and community health planning. Graduates also may enter the private sector working as consultants in a range of areas from risk management to education. Graduates also work with overseas agencies in places such as Rwanda, Somalia and Vietnam. Employment rates are consistently 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

**Semester 1**

- **HAS100** Sociology 1 (Introductory Sociology)
- **HES1500E** Introduction to Chemistry
- **HES1610** Human Biology
- **HES1710** Philosophy & Practice of Public and Environmental Health

**Semester 2**

- **HBSL100** Introductory Law
- **HMS102** Introduction to Statistics
- **HBSH101** Behaviour & Communication in Organisations
- **HES1716** Health Policy & Planning

#### Stage 2

**Semester 1**

- **HES2631** The Microbial World
- **HES2700** Food Science
- **HES2710** Public & Environmental Health
- **HES2725** Food Safety 1

**Semester 2**

- **HES2636** Microbes in the Environment
- **HES2705** Water Science
- **HES2715** Built & Sustainable Communities
- **HES2735** Communicable Disease Control

#### Stage 3

**Semester 1**

- **HES3700** Industry-Based Learning*

**Semester 2**

- **HES3705** Industry-Based Learning*

#### Stage 4

**Semester 1**

- **HES4700** Research Skills
- **HES4710** Environmental Health Services Evaluation
- **HES4720** Environmental Management
- **HES4730** Food Safety 2

**Semester 2**

- **HES4705** Research Project
- **HES 4716** Public & Environmental Health Law 2
- **HES4725** Occupational Health & Safety
- **HBSH400** Administration and Management

* May be replaced by HES3715 Professional Practice in Public and Environmental Health

### Entry requirements

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

**2006 VCE Prerequisites:** Units 3 & 4 – a study score of at least 25 in English (any), and in one of Chemistry, Physics or Biology, and in one of Mathematical Methods, Specialist Mathematics or a study score of at least 30 in Further Mathematics.

**2004 ENTER:** 80.65

Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score, no other tertiary study and have at least five years related work experience, may be considered for admission. Passes in Mathematics Methods (or equivalent) and Chemistry at Year 11 is assured.

### Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34051 (CSP), 34052 (Fee), 34053 (Int. Fee)

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

In addition to making an application for course entry through VTAC, all applicants must complete the Application for Interview Form available on Swinburne's Public and Environmental Health website at www.swinburne.edu.au/health_enviro and return to Program Manager, Public & Environmental Health, Swinburne University, P.O Box 218, Hawthorn 3122 by the end of November. Applicants lodging an application with VTAC after the end of November must contact the school office on (03) 9214 8372 for further details.

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

### Career opportunities

Career outcomes may include web development, information architecture, and 3D animation, to name a few.

### 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 Recommended Study Sequence illustrates how the course would be structured to fit into four semesters (assumes 100 CP of credit has been granted for previous study).

In all cases, students must choose subjects from Subject Groups according to the 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 three Subject Groups

- Multimedia Core Studies
- Further Multimedia Studies
- Co-Major Elective Studies

Assuming that 100 credit points of credit has been awarded due to previous study, students must complete at least 200 credit points made up of:

- Multimedia Core Studies (125 credit points)
- Further Multimedia Studies (25 credit points)
- Co-Major Elective Studies and/or Further Multimedia Studies (50 credit points)

Course subjects

All subjects have a value of 12.5 credit points unless indicated otherwise.

Multimedia Core Studies

HET113  The Internet & WWW 1
HET123  The Internet & WWW 2
HET215  Multimedia Applications
HDM D101  Design for Multimedia 1
HDM D102  Design for Multimedia 2
HET208  3D Modelling and Animation
HET213  User Experience Design
HET401  Multimedia Project 1
HET402  Multimedia Project 2
HET407  Multimedia Technology

Further Multimedia Studies

HET222  Digital Video & Audio
HET325  Principles of Game Design
HET332  Interactive Multimedia

Co-Major Elective Studies

Elective subjects will normally be drawn from the existing pool of co-major subjects currently available in the Bachelor of Multimedia suite of courses J043, J044, J055. These subjects are primarily in the areas of Media Studies, Business Marketing, Computer Networking and Information Technology.

Recommended Study Sequence

Semester 1

HET113  The Internet & WWW 1
HDM D101  Design for Multimedia 1
HET213  User Experience Design
Co-Major Elective Studies (choose one)

Semester 2

HET123  The Internet & WWW 2
HDM D102  Design for Multimedia 2
HET208  3D Modelling and Animation
Co-Major Elective Studies (choose one)

Semester 3

HET215  Multimedia Applications
HET401  Multimedia Project 1
HET407  Multimedia Technology
Co-Major Elective Studies (choose one)

Semester 4

HET402  Multimedia Project 2
Choose two of:
HET222  Digital Video & Audio
HET332  Interactive Multimedia
HET325  Principles of Game Design
Plus:
Co-Major Elective Studies (choose one)

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. Applicants who do not satisfy the above requirements may also be selected after consideration of their employment and educational background.

Application procedure

Contact the Faculty of Life and Social Sciences, telephone (+61 3) 9214 8859

J 044  Bachelor of Multimedia in Business Marketing

This program gives graduates the opportunity of participating in the exciting new field of electronic commerce. It 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.

Graduates will provide their future employers with comprehensive skills in the principles and practice of marketing as they are applied in a multimedia environment, with a solid grounding in the analysis and modelling of market conditions.

Aims & Objectives

The Bachelor of Multimedia (Business Marketing) aims to produce graduates with a broad range of multimedia production skills plus a thorough understanding of how multimedia and the Internet is revolutionising the way business is being conducted, in particular how the practice of marketing is changing in response to commercialisation of the World Wide Web.

A graduate of the Bachelor of Multimedia (Business Marketing) should possess:

- A sound and broad knowledge of the design of multimedia applications and an appreciation of the various skills required.
- Skills in the application of learning and instructional design principles to structured multimedia applications.
- The ability to function effectively as an individual and in project teams, whether as manager, leader or team member.
- The communication and management skills required to successfully manage multimedia development projects.
- Been prepared for the rapidly evolving multimedia industry by developing their life-long learning skills and flexibility of mind.
- A thorough understanding of the way end-to-end enterprise-wide technologies are changing the way business is conducted.
- The means to participate in and understand the development of sophisticated methods of customer data management, with corresponding improvements in business efficiency and potential customer satisfaction.
- An understanding of the changing face of multimedia, in relation to both acceleration in the use and development of technology, and its impact on society.

Campus

Hawthorn/Prahran

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 sixteen hours per week during academic semesters.

Students choose subjects from five Subject Groups

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

Students must complete at least 300 credit points made up of:

- Core Multimedia Studies (87.5 credit points)
- Further Multimedia Studies (62.5 credit points)
- Co-major Studies Group A (87.5 credit points)
- Co-major Studies Group B (25 credit points)
- Elective Studies (12.5 credit points)
- Co-major Studies Group B and/or Elective Studies (25 credit points)

**Course subjects**

All subjects have a value of 12.5 credit points unless indicated otherwise.

### Core Multimedia Studies

- **HMD101** 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

### Further Multimedia Studies

- **HMD102** Design for Multimedia 2
- **HET123** The Internet & WWW 2
- **HET208** 3D Animation & Special Effects
- **HET222** Digital Video & Audio
- **HET324** Interactive Animation
- **HET325** Principles of Game Design
- **HET332** Interactive Multimedia

### Co-major Studies Group A

- **HBM110** The Marketing Concept
- **HBM220** Market Behaviour
- **HBM222** Marketing Planning
- **HBM330** Marketing Innovation Management
- **HBM341** Business Strategy
- **HBQ229** Marketing Research
- **HM 8110** Quantitative Analysis A

### Co-major Studies Group B

- **HBM223** Transnational Marketing
- **HBM271** Customer Relationship Management
- **HBM272** eMarketing
- **HBM330** Services Marketing & Management
- **HBM333** Communications Strategy
- **HBM339** Transnational Business Practices

### Elective Studies

- **HBC110** Accounting for Success
- **HBE110** Microeconomics
- **HBO270** eBusiness
- **HBO110** Organisations & Management
- **HBL111** Law in Global Business
- **HBL222** Marketing Law
- **HBM370** eCommerce Strategy: A Management Perspective
- **HAM 113** 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

- **HMD101** Design for Multimedia 1
- **HET113** The Internet & WWW 1
- **HBM110** The Marketing Concept
- **HBM220** Market Behaviour

#### Semester 2

- **HBM222** Marketing Planning
- Choose one of:
  - **HET123** The Internet & WWW 2
  - **HET222** Digital Video & Audio

#### Semester 3

- **HET213** User Experience Design
- **HET215** Multimedia Applications
- **HBQ229** Marketing Research
- Choose one of:
  - **HBE110** Microeconomics
  - **HBO270** eBusiness
  - **HBM223** Transnational Marketing
  - **HBM211** Law in Global Business
  - **HBM271** Customer Relationship Management

#### Semester 4

- Choose two of:
  - **HET123** The Internet & WWW 2
  - **HET208** 3D Animation & Special Effects
  - **HET222** Digital Video & Audio
  - **HET332** Interactive Multimedia
  - **HBC110** Accounting for Success
  - **HBO270** 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:

- HAM 113 Professional Communication Practice
- HBL 222 Marketing Law
- HBM 272 eMarketing
- HBM 331 Services Marketing & Management
- HBM 333 Communications Strategy
- HBM 339 Transnational Business Practices

**Semester 6**

- HET 402 Multimedia Project 2
- HBM 341 Business Strategy

Choose one of:

- HET 123 The Internet & WWW 2
- HET 208 3D Animation & Special Effects
- HET 324 Interactive Animation
- HET 325 Principles of Game Design
- HET 322 Interactive Multimedia

Choose one of:

- HBL 222 Marketing Law
- HBM 271 Customer Relationship Management
- HBM 333 Communications Strategy
- HBM 370 eCommerce Strategy: A Management Perspective

**Entry requirements**

Successful completion of an appropriate Victorian Year 12 or its equivalent. 2006 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any).

Selection mode: ENTER and two-stage process with a middle-band of approximately 20%. Possible interview.

Applicants who do not satisfy the above requirements may be selected after consideration of their employment and educational background.

2004 Final Clearly-In ENTER: 85.00

**Application procedure**

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

VTAC code: 34061 (CSP), 34062 (Fee), 34063 (Int. Fee)

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

This course is also offered through the Vice-Chancellor’s Scholarship Program. Successful applicants are awarded HECS waiver scholarships and will be funded for the duration of their course. For further information visit the website at: www.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

**J 055 Bachelor of Multimedia in 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 new multimedia platforms.

**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:

- 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.
- 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/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
- Elective Studies

Students must complete at least 300 credit points made up of:

- Core Multimedia Studies (87.5 credit points)
- Further Multimedia Studies (62.5 credit points)
- Co-major Studies Group A (50 credit points)
- Co-major Studies Group B (62.5 credit points)
- Elective Studies (12.5 credit points)
- Co-major Studies Group B and/or Elective Studies (25 credit points)

**Course subjects**

All subjects have a value of 12.5 credit points unless indicated otherwise.

**Core Multimedia Studies**

- HDM 0101 Design for Multimedia 1
- HET 213 The Internet & WWW 1
- HET 213 User Experience Design
- HET 215 Multimedia Applications
- HET 401 Multimedia Project 1
- HET 402 Multimedia Project 2
- HET 407 Multimedia Technology
Further Multimedia Studies
HDM 101 Design for Multimedia 1
HET 113 The Internet & WWW 1
HALM 104 Media, Literature & Film: Texts & Contexts
HAM 105 The Media in Australia
HAM 210 Popular Culture
HAM 211 New Media: The Telecommunications Revolution
HAM 315 Information Society: A Global Perspective

Co-major Studies Group A
HALM 104 Media, Literature & Film: Texts & Contexts
HAM 105 The Media in Australia
HAM 210 Popular Culture
HAM 211 New Media: The Telecommunications Revolution
HAM 315 Information Society: A Global Perspective

Co-major Studies Group B
HAE 101 History of Ideas
HAE 103 Critical Thinking
HALM 103 Writing Fiction
HALM 201 Media Voices, Media Style: The Process of Journalism
HALM 206 Special Issues in the Media
HALM 317 Literature/Media Project
HAM 313 Radio Production & Criticism
HAM 316 Electronic Writing
HAM 321 eSociety (Sociology of the Electronic Age)

Elective Studies
HALM 312 Cinema Studies
HALM 316 Electronic Writing
HBSE 200 New Venture Development & Management
HAE 113 Professional Communication Practice
HALM 312 Cinema Studies
HALM 316 Electronic Writing

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
HDM 101 Design for Multimedia 1
HET 113 The Internet & WWW 1
HALM 104 Media, Literature & Film: Texts & Contexts
Choose 1 of:
HAE 103 Critical Thinking
HALM 103 Writing Fiction

Semester 2
HDM 102 Design for Multimedia 2
HAM 105 The Media in Australia
HALM 206 Special Issues in the Media
Choose 1 of:
HET 113 The Internet & WWW 1
HET 222 Digital Video & Audio

Semester 3
HET 215 Multimedia Applications
HAM 211 New Media: The Telecommunications Revolution
HAM 313 Radio Production & Criticism
Choose 1 of:
HET 123 The Internet & WWW 2

Semester 4
HET 208 3D Animation & Special Effects
HET 222 Digital Video & Audio

HET 113 User Experience Design
HALM 201 Media Voices, Media Style: The Process of Journalism
HET 208 3D Animation & Special Effects

Choose 1 of:
HET 123 The Internet & WWW 2
HET 222 Digital Video & Audio
HET 332 Interactive Multimedia

Optional IBL Year
HET 300 Industry-Based Learning
HET 400 Industry-Based Learning

Semester 5
HAM 210 Popular Culture
HET 401 Multimedia Project 1
HET 407 Multimedia Technology
Choose 1 of:
HAM 113 Professional Communication Practice
HALM 312 Cinema Studies
HALM 316 Electronic Writing

Semester 6
HET 402 Multimedia Project 2
Choose 1 of:
HET 123 The Internet & WWW 2
HET 208 3D Animation & Special Effects
HET 222 Digital Video & Audio
HET 332 Interactive Multimedia
Choose 2 of:
HBS 200 New Venture Development & Management
HALM 317 Literature/Media Project
Media Studies Elective (at least Stage 2)*
Arts Elective (at least Stage 2)*

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

Entry Requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent.
2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).
Selection mode: ENTER and two-stage process with a middle-band of approximately 20%. Possible interview.
Applicants who do not satisfy the above requirements may be selected after consideration of their employment and educational background.
2004 Final Clearly-In ENTER: 83.10

Application Procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC Code: 34081 (CSP), 34082 (Fee), 34083 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
This course is also offered through the Vice-Chancellor's Scholarship Program.
Successful applicants are awarded HECs waiver scholarships and will be funded for the duration of their course. For further information visit the website at: www.swinburne.edu.au/hed/scholarships/vcsschol.htm
International students should contact the International Student Unit on +61 3 9214 8647 or via email: isuenq@swin.edu.au
Z052Y Bachelor of Science in Biochemistry/Chemistry

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 chemical and 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, teamwork, 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, pharmaceutical production, biomolecular research, protein engineering, wine science, waste treatment, biodegradation and bioremediation. Some graduates move into sales, marketing, business analysis and management associated with the biochemical and chemical industries.

Professional recognition
The Royal Australian Chemical Institute has accredited this course for the purposes of professional recognition. Graduates are also eligible for membership of:
- Australian Society for Biochemistry and Molecular Biology (ASBM B)
- Australian Society for Microbiology (ASM)
- Australian Biotechnology Association (ABA).

Course duration
Three years full-time plus an optional and additional year of Industry-Based Learning (IBL)

Course subjects

Stage 1

<table>
<thead>
<tr>
<th>Semester 1</th>
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<tbody>
<tr>
<td>HES1500 Introduction to Chemistry</td>
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<tr>
<td>HM5111 Engineering Mathematics 1</td>
</tr>
<tr>
<td>HIT2079 Computing for Chemists</td>
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<tr>
<td>HES1610 Human Biology, or</td>
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<tr>
<td>HES1626 Professional Skills for Biotechnologists</td>
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<tr>
<th>Semester 2</th>
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</thead>
<tbody>
<tr>
<td>HES1525 Chemistry 2</td>
</tr>
<tr>
<td>HES1555 Consumer Science</td>
</tr>
<tr>
<td>HES1616 Concepts of Biotechnology</td>
</tr>
<tr>
<td>HM5102 Introduction to Statistics</td>
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</table>

Stage 2

<table>
<thead>
<tr>
<th>Semester 1</th>
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</thead>
<tbody>
<tr>
<td>HES2540 Forensic and Analytical Science</td>
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<tr>
<td>HES2510 Investigative Chemistry Prac 1</td>
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<tr>
<td>HES2621 Introduction to Biochemistry</td>
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<tr>
<td>HES2631 The Microbial World</td>
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</tbody>
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<table>
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<tr>
<th>Semester 2</th>
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<tbody>
<tr>
<td>HES2520 Chemistry 3</td>
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<tr>
<td>HES2515 Investigative Chemistry Prac 2</td>
</tr>
<tr>
<td>HES1626 Biochemistry of Genes and Proteins</td>
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</tbody>
</table>

Stage 3

<table>
<thead>
<tr>
<th>Semester 1</th>
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</thead>
<tbody>
<tr>
<td>HES4520 Advanced Chemistry 1</td>
</tr>
<tr>
<td>HES4510 Investigative Chemistry Prac 3</td>
</tr>
<tr>
<td>HES4621 Advanced Biochemistry</td>
</tr>
<tr>
<td>HES4641 Practical Biochemistry</td>
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<tr>
<th>Semester 2</th>
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</thead>
<tbody>
<tr>
<td>HES4525 Advanced Chemistry*</td>
</tr>
<tr>
<td>HES4515 Chemistry Project*</td>
</tr>
<tr>
<td>HES4626 Biotechnology</td>
</tr>
<tr>
<td>HES4646 Biotechnology research project</td>
</tr>
</tbody>
</table>

* One of these subjects may be replaced with an approved elective.

IBL, if undertaken, is generally taken between Stages 2 and 3 and consists of:
- HES3500 Industry-Based Learning, and/or
- HES3505 Industry-Based Learning

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

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), in one of Biology, Chemistry, Physics or Psychology and in one of Mathematics (any).

2004 Final Clearly-In ENTER: 80.55

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

Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swin.edu.au/hed/scholarships/vcschol.htm

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

S061 Bachelor of Science in 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
The course has the following objectives:
- To develop in students a mastery of a wide spectrum of basic principles underlying biomedical sciences.
- To give students an appropriate introduction to the role of the medical technician, or technologist or researcher in the health community.
- To give students a sound knowledge of anatomy, physiology, the application of physics to biomedical systems, and the appropriate application of monitoring technology in the clinical environment.
- To develop in students a mastery of the application of physics and mathematical principles to the interpretation and study of human physiological processes.
- To develop an understanding of human pathophysiology and associated clinical techniques for identifying them.
- To develop in students a thorough understanding of the appropriate technology, instrumentation and techniques, and competence in their application, so that students are able to comprehend and analyse problems.

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

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), in one of Biology, Chemistry, Physics or Psychology and in one of Mathematics (any).

2004 Final Clearly-In ENTER: 80.55

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

Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swin.edu.au/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swin.edu.au/isu
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.
- 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 into the Bachelor of Science (Biomedical Sciences) / Bachelor of Engineering (Electronics and Computer Systems) double degree program. Later year transfers will only be possible if students have selected appropriate electives during their studies.

Students choose subjects from five Subject Groups:

- Biomedical Sciences (BMS) Core Studies
- First Year Elective Studies
- Biomedical Elective Studies
- Instrumentation/Computing Studies
- Business/Entrepreneurship Studies

Students must complete at least 300 credit points made up of:

- Biomedical Sciences (BMS) Core Studies (237.5 credit points)
- First Year Elective Studies (12.5 credit points)
- Business/Entrepreneurship Studies (12.5 credit points)
- Biomedical Elective Studies (12.5 credit points)
- Instrumentation/Computing Studies (25 credit points)

Course subjects
All subjects have a value of 12.5 credit points unless indicated otherwise.

Biomedical Sciences (BMS) Core Studies

- HET102 Introductory Physiology
- HET124 Energy & Motion
- HET125 Physics 2
- HET133 Human Physiology
- HET126 Electronic Systems
- HET127 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
- HM5111 Engineering Mathematics 1
- HM5112 Engineering Mathematics 2
- HM5213 Engineering Mathematics 3B
- HIT2080 Introduction to Programming*, OR
- HIT1051 Software Development 1*

* Students may only undertake 1 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

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

Biomedical Elective Studies

- HET219 Neurological Monitoring
- HET224 Circuits & Electronics 1
- HET312 Control and Automation
- HET329 Digital Signal & Image Processing
- HET417 Photonics & Fibre Optics
- HET425 Nucleonics and Spectroscopy
- HIT1052 Software Development 2
- HIT3138 Intelligent Systems
- HM5214 Engineering Mathematics 4B

Business/Entrepreneurship Studies

- HBSG200 New Venture Development & Management
- HES3380 Engineering Management 1
- HES5380 Engineering Management 2

Recommended Study Sequence

Semester 1

- HET102 Introductory Physiology
- HET124 Energy & Motion
- HM5111 Engineering Mathematics 1
- HIT2080 Introduction to Programming*, OR
- HIT1051 Software Development 1*

Semester 2

- HET133 Human Physiology
- HET182 Electronic Systems
- HM5112 Engineering Mathematics 2
- First Year Elective Studies (choose one)

Semester 3

- HET128 Physics 2
- HET210 Electronics
- HET240 Cellular Biophysics
Mastery of the basic scientific principles that underpin biotechnology.

The aim of the course is to prepare students for scientific careers in science, computer science, business, or media and communications.

Students within the course to take out major studies in chemistry, environmental sciences in biotechnology. The course provides flexible options that allow biochemistry, microbiology and molecular biology and the application of these related to the medical, health, agricultural and environmental industries. As this course equips graduates for careers in biochemistry and biotechnology related to the medical, health, food and beverage, wine, agricultural, chemical and environmental industries. It also provides Pathways into honours, masters and PhD degrees.

**Career opportunities**

This course equips graduates for careers in biochemistry and biotechnology related to the medical, health, food and beverage, wine, agricultural, chemical and environmental industries. It 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 (IBL).

### 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 fourth 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.

Students may apply to transfer from the single degree to one of the double degrees at any time during their course subject to satisfactory performance. Transfer after the first year may involve additional studies, and therefore a longer time period, to complete the requirements of the double degree.

Core subjects in the BSc (Biotechnology) degree are:

- HES1610 Human Biology
- HIT2079 Computing for Chemists, or
- HES1626 Professional Skills for Biotechnologists
- HES1500/HE51500E Introduction to Chemistry
- HM 5111 Engineering Mathematics
- HES1616 Concepts of Biotechnology
- HES1525 Chemistry 2
- HES52621 Introduction to Biochemistry
- HES2631 The Microbial World
- HES2626 Biochemistry of Genes and Proteins
- HES2636 Microbes in the Environment
- HES4621 Advanced Biochemistry
- HES4641 Practical Biochemistry
- HES4626 Biotechnology
- HES4646 Biotechnology Research Project

**Faculty of Life and Social Sciences**

Swinburne University of Technology | Undergraduate Course Handbook 2005
The standard chemical sciences stream involves major studies in chemistry as outlined below. Students have an option, which should be exercised prior to the start of their second year, of choosing other major studies and should speak to their course convenor if they wish to do so. A course structure based on environmental science subjects has been preapproved and is available from the course convenor.

Chemical Sciences Stream

Stage 1

Semester 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>HES1610</td>
<td>Human Biology</td>
</tr>
<tr>
<td>HIT2079</td>
<td>Computing for Chemists, or</td>
</tr>
<tr>
<td>HES1626</td>
<td>Professional Skills for Biotechnologists</td>
</tr>
<tr>
<td>HES1500</td>
<td>Introduction to Chemistry, or</td>
</tr>
<tr>
<td>HES1500E</td>
<td>Introduction to Chemistry</td>
</tr>
<tr>
<td>HM 5111</td>
<td>Engineering Mathematics 1</td>
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</tbody>
</table>

Semester 2

<table>
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<th>Course Name</th>
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<tbody>
<tr>
<td>HES1616</td>
<td>Concepts of Biotechnology</td>
</tr>
<tr>
<td>HES1555</td>
<td>Consumer Science</td>
</tr>
<tr>
<td>HES1525</td>
<td>Chemistry 2</td>
</tr>
<tr>
<td>HM 5102</td>
<td>Introduction to Statistics</td>
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</tbody>
</table>

Stage 2

Semester 1

<table>
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<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>HES2621</td>
<td>Introduction to Biochemistry</td>
</tr>
<tr>
<td>HES2631</td>
<td>The Microbial World</td>
</tr>
<tr>
<td>HES2510</td>
<td>Investigative Chemistry Prac 1</td>
</tr>
<tr>
<td>HES2540</td>
<td>Forensic &amp; Analytical Science</td>
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</table>

Semester 2

<table>
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<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HES2626</td>
<td>Biochemistry of Genes and Proteins</td>
</tr>
<tr>
<td>HES2636</td>
<td>Microbes in the Environment</td>
</tr>
<tr>
<td>HES2520</td>
<td>Chemistry 3</td>
</tr>
<tr>
<td>HES2515</td>
<td>Investigative Chemistry Prac 2</td>
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Stage 3

Semester 1

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<th>Course Name</th>
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<tbody>
<tr>
<td>HES4520</td>
<td>Advanced Chemistry 1</td>
</tr>
<tr>
<td>HES4621</td>
<td>Advanced Biochemistry</td>
</tr>
<tr>
<td>HES4641</td>
<td>Practical Biochemistry</td>
</tr>
<tr>
<td>HES4510</td>
<td>Investigative Chemistry Prac 3*</td>
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Semester 2

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<th>Course Name</th>
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<tr>
<td>HES4626</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>HES4646</td>
<td>Biotechnology Research Project</td>
</tr>
<tr>
<td>HES4525</td>
<td>Advanced Chemistry 2*</td>
</tr>
<tr>
<td>HES4628</td>
<td>Environmental Biotechnology#</td>
</tr>
</tbody>
</table>

* One of these subjects may be replaced by an approved elective.
# May be replaced with an approved science elective.

IBL, if undertaken, is usually taken between Stages 2 and 3 and consists of:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HES3500</td>
<td>Industry-Based Learning, and/or</td>
</tr>
<tr>
<td>HES3505</td>
<td>Industry-Based Learning</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.

2006 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any), and in one of Biology, Chemistry, Physics or Psychology and in one of Mathematics (any).

2004 Final Clearly-In ENTER: 80.55

Application procedure

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

VICTAC code: 34241 (CSP), 34242 (Fee), 34243 (Int. Fee)

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

Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor’s Scholarship Program. For further information visit the website at: www.swin.edu.au/hed/scholarships/vschol.htm

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

Z049Y Bachelor of Science in Psychology/Biochemistry

This course covers both psychology and biochemical structures and processes that underpin and influence human behaviour. 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.

Aims & Objectives

The course aims to:

- Develop in students a mastery of the basic scientific principles underlying biochemistry and psychology.
- Develop a thorough understanding of methods and strategies in biochemistry and psychology, and competence in their application, so that students are able to comprehend and analyse problems and obtain satisfactory solutions which, where appropriate, show originality and resourcefulness.
- Develop students’ communication skills for clear verbal, written and graphic presentation.
- Give students an appropriate introduction to the role of the professional scientist in the community and to explore the social effects of scientific decisions; these studies are aimed at developing moral, social, aesthetic, environmental and ethical concepts essential to a satisfying personal philosophy and a sound professional attitude.
- Prepare students for the changing workplace and the changing social context of science by developing their life-long learning skills and flexibility of mind.

Campus

Hawthorn

Career opportunities

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). Graduates may also apply for membership of the following professional societies:

- Australian Biotechnology Association
- The Australian Society for Biochemistry and Molecular Biology
- Australian Society for Microbiology

Course duration

Three years full-time plus an optional and additional year of Industry-Based Learning (IBL).

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 fourth 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.

Course subjects

Stage 1

Semester 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HES1500/HES1500E</td>
<td>Introduction to Chemistry</td>
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</table>
Z062Y Bachelor of Science in Psychology and Psychophysiology

This course covers both psychology and associated physiological processes, particularly neurological and cognitive processes. 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.

Aims & Objectives

The course has the following objectives:

- To develop in students a mastery of a wide spectrum of basic principles underlying psychology and psychophysiology.
- To give students an appropriate introduction to the role of the professional scientist in the community and to explore the social effects of scientific decisions.
- To develop in students a sound knowledge of anatomy and the physiological processes relevant to psychology.
- To develop in students a mastery of the application of psychological and physiological principles and theories for the interpretation and study of human behavioural and physiological processes.
- To develop in students an understanding of psychological and physiological evaluation and monitoring.
- To provide students with the research and analytical skills associated with high quality physiological and psychological research.
- To develop in students a thorough understanding of the appropriate technology, instrumentation and techniques relevant to cognition and behaviour.
- To develop in students competence in the application of appropriate monitoring technology in the psychological or clinical environment.
- To introduce students to the skills necessary for working in a clinical environment as an effective team member.
- To develop students' communication skills so that they can present their ideas clearly by verbal, written and graphical means.
- To provide students with the research and analytical skills associated with high quality physiological and psychological research.
- To deliver a professionally recognised course of study that will enable graduates to join the Australian Psychological Society as graduate members.

Campus

Hawthorn

Career opportunities

Graduates of this course have been employed in neurophysiological 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.

Students must complete at least 300 credit points made up of:

- Psychophysiology Core Studies (137.5 credit points)
- Psychology Core Studies (100 credit points)
- Statistical Design & Measurement Core Studies associated with the Psychology Core Studies (37.5 credit points)
- Electives (25 credit points)

Although a list of electives are included in the following tables, Students can choose electives from any course offered in the Higher Education Division, subject to prerequisite and timetable restrictions and Course Panel approval.

Course subjects
All subjects have a value of 12.5 credit points unless indicated otherwise.

**Psychology Core Studies**

- HAY100 Psychology 100
- HAY101 Psychology 101
- HAY205 Cognition & Human Performance
- HAY206 Developmental Psychology
- HAY307 Social Psychology
- HAY308 The Psychology of Personality
- HAY309 Psychological Measurement
- HAY321 Abnormal Psychology

**Psychophysiology Core Studies**

- HET102 Introductory Physiology
- HET133 Human Physiology
- HET148 Technology & Data Acquisition
- HET219 Neurological Monitoring
- HET226 Sensory Systems
- HET227 Neurophysiology
- HET231 Perception & Motor Systems
- HET527 AbnormalPsychophysiology (Previously titled 'Psychophysiology')

**Statistical Design & Measurement Core Studies**

- HMA103 Statistics & Research Methods A
- HMA278 Design & Measurement 2
- HMA279 Design & Measurement 3

**Electives**

Total of two selected (examples include):

- HAH100 Introduction to Philosophy
- HAH103 Critical Thinking
- HAM105 The Media in Australia
- HAM113 Professional Communication Practice
- HAP100 Australian Politics
- HAS100 Sociology 1A
- HAS101 Sociology 1B
- HES1500 Introduction to Chemistry
- HET226 Sensory Systems
- HET231 Perception & Motor Systems
- HMA278 Design & Measurement 2

**Recommended Study Sequence**

**Semester 1**

- HAY100 Psychology 100
- HET102 Introductory Physiology
- HMA103 Statistics & Research Methods A
- Elective* (Choose one):
  - HAH100 Introduction to Philosophy
  - HAM113 Professional Communication Practice
  - HAP100 Australian Politics
- HAS100 Sociology 1A
- HES1500 Introduction to Chemistry
- HIT2080 Introduction to Programming
- HM 5111 Engineering Mathematics 1

**Semester 2**

- HAY101 Psychology 101
- HET133 Human Physiology
- HET148 Technology & Data Acquisition
- Elective* (Choose one):
  - HAH103 Critical Thinking
  - HAM 105 The Media in Australia
  - HAS101 Sociology 1B
  - HES1500 Introduction to Chemistry
- HET124 Energy & Motion
- HIT2080 Introduction to Programming
- HM 5111 Engineering Mathematics 1

**Semester 3**

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

**Semester 4**

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

**Optional IBL year**

- HET300 Industry-Based Learning
- HET400 Industry-Based Learning

**Semester 5**

- HAY308 Psychology of Personality
- HAY309 Psychological Measurement
- HET227 Neurophysiology
- HET226 Sensory Systems
- HET231 Perception & Motor Systems
- HMA279 Design & Measurement 3
- HMA278 Design & Measurement 2
- HET527 Sleep & Attention
- HET528 Higher Cortical Function

**Semester 6**

- HAY307 Social Psychology
- HAY321 Abnormal Psychology
- HET300 Industry-Based Learning
- HET300 Industry-Based Learning
- HET300 Industry-Based Learning

* Students can choose electives from any course offered in the Higher Education Division, subject to prerequisite and timetable restrictions and Course Panel approval.

**Entry requirements**

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

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any) and in one of Biology, Chemistry, Mathematics (any), Psychology or Physics.
Selection mode: ENTER and two-stage process with a middle-band of approximately 20%.
2004 Final Clearly-In ENTER: 85.00

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34141(CSP), 34142 (Fee), 34143 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/su

N056 Bachelor of Social Science

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, 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 twenty-four 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. From 2005, commencing students are required to complete a combination of majors, minors and electives.

Mandatory subject (from 2005 onwards):
HM A103 Statistics and Research Methods A (for students completing a Psychology major or minor)

Students who commenced prior to 2005 are required to complete HM A104, or HM A105 (if 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: HAS100 and HAS101) 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 wishing to undertake a Psychology major are required to complete ten subjects (refer to the relevant area-of-study section).

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 Arts and Social Science subjects offered by the Faculty of Life and Social Sciences, and subject to approval, from other areas of study.

From 2005, students must choose one of the following options:
Option 1 - Two majors and eight electives
Option 2 - Two majors, one minor, and three electives
Option 3 - One major, two minors, and six electives

NOTE: At least one major MUST be Social Science specific. The other major (or minors) may be from the Arts area of study.

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 student has enrolled in a subject coded as a Stage 2 subject (HAP221), it cannot be counted as a Stage 3 subject (HAP321).
- Students commencing in 2005 or later are not permitted to study a Business major, but may study a Business minor.

NOTE: Students completing a Business minor are not permitted to complete any further subjects outside Arts and Social Sciences.

- Students may complete a maximum of five subjects (excluding HM A103, HM A104, HM A278 and HM A279) outside Arts and Social 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/Specialisation
To qualify for the award of the Bachelor of Social Science degree, students must complete at least one major chosen from Social Science. Students may choose a second major from Arts or Social Science, or minors from Arts, Social Science or Business.

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

Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).
2004 Final Clearly-In ENTER: 80.05
Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and have at least five years related work experience, may be considered for admission if they can demonstrate motivation and ability to succeed.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC Code: 34221 (CSP), 34222 (Fee), 34223 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
Part-time study is also available to Australian citizens and holders of Australian residency.
International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swinburne.edu.au/isu

Social Science Specialisations

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.

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
The following subjects can be taken as Stage 2 or Stage 3 but not both:
- HAP221/HAP231 Modern Australia
- HAP228/HAP328 Globalisation:Transformations in World Politics, Economy and Culture
- HAP229/HAP329 Politics in Pacific Asia
- HAP231/HAP331 Dictators, Democrats and Dynasties: Comparative Politics
- HAPM 226/HAPM 326 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
- HASP309 Social Research Design: Principles and Methods
- HASP307 Qualitative Research Methods
- HAP322 Research Internship in Politics (equivalent to 2 subjects - 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 up a career related to psychology after completion of a three-year program, but some choose to undertake further study in order to work specifically as psychologists. To be regarded as a professionally trained psychologist in Australia, it is necessary to be eligible for registration as a psychologist with a State Psychologist Registration Board. Membership of the Australian Psychological Society (APS) is also highly desirable. The minimum requirement for registration as a probationary psychologist in the state of Victoria is completion of four years progressive study in psychology, including specified elements. The minimum academic requirement for associate membership of the APS is completion of an accredited four-year program of psychological study. The Swinburne psychology major has APS approval as a three-year sequence of study. The honors year in Psychology and the Postgraduate Diploma in Psychology at Swinburne are fourth-year courses which have APS accreditation.
Please refer to the Postgraduate Course Handbook for further information.

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 HM 103.
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:
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. The Swinburne Sociology major has a strong emphasis on policy and research skills. It provides a broad understanding of research design and students learn about different methods, ranging from participant observation and focus groups 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 experience of social research in the workplace 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 HASP309 or HASP307 (it is recommended that students take both subjects).

The Sociology major consists of the following:

**Stage 1**

- HAS100 Psychology 100
- HAS101 Psychology 101

**Stage 2**

- HAS205 Cognition and Human Performance
- HAS206 Developmental Psychology
- HM278 Design and Measurement 2
- HM279 Design and Measurement 3

**Stage 3**

- HAS207 Social Psychology
- HAS308 The Psychology of Personality
- HAS309 Psychological Measurement
- HAS312 Abnormal Psychology

A Psychology minor consists of six of the following subjects:

- HAS100 Psychology 100
- HAS101 Psychology 101
- HAS206 Developmental Psychology
- HM278 Design and Measurement 2
- HM279 Design and Measurement 3
- HAS307 Social Psychology
- HAS312 Abnormal Psychology

Swinburne University of Technology | Undergraduate Course Handbook 2005
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 twenty-four 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 majors/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.

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.

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/HAP321.
- 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 (HAP221), it cannot be counted as a Stage 3 subject (eg HAP321).
- Students commencing in 2005 or later are not permitted to complete a Business major, but may complete a Business minor.
- Students may complete a maximum of five subjects (excluding HMA103, HMA104, HMA278 and HMA279) outside Arts and Social 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/Specialisation
To qualify for the award of the Bachelor of Social Science (Psychology) degree, students must complete a Psychology component and one major or two minors, and elective(s).

Social Science majors/minors:
- Politics
- Psychology
- Sociology

Arts majors/minors:
- Australian Studies
- Cultural Studies
- Electronic Society
- Italian Studies
- Japanese
- Literature
- Media Studies
- Philosophy & Cultural Inquiry

Please refer to Bachelor of Arts for details

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

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.

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).
2004 Final Clearly-In ENTER: 86.10

Applicants who do not have a Year 12 qualification or who have a non-competitive Year 12 score and no other tertiary study, and have at least five years related work experience, may be considered for admission if they can demonstrate motivation and ability to succeed. Because of restrictions on numbers of places, not all eligible applicants can be offered a place.

Note: Applicants wishing to study Psychology should consider listing as preferences both specialist and general degree programs offering Psychology as a major at Swinburne. These include the Bachelor of Social Science, the Bachelor of...
Arts, the Bachelor of Applied Science (Psychology/Biochemistry), and the Bachelor of Arts (Psychology/Psychophysiology).

**Application procedure**

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 34341 (CSP), 34342 (Fee), 34343 (Int. Fee)

For further information, visit the VTAC website at: [www.vtac.edu.au](http://www.vtac.edu.au)

Part-time study is available to Australian citizens and holders of Australian residency.

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

**Double Degrees**

**J070 Bachelor of Multimedia in Games and Interactivity / Bachelor of Science in Computer Science and Software Engineering**

This double degree aims to provide students with a broad range of multimedia production skills combined with extensive skills in the software engineering and development required to develop games and interactive applications, in addition to a solid foundation in the history and theory of 2D and 3D games for employment in the following areas: games journalism, games research, interface design.

**Aims & Objectives**

Graduates should possess:

- A sound and broad knowledge of the design of multimedia and interactive applications and an appreciation of the various skills required.
- Skills in the application of learning and instructional design principles to structured multimedia and interactive applications.
- The ability to function effectively as an individual and in project teams, whether as manager, leader or team member.
- The communication and management skills required to successfully manage multimedia development projects.
- Been prepared for the rapidly evolving multimedia and games industries by developing their life-long learning skills and flexibility of mind.
- Knowledge of the computer networking and software technologies typical for multimedia production facilities; and skills in analysing, specifying and supporting those networking and software resources.
- An understanding of the process of multimedia and interactive application development, and the skills necessary for working in a development team on a large scale project.
- An understanding of the changing face of multimedia and the current games industry, in relation to both acceleration in the use and development of technology, and its impact on society.
- An understanding of the process of software development.
- Skills in the object-oriented approach to systems analysis, design and implementation.
- High level skills in developing software in Java and C++.
- An understanding of social, legal and ethical issues confronting the software engineering professional.
- An understanding of aspects of user-interaction.
- An immersive and experiential understanding of the interactive nature of game play.
- Knowledge of current aspects of game play including: terrain models, levels of detail, character and real-time animation, game architecture and user-interaction.
- An understanding of game-specific principles such as ludology and haptics and their application to wider games research.
- Skills to build large-scale graphical simulations and non-recreational games.

**Campus**

Hawthorn

**Career opportunities**

Career outcomes for graduates of this program will lead to possible employment opportunities in the multimedia, information technology and electronic games-related areas. Graduates who possess multimedia skills are expected to be in high demand as the media industry progressively shifts its delivery to the newer multimedia platforms. Examples include web authoring for electronic publications and news broadcasts, computer authoring and information architecture, 3D animation, non-linear video production and interactive television.

**Professional recognition**

It is expected that the program will be accredited at Professional Level with the Australian Computer Society.

**Course duration**

Four years full-time (50 credit points per semester), plus an optional and additional year of Industry-Based Learning (IBL).

**Structure**

This double degree requires students to successfully complete 400 credit points of approved subjects equivalent to four years of full-time study, with an optional and additional year of Industry-Based Learning (IBL) normally taken after three years of study.

These courses operate under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed equivalent to one hour of student work per week for one semester whether in contact with staff or in private study. Usually, four subjects are taken per semester, each subject having a value of 12.5 credit points. The typical student's average weekly workload during the semester is therefore expected to be 50 hours. Total student contact hours, including lectures, classes, tutorials, and laboratory sessions, will be approximately 16 hours/week during academic semesters.

Students choose subjects from three Subject Groups, completing at least 400 credit points made up of:

- Core Games & Interactivity Studies (112.5 credit points)
- Core Multimedia & CSSE Studies (237.5 credit points)
- Elective Studies (50 credit points)

**Course subjects**

All subjects have a value of 12.5 credit points unless indicated otherwise.

**Core Games & Interactivity Studies**

HET120 Interactive Games Structures
HET125 Physics of Games
HET325 Principles of Game Design
HET433 Multimedia Interfaces
HET435 Games & Interactivity Project 2
HIT3046 Artificial Intelligence for Games
HIT3083 Digital Graphics
HIT3143 Games Programming
HIT3158 Games & Interactivity Project 1

**Core Multimedia & CSSE Studies**

HDM101 Design for Multimedia 1
HDM102 Design for Multimedia 2
HET208 3D Animation & Special Effects
HET213 User Experience Design
HET215 Multimedia Applications
HET222 Digital Video & Audio
HIT103 Introduction to Software Engineering
HIT1051 Software Development 1
HIT1052 Software Development 2
HIT2016 Database 1
HIT2056 Software Project Management
HIT2120 Data Communications and Security
HIT2253 Data Structures and Algorithms
HIT3017 Database 2
### Recommended Study Sequence

**Semester 1**
- HDM D101 Design for Multimedia 1
- HET120 Interactive Games Structures
- HIT1051 Software Development 1
- HIT2016 Database 1

**Semester 2**
- HDM D102 Design for Multimedia 2
- HET125 Physics of Games
- HIT1052 Software Development 2
- HM 5133 Mathematics for Computing

**Semester 3**
- HET208 3D Animation & Special Effects
- HET215 Multimedia Applications
- HIT1031 Introduction to Software Engineering
- HIT2253 Data Structures and Algorithms

**Semester 4**
- HET213 User Experience Design
- HET325 Principles of Game Design
- HIT3041 Advanced Web Development
- HIT3054 C++ for Java Programmers

**Semester 5**
- HIT222 Digital Video & Audio
- HIT3046 Artificial Intelligence for Games
  Choose two of:
  - HALM 104 Media, Literature & Film: Texts & Contexts
  - HDM D243 Typographic Design for Screen
  - HET313 Telecommunications Technologies
  - HIT407 Multimedia Technology
  - HIT3087 Advanced Java

**Semester 6**
- HIT2056 Software Project Management
- HIT3083 Digital Graphics
- HIT3143 Games Programming
  Choose one of:
  - HBSG200 New Venture Development & Management
  - HET104 LAN Principles
  - HET332 Interactive Multimedia

### Optional IBL year
- HET433 Multimedia Interfaces
- HIT2220 Data Communications and Security
- HIT3149 Analysis, Modelling & Design
- HIT3158 Games & Interactivity Project 1

**Semester 7**
- HET435 Games & Interactivity Project 2
- HIT3017 Database 2
- HIT3044 Professional Issues in Information Technology

Choose one of:
- HET324 Interactive Animation
- HET332 Interactive Multimedia
- HET412 Networking & Online Games
- HIT2114 Operating Systems (Linux)

Note: HET104 is a prerequisite for HET412

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

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any) and in Mathematical Methods or Specialist Mathematics. Bonuses may apply for applicants who have successfully completed Information Technology: Information Systems, and/or Units 3 & 4 Specialist Mathematics.

2004 Final Clearly-In ENTER: New course for 2005

### Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 34721 (CSP), 34722 (Fee), 34723 (Int. Fee)
For further information, visit the VTAC website at: www.vtac.edu.au
International students should contact the International Student Unit on +61 3 9214 8647 or via the website at: www.swinburne.edu.au/isu

### Aims & Objectives
This course aims 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.
- 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.
Students must complete at least 500 credit points made up of:

- Management and Business Studies
- Specialist Technical (BMS) Studies
- Engineering & Science (BMS) Core Studies

Students choose subjects from five Subject Groups:

- Staff or in private study. Four subjects, each worth 12.5 credit points, will to one hour of student work per week over a semester, whether in contact with.
- 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.
- Develop in students a mastery of a wide spectrum of basic engineering principles underlying electronics and computer systems engineering.
- 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.
- 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.
- Integrate the formal course of study with an optional one year period of industry based learning.
- 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
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, anesthesiology, 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

Students must complete at least 500 credit points made up of:

- Engineering & Science (BMS) Core Studies (337.5 credit points)
- Software Engineering Studies (25 credit points)
- Technical (BMS) Studies (31.5 credit points)
- Specialist Technical (BMS) Studies (50 credit points)
- Management and Business Studies (37.5 credit points)
- Software Engineering or Specialist Technical (BMS) Studies (12.5 credit points)

Course subjects
All subjects have a value of 12.5 credit points unless indicated otherwise.

Engineering & Science (BMS) Core Studies
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
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
HM5111 Engineering Mathematics 1
HM5112 Engineering Mathematics 2
HM5113 Engineering Mathematics 3B
HM5214 Engineering Mathematics 4B

Technical (BMS) Studies
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
HIT3128 Intelligent Systems

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

Specialist Technical (BMS) Studies
HES150 Introduction to Chemistry
HES1525 Chemistry 2
HET103 Photonics 1
HET219 Neurological Monitoring
HET227 Neurophysiology
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.

ESBA056 Bachelor of Science in Biotechnology/Biochemistry / Bachelor of Arts in Media and 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.
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

**Career opportunities**

This double degree course prepares graduates for careers in the media and communications industries, where their expert understanding of the sciences associated with biotechnology will allow them to deal critically with technological issues and enhance community understanding.

**Professional recognition**

Graduates may apply for membership of the following professional societies:

- Australian Biotechnology Association
- The Australian Society for Biochemistry and Molecular Biology
- Australian Society for Microbiology

**Curriculum**

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 fourth 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; i.e. subjects that would normally be regarded as contributing to the science component of a science degree. 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. Details of the requirements for the major in Media and Communications and specification of the other arts electives are given under the single degree for arts (majoring in Media and Communications).

**Course subjects**

**Stage 1**

**Semester 1**

- HES1610 Human Biology
- HES1500/HES1500E Introduction to Chemistry
- HMAS111 Engineering Mathematics
- HALM104 Media Literature Film

**Semester 2**

- HMS102 Introduction to Statistics
- HES1616 Concepts of Biotechnology
- HES1525 Chemistry 2
- HAM105 The Media in Australia

**Stage 2**

**Semester 1**

- HES2621 Introduction to Biochemistry
- HES2631 The Microbial World
- Science Elective*  

- Arts Media/Comm Subject

**Semester 2**

- HES2626 Biochemistry of Genes and Proteins
- HES2636 Microbes in the Environment
- Science Elective*  

- Arts Media/Comm Subject

**Stage 3**

**Semester 1**

- HES4621 Advanced Biochemistry
- HES4641 Practical Biochemistry
- Arts Media/Comm Subject
- Arts Elective

**Semester 2**

- HES4626 Biotechnology
- HES4646 Biotechnology Research Project
- Arts Media/Comm Subject
- Arts Elective

**Stage 4**

**Semester 1**

- Arts Media/Comm Subject
- Arts Media/Comm Subject
- Arts Elective
- Arts Elective

**Semester 2**

- Arts Media/Comm Subject
- Arts Media/Comm Subject
- Arts Elective
- Arts Elective

* Students must choose two Science Elective subjects from:
- HES2541 Analytical Chemistry
- HES2526 Organic Chemistry
- HES2510 Investigative Chemistry Pract 1
- HES2540 Forensic and Analytical Science
- HES2520 Chemistry 3
- HES2515 Investigative Chemistry Pract 2

IBL, if undertaken, is generally taken between Stages 2 and 3 and consists of:
- HES3300 Industry-Based Learning, and/or
- HES3305 Industry-Based Learning

**Entry requirements**

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

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any), and in one of Biology, Chemistry, Physics or Psychology and in one of Mathematics (any).

2004 Final Clearly-In ENTER: 80.55

**Application procedure**

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

VTAC code: 34241 (CSP), 34242 (Fee), 34243 (Int. Fee)

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

Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swin.edu.au/hed/scholarships/vcschol.htm

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swin.edu.au/isu
ESBB056 Bachelor of Science in Biotechnology/Biochemistry / Bachelor of Business

This double degree course 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 scientific 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 professional philosophy and a sound professional attitude.
- Skills in self education, evaluation of new information and encouragement in flexibility of thought, to prepare students for a world of accelerating technological change. In addition, this course aims to develop:

  - An understanding of the local and global business environment.
  - General business knowledge and skills, especially in the area of management.
  - An advanced understanding of the roles of research and development in the development of business enterprises.
  - An understanding of entrepreneurship and the management of entrepreneurship in business.
  - An understanding of the processes of innovation.
  - Excellent skills for professional communication, especially within the business environment.

Campus

Hawthorn

Career opportunities

This double degree course provides professional education in biotechnology and business that enables graduates to use scientific research and innovative skills to create new business enterprises or to contribute to existing businesses.

Professional recognition

Graduates may apply for membership of the following professional societies:

- Australian Biotechnology Association
- The Australian Society for Biochemistry and Molecular Biology
- Australian Society for Microbiology

The following professional recognition applies to studies in the Bachelor of Business, although in some cases additional subjects to the minimum required for a Major may be needed.

- 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 fourth 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. To qualify for the award of BBus a student must complete 200 credit points of business subjects that are selected to fulfill the requirements for the business degree.

Course subjects

Stage 1

Semester 1

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HES1610</td>
<td>Human Biology</td>
</tr>
<tr>
<td>HES1500</td>
<td>Introduction to Chemistry (Chemistry 1), or</td>
</tr>
<tr>
<td>HES1500E</td>
<td>Introduction to Chemistry</td>
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<td>HM5111</td>
<td>Engineering Mathematics 1</td>
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<td></td>
<td>Core Business Subject#</td>
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Semester 2

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
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<tbody>
<tr>
<td>HES1616</td>
<td>Concepts of Biotechnology</td>
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<tr>
<td>HES1525</td>
<td>Chemistry 2</td>
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<tr>
<td>HM5102</td>
<td>Introduction to Statistics</td>
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<td>HBH110</td>
<td>Organisations &amp; Management</td>
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Stage 2

Semester 1

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
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<tbody>
<tr>
<td>HES2621</td>
<td>Introduction to Biochemistry</td>
</tr>
<tr>
<td>HES2631</td>
<td>The Microbial World</td>
</tr>
<tr>
<td></td>
<td>Science Elective*</td>
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<td></td>
<td>Core Business Subject#</td>
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Semester 2

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
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<tbody>
<tr>
<td>HES2626</td>
<td>Biochemistry of Genes and Proteins</td>
</tr>
<tr>
<td>HES2636</td>
<td>Microbes in the Environment</td>
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<tr>
<td></td>
<td>Science Elective*</td>
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Stage 3

Semester 1

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<tr>
<th>Subject Code</th>
<th>Subject Name</th>
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<tbody>
<tr>
<td>HES4621</td>
<td>Advanced Biochemistry</td>
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<tr>
<td>HES4641</td>
<td>Practical Biochemistry</td>
</tr>
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<td></td>
<td>Core Business Subject#</td>
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<tr>
<td></td>
<td>1st Subject of Business Major</td>
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</table>

Semester 2

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HES4626</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>HES4646</td>
<td>Biotechnology Research Project</td>
</tr>
<tr>
<td></td>
<td>2nd Subject of Business Major</td>
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<tr>
<td></td>
<td>3rd Subject of Business Major</td>
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Stage 4

Semester 1

<table>
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<th>Subject Code</th>
<th>Subject Name</th>
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<tbody>
<tr>
<td></td>
<td>4th Subject of Business Major</td>
</tr>
<tr>
<td></td>
<td>5th Subject of Business Major</td>
</tr>
<tr>
<td></td>
<td>1st Subject of Business Minor</td>
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<tr>
<td></td>
<td>2nd Subject of Business Minor</td>
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</table>

Semester 2

<table>
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<tr>
<th>Subject Code</th>
<th>Subject Name</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>6th Subject of Business Major</td>
</tr>
<tr>
<td></td>
<td>3rd Subject of Business Major</td>
</tr>
</tbody>
</table>
General intellectual and academic knowledge. The Honours program aims to help students develop:

- professional and administrative areas.
- project management especially appropriate for students seeking employment.

For students seeking employment after their undergraduate study, an Honours degree can prove to be an advantage. The fourth year of study includes 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).

Most universities require a four-year undergraduate course as a prerequisite to the background required to pursue a range of postgraduate studies.

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

2004 Final Clearly-In ENTER: 80.55

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

Applicants who believe they will receive an ENTER of at least 95.00, have an opportunity to undertake this course through the Vice-Chancellor's Scholarship Program. For further information visit the website at: www.swin.edu.au/hed/scholarships/vcschol.htm

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

Honours Year

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 enrollment 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 on 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%

Course subjects

Industry and Community Studies strand
Available to students who have majored in Australian Studies, Media Studies, Politics or Sociology.

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry and Community Studies Seminar A</td>
<td>HAI440</td>
</tr>
<tr>
<td>Industry and Community Studies Seminar B</td>
<td>HAI441</td>
</tr>
<tr>
<td>Honours Thesis A (Industry &amp; Community Studies)</td>
<td>HAI442</td>
</tr>
<tr>
<td>Honours Thesis B (Industry &amp; Community Studies)</td>
<td>HAI443</td>
</tr>
</tbody>
</table>

Languages strand
Available to students who have majored in Italian or Japanese.

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td>Languages Seminar A (Italian)</td>
<td>HAA440</td>
</tr>
<tr>
<td>Languages Seminar B (Italian)</td>
<td>HAA441</td>
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<tr>
<td>Honours Thesis A (Italian)</td>
<td>HAA442</td>
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<td>Honours Thesis B (Italian)</td>
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<td>Languages Seminar A (Japanese)</td>
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<td>Honours Thesis A (Japanese)</td>
<td>HAJ442</td>
</tr>
<tr>
<td>Honours Thesis B (Japanese)</td>
<td>HAJ443</td>
</tr>
</tbody>
</table>

Media Studies and Cultural Studies strand
Available to students who have majored in Asian Studies, Literature, Media Studies, Philosophy and Cultural Inquiry or Politics.

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media and Cultural Studies Seminar A</td>
<td>HAC440</td>
</tr>
<tr>
<td>Media and Cultural Studies Seminar B</td>
<td>HAC441</td>
</tr>
<tr>
<td>Honours Thesis A (Media and Cultural Studies)</td>
<td>HAC442</td>
</tr>
<tr>
<td>Honours Thesis B (Media and Cultural Studies)</td>
<td>HAC443</td>
</tr>
</tbody>
</table>

Psychology strand
Available to students who have majored in Psychology.

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Quantitative Methods</td>
<td>HAF453</td>
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</tbody>
</table>


HAY454 Psychological Assessment
HAY457 Ethics and Professional Issues
HAY459 Honours Thesis A (Psychology)
HAY460 Honours Thesis B (Psychology)

Plus one elective chosen from:
HAY453 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)

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 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 Faculty of Life and Social Sciences on +613 9214 8859 or email ssbadmin@swin.edu.au

Non-Swinburne students interested in the Psychology strand should note the following: In the normal course of events, only Swinburne Psychology students are accepted into the Psychology Honours program. If you anticipate receiving an HD (H1) average in your third year subjects may contact the Psychology Honours Co-ordinator on 9214 8859. Psychology Honours applications will not be considered unless you have discussed your application with the Psychology Honours Co-ordinator prior to lodging your form. Non-Swinburne applicants who are deemed eligible to apply should complete the application form, available from the Faculty of Life and Social Sciences, by the due date.

Z069 Bachelor of Health Science (Honours) in Public and Environmental Health

This program provides an opportunity for selected students, who have achieved a high standard during the public and environmental health course, to graduate with a degree with honours.

Aims & Objectives
The honours year aims to: Provide high achieving students with an opportunity to deepen their intellectual understanding of public and environmental health; Enhance the research literacy of the environmental health workforce; Provide environmental and public health research assistance to government and private sectors; Provide a foundation for further studies to PhD level if desired.

Campus
Hawthorn

Career opportunities
Enhanced employment opportunities in all areas of environmental health.

Professional recognition
Graduates will be eligible to apply for membership of the Australian Institute of Environmental Health and the Public Health Association of Australia.

Course duration
One year full-time or part-time equivalent.

Structure
The course will operate under a student workload model based on 100 credit points for a full-time academic year. One credit point is deemed equivalent to one hour of student work per week (comprising classwork and private study/coursework). The typical students average weekly workload during semesters is therefore deemed to be 50 hours.

Course subjects
Semester 1
HASP306 Quantitative Research Methods
HASP307 Qualitative Research Methods
HES570 Honours Project

Semester 2
HES570 Honours Seminars
HES570 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.

Application procedure
Application should be made to the Honours in Public and Environmental Health Co-ordinator towards the conclusion of the final year of their course (or at the conclusion of second year for the accelerated program).

Z072Y Bachelor of Science (Honours) in Biochemistry/Chemistry

This program provides an opportunity for selected students, who have achieved a high standard during a biochemistry course, to continue their undergraduate studies to an honours level.

Aims & Objectives
The objective of this course is to allow high achieving students to gain a degree with honours in biochemistry. 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.

Add-On Mode
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.

Application procedure
Application should be made to the Honours in Biochemistry/Chemistry Coordinator towards the conclusion of the final year of their course (or at the conclusion of second year for the accelerated program).

S066 Bachelor of Science (Honours) in Biomedical Sciences

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.

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.

Course subjects
All subjects have a value of 12.5 credit points unless indicated otherwise.

Semester 1
HET801 Honours Project 1 (37.5 credit points)
HM5770 Statistical Practice 1

Semester 2
HET802 Honours Project 2 (37.5 credit points)
Choose one of:
HET738 Neuropsychology Methods
HET830 Biomedical Research Topics
HET704 Neuraphilosophy
HET771 Statistical Practice 2

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 Faculty of Life and Social Sciences, telephone (+61 3) 9214 8859

ESBH056 Bachelor of Science (Honours) in Biotechnology/Biochemistry

This program provides an opportunity for selected students, who have achieved a high standard during a biotechnology or biochemistry course, to continue their undergraduate studies to an honours level.

Aims & Objectives
The objective of this course is to allow high achieving students to gain a degree with honours in biotechnology. Students undertaking this course will also be prepared for higher degree studies.

Campus
Hawthorn

Career opportunities
This course equips graduates for careers in biochemistry and biotechnology related to the medical, health, food and beverage, wine, agricultural, chemical and environmental industries. It is also specifically designed as a pathway into higher research degrees (Masters and PhD).

Professional recognition
Graduates may apply for membership to the following professional societies:
Australian Biotechnology Association; The Australian Society of Biochemistry and Molecular Biology; Australian Society for Microbiology; Royal Australian Chemical Institute
Course duration
One year full-time, either as a single add-on year or merged over two years with part of the undergraduate program.

Structure
Two streams are available:

In most circumstances, the Honours course is completed in one year of full-time study after completion of a Bachelor of Applied Science or Bachelor of Science in biotechnology, biochemistry, or an equivalent degree. In this year, students will undertake honours lectures at an advanced level and a research project. 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.

Add-On Mode

Semester 1
HES5640 Honours Lectures
HES5690 Honours Project

Semester 2
HES5640 Honours Lectures
HES5690 Honours Project

Accelerated program

Stage 1 and 2
As per Bachelor of Science (Biochemistry/Chemistry) or Bachelor of Science (Biotechnology/Biochemistry) course.

Stage 3

Semester 1
HES3500 Industry-Based Learning
HES4520 Advanced Chemistry 1

Semester 2
HES3515 Industry Oriented Honours Project
HES4525 Advanced Chemistry 2*

Stage 4

Semester 1
HES5640 Biotechnology/Biochemistry Honours Lectures
HES5530 Biotechnology/Biochemistry Honours Project
HES4621 Advanced Biochemistry
HES4641 Practical Biochemistry

Semester 2
HES5640 Biotechnology/Biochemistry Honours Lectures
HES5580 Biotechnology/Biochemistry Honours Project
HES4626 Biotechnology

* May be replaced by an approved elective.

Entry requirements
For students to gain entry into the honours program, a weighted average mark of 65% or greater should have been achieved in approved subjects 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 Biotechnology Co-ordinator towards the conclusion of the final year of their course (or at the conclusion of second year for the accelerated program).

Z073Y Bachelor of Science (Honours) in Chemistry

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.

Aims & Objectives
The objective of this course is to allow high achieving students to gain a degree with honours in chemistry. Students undertaking this course will also be prepared for higher degree studies.

Campus
Hawthorn

Course duration
One year full-time.

Course subjects

Semester 1
HES5540 Honours lectures
HES5590 Honours project

Semester 2
HES5540 Honours lectures
HES5590 Honours project

Entry requirements
For students to gain entry into the honours program, a weighted average of 65% or greater should have been achieved in approved subjects 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 Co-ordinator towards the conclusion of the final year of their course.

Further information
Contact the Faculty of Life and Social Sciences, telephone (+61 3) 9214 8859

Z066Y Bachelor of Science (Honours) in Medical Biophysics

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 have contained a significant content of subjects in Medical Biophysics and Instrumentation. Students should have also demonstrated a high level of academic ability in this degree.

**Application procedure**
Contact the Faculty of Life and Social Sciences, telephone (+61 3) 9214 8859

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

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 within 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**
The course has the following objectives:
- To prepare students for professional practice in their chosen area.
- To provide students with the research and analytical skills associated with high quality research.
- To prepare students for the changing workplace and the changing societal context of science by developing their life-long learning skills and flexibility in thought.
- To develop students’ communication skills so that they can present their ideas clearly by verbal, written and graphic means.
- To provide students with experience in preparing scientific information for publication in peer-reviewed scientific journals.
- 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.
Swinburne, Lilydale Division

The Lilydale campus of Swinburne University was officially opened in 1997 to service the educational needs of those living in the outer eastern region of Melbourne. The campus has grown rapidly since, with a diverse range of programs in the areas of Business and Social Science as well as postgraduate opportunities.

Studying at 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: lidinfo@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 two minors, OR
- One major and one minor, OR
- Two majors.

Majors/Minors
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
- Business Law
- 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.

Core subjects
Students are required to complete five of the following core business subjects:

LAI100 Information Systems Fundamentals
LBC100 Accounting 1*
LBE100 Microeconomics
LBM100 Marketing Concepts
LCR100 Introduction to Commercial Law
LTE100 Introduction to Management (taken in second year)

* LBC101 Accounting Fundamentals is an alternative for students not wishing to undertake further studies in Accounting or Economics/Finance. In addition students must complete prerequisite subjects for chosen majors and minors. Please refer to the Lilydale specialisation section in the handbook 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.

2006 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any).

2004 Final Clearly-In ENTER: 67.55

Applicants who do not satisfy the above requirements may be selected after consideration of their employment and educational background.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 35101(CSP-F/T), 35251(CSP-P/T), 35102 (Fee-F/T), 35252 (Fee-P/T), 35103 (Int. Fee)
LO54 Bachelor of Business in 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 twenty-four 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.

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)

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.swin.edu.au/isu

L053A Bachelor of Business in 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 eBusiness environment.
• Cross-cultural sensitivity, recognition of ethical issues and ethical business behaviour.
• Enthusiasm and understanding of entrepreneurship and its application in the business world.

Campus
Lilydale

Career opportunities
Dramatic shifts in managing new business relationships, transactions and technologies are generating strong demand for knowledge and skills in eCommerce. Businesses, non-profit and government organisations are all making transitions and are seeking 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 degree comprises 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.

The Bachelor of Business (eCommerce) requires inclusion of an eCommerce major and an eEnterprise minor; the Lilydale core subject requirement and four business core subjects.

Core subjects
The four business subjects required are:
- LBC100 Accounting 1, or
- LBC101 Accounting Fundamentals, and
- LBE100 Microeconomics
- LBL100 Introduction to Commercial Law
- LBM100 Marketing Concepts

Plus at least one of:
- LAI100 Information Systems Fundamentals
- LCR100 Statistics and Research Methods
- LTE100 Introduction to Management

eCommerce Major
The eCommerce major consists of three second year and three third year subjects, post Stage 1:

Stage 1
- LEB105 eCommerce Fundamentals

Stage 2
- LEB210 Business Models of eCommerce
- LEB211 Deriving Business Value
- LEB212 The Networked Economy Stage 3
- LEB310 Designing eCommerce and EFS Systems
- LEB311 Developing eCommerce and EFS Systems
- LEB312 Business Transformation

eEnterprise Minor
The eEnterprise minor consists of two second year and two third year subjects, post Stage 1:

Stage 1
- LEB105 eCommerce Fundamentals

Stage 2
- LEB213 Managing People in the Networked Economy
- LEB214 e Enterprise Strategy and Project Management

Stage 3
- LBL300 Cyberlaw
- LBL313 e Enterprise Performance Measurement

Students may also be able to complete minor studies in one of:
- Marketing
- Economics
- Economics and Finance
- Information Systems
- Management
- Accounting
- Tourism
- Sociology
- Media.

These all provide an appropriate extension of knowledge and skills consistent with the aims and objectives of this degree.

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

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).
2004 Final Clearly-in ENTER: 58.50

Applicants who do not satisfy the above requirements may be selected after consideration of their employment and educational background. A quota for this entry applies.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 35241 (CSP), 35242 (Fee), 35243 (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.swin.edu.au/isu

L056A Bachelor of Business
in 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.

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 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 twenty-four 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 1 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.

Satisfactory completion of the course will require the inclusion of either:
- A major in Tourism and a major in Management; or
- A major in Tourism and a minor in Management; or
- A major in Management and a minor in Tourism.

Given the above structure, students may be able to select one additional minor, outside Tourism or Management, within this degree.

In determining subjects for chosen majors and minors students must be mindful of any prerequisites that exist.

Core subjects
Students are required to complete three of the following core business subjects:

- LBC101 Accounting Fundamentals*
- LBM 100 Marketing Concepts
- LBL100 Introduction to Commercial Law

Plus two of:

- LAI100 Information Systems Fundamentals
- LBE100 Microeconomics
- LCR100 Statistics and Research Methods
- LTE100 Introduction to Management

In addition, the following business subject is required for this course:

- LBM 200 Marketing Behaviour (required for Tourism Major)

* Students undertaking the Accounting minor, must undertake LBC100 - Accounting I instead.

Elective subjects
Students have the opportunity to undertake a number of elective subjects which are directly relevant to this degree, these include:

- LBL200 Company Law
- LBL201 Marketing Law
- LBX300 International Business Strategies
- LZZ301 Work Integrated Learning Project

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
- 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

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

Additional Business minors which are available with this course:

- Accounting minor
- Marketing minor

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

2006 VCE Prerequisites: Units 3 & 4 – a study score of at least 25 in English (any).

2004 Final Clearly-In ENTER: 59.50

Applicants who do not satisfy the above requirements may be selected after consideration of their employment and educational background.

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

VTAC code: 35031(CSP), 35032 (Fee), 35033 (Int. Fee)

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

International students should contact the International Student Unit on +61 3 9214 8647 or visit the website at: www.swin.edu.au/isu
L050 Bachelor of Social Science

The Bachelor of Social Science provides students with skills and abilities pertinent to a variety of professional careers in the public and private sectors of employment. Students are encouraged to develop a theoretical insight of their chosen disciplines to enable them to understand not only current developments in society and the workplace, but also to adapt and respond appropriately to future developments as they occur. In addition, the course is designed to enhance a number of generic skills highly valued by employers and important for the development of the individual, such as self-awareness, presentation and communication skills, and skills for the maintenance of learning and knowledge. This course offers a combination of breadth and specialisation: breadth as a foundation for lifelong learning and specialisation as a preparation for future professional and vocational pursuits. In the implementation of these principles attention will be given to the process of learning and thinking involved as well as the content. A student’s choice of subject combinations will be expanded by allowing significant selections across other degree streams. An honours year is available to students with a minimum of credit average.

Aims & Objectives

The Bachelor of Social Science is planned to enable students to:

- Develop learning skills in an interdisciplinary environment.
- Communicate effectively in writing, orally and electronically.
- Experience breadth of disciplinary studies and intellectual processes.
- Specialise in the field of their chosen profession.
- Study combinations of 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 teams.
- Articulate easily from previous tertiary study to complete a degree program.
- Develop the personal qualities and attitudes needed for professional success.
- Identify and understand the fundamental values that inform critical issues and decision making.

Campus

Lilydale

Career opportunities

The Sociology major, combined with appropriate subjects, can lead to career opportunities in a diverse range of fields. For example, graduates often work in areas of social research, administration, policy and planning, welfare, community development, human resources, policy and program evaluation and marketing, as well as many other sectors of society. The Psychology major, combined with appropriate 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.

Majors/Minors

At least one major must be taken from:

- eCulture and Media
- Psychology
- Sociology

In addition students may select majors in:

- Accounting
- Computing
- Economics
- Economics/Finance
- Human Resource Management
- Information Systems
- Information Technology
- International Trade
- Tourism

Some combinations, for example both Psychology and Accounting with professional recognition, will not be possible in the twenty-four unit structure. Majors are offered in:

- Accounting
- Business Computing
- Economics
- Economics/Finance
- Human Resource Management
- Information Systems
- Information Technology
- Language Studies
- Management
- Marketing
- 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.

Entry requirements

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

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any). 2004 Final Entry: ENTER: 61.25 Applicants who do not satisfy the above requirements may be selected after consideration of their employment and educational background.

Application procedure

Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 35201(CSP-P/T), 35151(CSP-P/T), 35202 (Fee-F/T), 35152 (Fee-P/T), 35203 (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.swin.edu.au/isu

Swinburne University of Technology | Undergraduate Course Handbook 2005
L064 Bachelor of Technology in 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 six or twelve 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 twenty-four 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.

Core Subjects
Students are required to complete the following five subjects:
LAC100 Computing Fundamentals
LAI100 Information Systems Fundamentals
LAS100 Software and Multimedia Concepts
LSM100 Texts and Contexts
LCL101 Information Methods

Information Systems Core Major

Stage 1
LAI1200 Information Systems Fundamentals
LAS100 Software and Application Development Concepts

Stage 2
LAI210 Database Concepts and Modelling

Stage 3
LAI240 Electronic Communications and Applications
LAC100 Computing Fundamentals
LAI300 Professional Reading & Writing in Technology and Culture, or
LAI320 Database Management Systems, or
LAC300 IT Professional and Ethical Issues

Entry requirements
Successfully 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’.

2006 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 studies and results, and to the student profile.

2003 Final Clearly-In ENTER: 58.15

Applicants who do not satisfy the above requirements may be selected after consideration of their employment and educational background.

This program will allow for smooth, well defined articulation to occur between Swinburne TAFE and Higher Education and vice versa.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 35281(CSP-F/T), 35291(CSP-P/T), 35282 (Fee-F/T), 35292 (Fee-P/T), 35283 (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.swin.edu.au/ius

L063 Bachelor of Technology in Information Technology and 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 six or twelve 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 twenty-four 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.

Core Subjects
Students are required to complete the following subjects:
LAC100 Computing Fundamentals
LAS100 Software and Multimedia Concepts
LA100 Information Systems Fundamentals
LCO101 Information Methods

Information Technology Core major

Stage 1
LAC100 Computing Fundamentals
LA100 Information Systems Fundamentals
LAS100 Software and Application Development Concepts

Stage 2
LAC200 Programming
LAC220 Systems Programming and Architectures
LA210 Database Concepts and Modelling
LAS200 Systems Analysis and Design

Stage 3
LAC300 IT Professional and Ethical Issues
LAS310 IT Strategies and Project Management

Software Engineering Co-minor

Stage 2
LA1240 Electronic Communications and Applications
LA1260 Human-Computer Interaction

Stage 3
LAC320 Advanced Programming and Systems Project (25pts)

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'.

2006 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 studies and results, and to the student profile.

2004 Final Clearly-In ENTER: 58.05

Applicants who do not satisfy the above requirements may be selected after consideration of their employment and educational background.

This program will allow for smooth, well defined articulation to occur between Swinburne TAFE and Higher Education and vice versa.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 35271(CSP-F/T), 35301(CSP-P/T), 35272 (CSP-F/T), 35302 (Fee-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.swin.edu.au/isu

L059 Bachelor of Technology in 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 six or twelve 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 twenty-four 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.

This program will allow for smooth, well defined articulation to occur between Swinburne TAFE and Higher Education and vice versa.

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC). VTAC code: 35271(CSP-F/T), 35301(CSP-P/T), 35272 (CSP-F/T), 35302 (Fee-P/T), 35273 (Int. Fee)

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Campus
Lilydale

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Professional recognition
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Course duration
Three years full-time or six years part-time. An additional period of Industry-Based Learning (IBL), for either six or twelve 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 twenty-four 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

Students are required to complete the following four subjects:

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAC100</td>
<td>Computing Fundamentals</td>
</tr>
<tr>
<td>LAI100</td>
<td>Information Systems Fundamentals</td>
</tr>
<tr>
<td>LAS100</td>
<td>Software and Multimedia Concepts</td>
</tr>
<tr>
<td>LSM100</td>
<td>Texts and Contexts</td>
</tr>
<tr>
<td>LCI101</td>
<td>Information Methods</td>
</tr>
</tbody>
</table>

Interactive Multimedia Core Major

Stage 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAS100</td>
<td>Software and Application Development Concepts</td>
</tr>
<tr>
<td>LSM100</td>
<td>Texts and Contexts</td>
</tr>
<tr>
<td>LAI100</td>
<td>Information Systems Fundamentals</td>
</tr>
</tbody>
</table>

Stage 2

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAC200</td>
<td>Programming (JavaScript &amp; HTML)</td>
</tr>
<tr>
<td>LAI260</td>
<td>Human-Computer Interaction</td>
</tr>
<tr>
<td>LAM270</td>
<td>Multimedia Tools and Concepts</td>
</tr>
<tr>
<td>LAM290</td>
<td>Multimedia and Web Design</td>
</tr>
</tbody>
</table>

Stage 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSM203</td>
<td>IM M Production and Project (25 credit points)</td>
</tr>
</tbody>
</table>

eCulture and Communication Co-minor

Stage 1

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAC100</td>
<td>Computing Fundamentals</td>
</tr>
</tbody>
</table>

Stage 2

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAI040</td>
<td>Electronic Communications and Applications</td>
</tr>
<tr>
<td>LSM203</td>
<td>New Media</td>
</tr>
</tbody>
</table>

Stage 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAC300</td>
<td>IT Professional and Ethical Issues</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. Alternatively, applicants with a Certificate IV (credit grade average) or a Diploma may be able to enter the degree level with 'advanced standing'.

2006 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 studies and results, and to the student profile.

2004 Final Clearly-In ENTER: 58.60

Candidates who do not satisfy the above requirements may be selected after consideration of their employment and educational background.

Application procedure

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

VTAC code: 35621(CSP-F/T), 35311(CSP-P/T), 35262 (Fee-F/T), 35312 (Fee-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 8647 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 or self-employment in the rapidly changing cultural, technological and business environments.

Throughout the Social Science stream, students are encouraged to develop skills in investigation and enquiry which may be applied to a range of situations. Social Science students learn how to gather, synthesise and assess information, how to conceptualise issues, and to express themselves effectively both orally and in writing. The Bachelor of Business course introduces the world of business through a range of compulsory core 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 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). 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 thirty-two 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 Business subjects

Select five of the seven subjects listed below:

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAI100</td>
<td>Information Systems Fundamentals</td>
</tr>
<tr>
<td>LBC100</td>
<td>Accounting</td>
</tr>
<tr>
<td>LBE100</td>
<td>Microeconomics</td>
</tr>
<tr>
<td>LBM100</td>
<td>Marketing Concepts</td>
</tr>
<tr>
<td>LBL100</td>
<td>Introduction to Commercial Law</td>
</tr>
<tr>
<td>LTE100</td>
<td>Introduction to Management</td>
</tr>
<tr>
<td>LCR100</td>
<td>Statistics and Research Methods</td>
</tr>
</tbody>
</table>

Swinburne University of Technology | Undergraduate Course Handbook 2005
LBC101 Accounting Fundamentals (an alternative for students not wishing to undertake further studies in Accounting or Economics/Finance)

Majors/Minors

Business major (at least one):
- Accounting*
- Marketing
- Economics
- Economics/Finance
- Human Resource Management
- Management
- Information Systems
- Tourism

Social Science major (at least one):
- eCulture & Media Studies
- Psychology**
- Sociology

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 ten and no more than twelve Stage 1 subjects, and at least six Stage 3 subjects.

* 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.

Entry requirements

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

2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).

2004 ENTER: Individual Offer

Applicants who do not satisfy the above requirements may be selected after consideration of their employment and educational background.

Application procedure

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

VTAC code: 35141 (CSP-F/T), 35231 (CSP-P/T), 35142 (Fee-F/T), 35232 (Fee-P/T), 35143 (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.swin.edu.au/isu

Lilydale Specialisations

Accounting - Major/Minor

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 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 Major

This combination is illustrative. Other combinations or subject choices are possible provided prerequisites are met.

Stage 1

LBC100 Accounting 1

Stage 2

Plus any four of:
- LBC200 Computer Accounting Systems
- LBC201 Corporate Accounting
- LBC202 Management Accounting 1
- LBC203 Computer Cost Accounting Systems
- LBC204 Financial Management 1

Stage 3

Plus any two of:
- LBC300 Accounting Theory
- LBC301 Taxation
- LBC302 Auditing
- LBC304 Personal Investment Issues
- LBC306 Strategic Financial Management

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 – 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
LAI260 Human-Computer Interaction
LAM270 Multimedia Tools and Concepts

Stage 3
LAI350 eCommerce and Business Computing Applications

Business Law – Minor

Stage 1
LBL100 Introduction to Commercial Law

Stage 2
LBL200 Company Law
LBL201 Marketing Law
LBL300 Cyberlaw
LBC301 Taxation

Computing – Major/Minor

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
LAC320 Advanced Programming and Systems Project (25pts)

Computing Minor

Stage 1
LAC100 Computing Fundamentals
LAS100 Software and Application Development Concepts

Stage 2
LAC200 Programming
LAI240 Electronic Communications and Applications, or
LAC220 Systems Programming and Architectures

Stage 3
LAC320 Advanced Programming and Systems Project (25pts)

Economics – Major/Minor

Understanding economic principles is an important requirement for a career in business. An economic approach to important practical social and business problems is the focus of the economics discipline. Economics is the study of what, how and for whom to produce: in essence, how society can achieve the maximum benefit from available resources. It emphasises the importance of sound decision making, at the level of the individual, the firm, and the society as a whole.

Economics examines problem areas such as unemployment, inflation, foreign debt and environmental degradation. It also provides guidance to decision makers on appropriate strategies for successful operation in both local and international markets. Within the economics major or minor, students also develop skills in interpreting and evaluating economic commentaries and reports and in applying economic principles to real issues facing business and government.

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

Stage 2 and 3
LBE200 Macroeconomics
Plus any five of the following with at least two at Stage 3:
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

Stage 2 and 3
LBE200 Macroeconomics
Plus any three of the following with at least one Stage 3:
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 – Major/Minor

The combination of Economics and Finance explores the role and nature of financial and capital markets – which includes regulatory authorities, corporations and government. Finance theory is a relatively recent development and draws on the disciplines of both economics and accounting. An Economics/Finance major or minor will equip graduates with a knowledge of financial instruments which are available, investment options available for both personal and enterprise investment, how different forms of financial markets function, the relationship between risk and reward and the relationship between the business enterprise and 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.
Specialisations

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 – Major/Minor
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
LSM 100  Texts and Contexts

Stage 2
LSM 200  eCulture  
LSM 201  Writing for the Media  
LSM 203  New Media

Stage 3
LSM 301  Electronic Writing  
LSM 302  Information Society  
LSM 304  Cyberscreen Studies

eCulture Minor

Stage 1
LSM 100  Texts and Contexts

Stage 2
LSM 200  eCulture  
LSM 204  Cinema Studies

Stage 3
LSM 302  Information Society  
LSM 304  Cyberscreen Studies

eMedia Minor

Stage 1
LSM 100  Texts and Contexts

Stage 2
LSM 200  Writing for the Media

Stage 3
LSM 301  Electronic Writing  
LSM 304  Cyberscreen Studies  
LZZ301  Work Integrated Learning Project

Media Minor

Stage 1
LSM 100  Texts and Contexts

Stage 2
LSM 201  Writing for the Media  
LSM 203  New Media

Stage 3
LSM 302  Information Society  
Plus one elective from eCulture and Media Studies discipline.

Human Resource Management – Major/Minor
Human Resource Management involves managing and coordinating the productive use of people to achieve the strategic business objectives of the organisation. Most HRM departments are responsible for planning, coordinating and advising on legal aspects of employment; determining, attracting and selecting employees and developing, rewarding and managing human resources. It serves as a catalyst for implementing and managing change and development and takes a 'line management' perspective to contribute to corporate profit margins.

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.

Human Resource Management 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
LS$300  Organisations and Society  
Plus any two of:  
LTE300  Organisational Change and Development  
LTE301  Strategic Planning & Project Management
LZZ301  Work Integrated Learning Project

**Human Resource Management 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 - Major/Minor**

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
LAI220  Management Support Systems
LAI260  Human-Computer Interaction
LAS270  Multimedia Tools and Concepts
LAI240  Electronic Communications and Applications

**Stage 3**
LAI350  eCommerce and Business Computing Applications
Plus one of:
LAI300  Professional Reading & Writing in Technology & Culture
LAI320  Database Management Systems
LAS310  IT Strategies and Project Management
LZZ301  Work Integrated Learning Project

**Information Systems Minor**

**Stage 1**
LAI100  Information Systems Fundamentals
LAS100  Software and Application Development Concepts

**Stage 2**
LAI210  Database Concepts and Modelling
LAI260  Human-Computer Interaction

**Stage 3**
LAI300  Professional Reading & Writing in Technology & Culture, or
LAI350  eCommerce and Business Computing Applications
Plus one Stage 2 or 3 Information Technology, Systems and Multimedia Discipline subjects.

**Information Technology - Major/Minor**

The Bachelor of Applied Science with a 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**
LAS200  Systems Analysis and Design
LAC200  Programming
LAI210  Database Concepts and Modelling

**Stage 3**
LAC200  IT Professional & Ethical Issues
Plus two of:
LAC220  Systems Programming and Architectures
LAC210  Advanced Programming and Systems Project
LAI320  Database Management Systems
LAS320  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**
LAS310  Information Technology Strategies and Project Management
Plus one elective from level 2 or 3 Information Technology, Systems and Multimedia Discipline.

**Interactive Multimedia - Major/Minor**

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.

**Career opportunities**

The Interactive Multimedia major 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 Major**

**Stage 1**
LCI101  Information Methods
LAS100  Software and Application Development Concepts
LAM 100  Texts and Contexts

**Stage 2**
LAI260  Human Computer Interaction
LAS270  Multimedia Tools and Concepts
Swinburne University of Technology |

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>LSM 200</td>
<td>eCulture</td>
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<tr>
<td>LAM 290</td>
<td>Multimedia &amp; Web Design</td>
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<td><strong>Stage 3</strong></td>
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<tr>
<td>LAI 300</td>
<td>Professional Reading &amp; Writing in Technology &amp; Culture</td>
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<tr>
<td>LSM 301</td>
<td>Electronic Writing, OR</td>
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<tr>
<td>LAM 300</td>
<td>Interactive Multimedia Project (25 Credit Points)</td>
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**Interactive Multimedia Development Minor**

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<th>Stage 1</th>
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<td>LSM 100</td>
<td>LAI 300</td>
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<td>LC101</td>
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<td></td>
<td>LAM 270</td>
<td>LAM 290</td>
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**Management – Major/Minor**

Management addresses the principles and processes of management strategies, structures and practices. In the context of a competitive globalised economy, students study how to develop expertise in professional management. The course recognises the diverse relationships accompanying increasingly rapid change in organisations, development processes and the nature of work. It also examines the challenge that organisations face to incorporate 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**

This combination is recommended.

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**Management Minor**

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<td>LTE 201</td>
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**Stage 3**

Any two of:

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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>LTE 300</td>
<td>Organisational Change and Development</td>
</tr>
<tr>
<td>LTE 301</td>
<td>Strategic Planning &amp; Project Management</td>
</tr>
<tr>
<td>LSM 302</td>
<td>Information Society: Promises and Policies</td>
</tr>
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</table>

**Marketing – Major/Minor**

Successful companies employ customer driven strategies. Marketing deals with the building and implementation of customer focus. The meaning of marketing is often misunderstood: one need look no further than the many advertisements without any real substance as to customer benefits and/or the delivery of these benefits. Frequently, no distinction is made between advertising, selling and marketing.

Marketing changes the focus and the attitudes prevailing in the organisation, provided staff understand the meaning of marketing. What does marketing mean? The answer is relatively simple: put yourself inside the skin of your customers and forget yourself for a while. Instead of thinking on behalf of your customers you have to learn to listen to your clients, accept what they say at face value and deliver what they want to satisfy their particular needs, thereby achieving long term profitability or other goals through repeat business.

At Swinburne, we explain the components of a business plan and marketing’s central role in strategy. Students are introduced to topics such as consumer behaviour, demand determinants, customer focus, market research, market planning, marketing channels, product and services management, advertising and promotion, international marketing and business to business marketing.

Students are encouraged to think through problems and to find their own answers. They are introduced to frameworks, models and thinking processes to ensure that they make the most of their abilities. A variety of practical assignments and presentations ensure that the theory is put into practice, for the benefit of students and employers. Vision, understanding, creativity, and the power to influence the future are the outcomes of the marketing curriculum.

**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 Major**

This combination is mandatory. Other combinations or subject choices may be negotiated.

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<th>Stage 1</th>
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**Stage 3**

Any two of:

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<th>Course Code</th>
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<tr>
<td>LBM 300</td>
<td>Product Management</td>
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<tr>
<td>LBM 301</td>
<td>Services Marketing and Management</td>
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<tr>
<td>Elective:</td>
<td>LBL 201 Marketing Law</td>
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**Marketing Minor**

This combination is recommended. Other combinations or subject choices may be negotiated.

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<td>LBM 200</td>
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<tr>
<td>LCR 100</td>
<td>LBM 201</td>
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</tbody>
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LSY300 The Psychology of Personality

Stage 3
One of:
LSY300 Product Management, or
LSY301 Services Marketing and Management

Psychology – Major/Minor

The undergraduate psychology program provides students with an introduction to psychology in all three stages. Stage 1 in psychology introduces students to a range of topics in psychology and experimental design and analysis. Stage 2 and 3 follows up on some of these areas in more detail. In Stage 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 one 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.

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
LSQ300 Design and Measurement 3

Stage 3
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 – Minor

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.

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 – Major/Minor

Sociology is the study of people in groups, ranging from the family to whole societies, such as Australia. It is about how individual and group behaviour shapes groups and society, and in turn, how behaviour is shaped by society and its institutions. A group may be as diverse as a large firm, a school, a rock band, the public service, or a voluntary agency such as a sporting club or community housing association. An appreciation of the different ways social group behaviour can be explained, and the various methods which can be used to get a better understanding of the social world is important to Sociology. Understanding group behaviour, being familiar with different explanations for this behaviour, and being able to gather data to explore aspects of the social world are important skills, both for employment purposes and for being a knowledgeable and participating citizen of Australian society.

The teaching of sociology is focussed on both conceptual and applied skills including problem identification, statistics, research methods, the formation of life-long learning skills, policy design and implementation. What differentiates sociology at Swinburne from what is taught by sociology departments at other
tertiary institutions is our emphasis on comparing Australia with other parts of the world, and in applying sociology to solve practical problems. There are four specific types of skills we try to develop. First, we develop an awareness of core sociological concepts such as class, gender and ethnicity. Second, we show the different ways these concepts have been applied to specific fields of study such as the family, the city, deviance, gender and migration. Third, we explore how governments respond to social problems through policy initiatives, and we explain how these initiatives can be evaluated. Finally, we develop an acute awareness of how to gather data about the social world, and how this data can be used for a wide range of purposes.

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 – Major/Minor
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 (e.g. attractions, transport and tour services), in other enterprises where tourists are involved (e.g. 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

Stage 3
Plus one of:
LTT300 Tourism Channels and Travel Management
LTT302 Planning and Management in Eco-tourism

Dual Awards
LO57 Bachelor of Business / Advanced Diploma of Business in 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 (Marketing) 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 (AM I).

**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 who commence their studies in 2003 are therefore required to undertake the TAFE modules in the Advanced Diploma of Business (Marketing) plus twelve degree subjects.

**Course subjects**
The twelve Higher Education subjects are:

- **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
  - **Semester 2**
    - LCI101 Information Methods
    - LCT100 Science Technology and Society

- **Year 4**
  - **Semester 1**
    - LBM300 Product Management
  - **Semester 2**
    - LBE100 Microeconomics
    - LBM301 Services Marketing and Management

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

- 2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).
- 2004 Final Clearly-In ENTER: 64.65

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 an advanced diploma in marketing.

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

VTAC code: 35171 (CSP), 35172 (Fee), 35173 (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.swin.edu.au/isu

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**L072 Bachelor of Business in 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.

**Course subjects**
In addition to the TAFE subjects in the Advanced Diploma of Business (Accounting), students will be required to undertake the degree subjects as follows:

- **Year 1**
  - **Semester 1**
    - LBM100 Marketing Concepts
  - **Year 2**
    - **Semester 1**
      - LCI101 Information Methods
    - **Semester 2**
      - LCT100 Science Technology and Society

- **Year 3**
  - **Semester 1**
    - LBE100 Microeconomics
    - LBM301 Services Marketing and Management
  - **Semester 2**
    - LBC202 Management Accounting 1
    - LBE200 Macroeconomics
    - LBL200 Company Law
    - LCT100 Science Technology and Society
    - LBC203 Computer Cost Accounting Systems
    - LBC204 Financial Management 1

- **Year 4**
  - **Semester 1**
    - LBC300 Accounting Theory
    - LBC301 Taxation
  - **Semester 2**
    - LBC302 Auditing
    - Elective or subject for minor
Entry requirements
Successful completion of an appropriate Victorian Year 12 or its equivalent, such as an interstate or international Year 12 qualification.
2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).
2004 Final Clearly-In ENTER: 63.40
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 Advanced Diploma of Business (Accounting)

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 35041 (CSP), 35042 (Fee), 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.swin.edu.au/isu

L070 Bachelor of Business in 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.

Campus
Lilydale

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 sixteen degree subjects.
For students who enrol from 2003 the Higher Education subjects are:

Year 2
Semester 1
LCR100 Statistics and Research Methods
Semester 2
LTE100 Introduction to Management

Year 3
Semester 1
LC1101 Information Methods
LCT100 Science, Technology and Society
LTT 201 Tourist Destination Management
LTT204 Regional Issues in Tourism
Semester 2
LBC101 Accounting Fundamentals
LBM 200 Marketing Behaviour
LTE201 Human Resource Management
LTT202 Tourism Enterprise Development

Year 4
Semester 1
LBL100 Introduction to Commercial Law
LTT 300 Tourism Channels and Travel Management
LTE 302 Leadership and Management
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 interstate or international Year 12 qualification.
2006 VCE Prerequisites: Units 3 & 4 - a study score of at least 25 in English (any).
2004 Final Clearly-In ENTER: 59.65
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

Application procedure
Applications must be made through the Victorian Tertiary Admissions Centre (VTAC).
VTAC code: 35051(CSP), 35052 (Fee), 35053 (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.swin.edu.au/isu

Honours Year
L076 Bachelor of Applied Science (Honours)
The Honours course at Swinburne's Lilydale campus builds on the multidisciplinary 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 integrated with 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: computing, information technology, or information systems. In addition they will
have the advantage of 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**
- LHO400 Honours Research Methods (25 credit points)
- LHO401 Honours Research Practice (25 credit points)

**Semester 2**
- LHO402A Research Project (50 credit points)

**Further information**
Contact Kathryn Pring at Swinburne, Lilydale on +61 3 9215 7322
Email: kpring@swin.edu.au
Website: www.ld.swin.edu.au/honours

**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. Students may work on either individual or team projects. Co-operative learning and team work 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 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 multi-disciplinary research skills and intensive team work experience. Students will be well prepared for professional employment in which conceptual and organisational 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**
- LHO400 Honours Research Methods (25 credit points)
- 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.

Further information
Contact Kathryn Pring at Swinburne, Lilydale on +61 3 9215 7322
Email: kpring@swin.edu.au
Website: www.ld.swin.edu.au/honours

**L078 Bachelor of Social 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 will provide 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. Co-operative learning and team work 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 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 multi-disciplinary research skills and intensive team work experience. Students will be well prepared for professional employment in which conceptual and organisational 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**
- 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 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 Australia’s centre of teaching excellence and innovation 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
Telephone: +61 3 9214 6975
Facsimile: +61 3 9214 6574
Email: info@nica.com.au
Website: nica.com.au

DCA10 Bachelor of Circus Arts

The National Institute of Circus Arts (NICA) has been established as a national centre of excellence for professional training in circus arts and physical theatre. 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.
- Rigging and health and safety in the circus environment.

Campus
Prahran

Career opportunities
Formal training in circus skills opens up exciting opportunities for a future career. Graduates are highly employable, knowledgeable and creative. They have found careers nationally and internationally. NICA training can lead to work in contemporary circus, traditional circus, social circus, stunt work, corporate entertainment, festivals, teaching and other sectors of the arts industry. New companies are emerging as NICA graduates find their place in Australia’s cultural landscape.

Professional recognition
The 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 in Circus Arts and the 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.

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.

<table>
<thead>
<tr>
<th>Year 1 (Certificate IV)</th>
<th>Core modules</th>
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<tbody>
<tr>
<td></td>
<td>Anatomy and Physiology in Injury Prevention and Management</td>
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<td>Basic First Aid</td>
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<td>Cardiopulmonary Resuscitation</td>
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<td>Communication in a Circus Workplace</td>
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<td>Occupational Health &amp; Safety and Security Procedures</td>
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<td></td>
<td>Rigging 1</td>
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<td>Conditioning through Basic Circus Skills 1</td>
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<td>Dance and Movement 1</td>
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<td>Introduction to Specialisation</td>
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<td>Participation in Production 1</td>
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<td>Performance Studies</td>
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<tr>
<th>Enhancement modules</th>
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<tbody>
<tr>
<td>Critical Analysis 1</td>
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<td>History of Circus</td>
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<tr>
<th>Year 2 (Diploma)</th>
<th>Core modules</th>
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<td>Equipment</td>
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<td>Make-up Application</td>
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<td></td>
<td>Rigging 2</td>
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<td>Voice Production</td>
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| Specialization Skills 2 – Advanced Acrobatics in Ground to Air Routines |
| Specialization Skills 3 – Aerial Skills |
| Specialization Skills 4 – Manipulation Skills |
| Specialization Skills 5 – Comedy |

<table>
<thead>
<tr>
<th>Enhancement modules</th>
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<tbody>
<tr>
<td>Circus Culture</td>
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<tr>
<td>Critical Analysis 2</td>
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<td>Skills for Small Business</td>
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<tr>
<th>Year 3 (Degree)</th>
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<tbody>
<tr>
<td>Semester 1</td>
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<tr>
<td>HDCA301 Circus and Arts Business Management Theory</td>
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<tr>
<td>HDCA302 Pre-production and Planning</td>
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<tr>
<td>Semester 2</td>
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<tr>
<td>HDCA303 The Production</td>
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</tbody>
</table>

Entry requirements
Entry is available to creative, talented and physical young people with experience in areas such as circus, gymnastics, sports acrobatics, trampolining, diving, performing arts, dance or extreme sport.

Application procedure
Entry to the course is by selection. 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: www.nica.com.au

Indigenous people are strongly encouraged to apply. For further information, contact Verity Higgins, Swinburne’s Indigenous recruitment and support officer on (03) 9214 6905.
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, Stage 4 and Stage 5

Textbooks and recommended readings

Textbooks are material essential to the subject. Due to the frequency with which individual publications become outdated, and are superseded, textbooks and recommended readings are not listed for all 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: Language of Delivery: English Lectures and Tutorials  • Assessment: Class assignment 25%  Final Exam 40%  Presentation 25%  Class participation 10%
A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

The Aim of the subject is to make students aware of some of the influences - internal, European and international - that have shaped Italy into a modern industrial nation. It develops an understanding of contemporary Italy by tracing its social, political and economic history from the defeat of fascism through to its entry in the European Union and Monetary System.

Content

The subject will explore the history as well as themes which delineate the turbulent political period following the defeat of fascism in 1943 through to the eve of the 21st century.

A brief historic background of the period includes:
- The founding of the new Italian Republic in 1948.
- Effects of the Cold War.
- The consolidation of the Christian Democracy in power.
- The ‘economic miracle’ of the 1950’s and 1960’s.
- The student protest and ‘Hot Autumn’ of the late 1960’s.
- The rise (and fall) of terrorism.
- The crisis of the 1970’s through to the stability of the late 1990’s.

The themes explored include:
- The role of the church.
- The social issues that divided Italy (divorce and abortion).
- The role of women in modern Italy.
- The Mafia.
- The South.
- Youth culture and education.
- The System of corruption.
- The role of immigration.
- The current state of the economy.
- The current state of the economy will be covered.

References

McCarthy, P.2000, Italy since 1945, Oxford.

HAA182 Italy and Its Language 2

12.5 Credit Points  • 1 Semester  • 5 Hours per Week  • Hawthorn  • Prerequisite: HAA119 or approved equivalent  • Teaching methods: Language of Delivery: Italian with English explanations as necessary Lecture and Tutorial  • Assessment: One class test 20%, Oral test 10%, Final language examination 45%, Language homework 10%, Civilisation examination 15%
A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

The program is based on the text In Giro per l’Italia, a language learning course which develops grammatical as well as oral and aural skills, and is structured to suit different learning needs. The aim of the subject is for students to acquire an understanding and appreciation of Italian culture.

Textbook


Hougaz, L, HAA181/HAA185 – Italy – A Cultural Experience (available from Swinburne Bookshop)

Reference


HAA181 Italy and Its Language 1

12.5 Credit Points  • 1 Semester  • 5 Hours per Week  • Hawthorn  • Prerequisite: Nil
• Teaching methods: Language of Delivery: Italian with English explanations as necessary Lecture and Tutorial  • Assessment: Two class tests 30%, Civilisation examination 15%, Attendance 10%, Language homework 10%, Final examination 35%
A 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 In Giro per l’Italia, a language learning course which develops grammatical as well as oral and aural skills. The culture component will familiarise students with a general knowledge of facts about Italy and provide them with an understanding and an appreciation of the Italian way of life.

Textbook


Hougaz, L, HAA181/HAA185 – Italy – A Cultural Experience (available from Swinburne Bookshop)

References


HAA184 Advanced Italian 1A

12.5 Credit Points  • 1 Semester  • 5 Hours per Week  • Hawthorn  • Prerequisite: VCE Italian or equivalent  • Teaching methods: Language of Delivery: Italian with English explanations as necessary Lecture and Tutorial  • Assessment: Two language class test 50%, Contemporary Italian presentation 5%, Contemporary Italian exam 20%, Civilisation examination 15%, Homework 10%
A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

This subject aims to build on the skills which students already possess to develop their proficiency from VCE studies in the speaking, understanding and writing of standard Italian. It also aims to introduce students to an appreciation of Italian society and culture by exposing them to the contemporary Italian language and a general contemporary culture component.

A study of short stories, selected by lecturer, aims to enable students to become familiar with the thoughts and styles of different authors through which one acquires a better understanding of modern Italy.

Content

The program is based on the text selected for the subject. The subject reinforces fundamental Italian grammar structures, provides review exercises that combine and reinforce structures and vocabulary and encourages students to interact with each other, sharing opinions about today's Italy. 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. The applied language program is on a selection of modern topics chosen by the lecturer.

Textbook

Hougaz, L, HAA182/HAA185 - Italy - A Cultural Experience (available from Swinburne Bookshop)

Reference


HAA185 Advanced Italian 1B

12.5 Credit Points  1 Semester  5 Hours per Week  Hawthorn  Prerequisite: HAA184  - Teaching methods: Language of Delivery: Italian with English explanations as necessary Lecture and Tutorial  - Assessment: Class test 15%, Oral test 10%, Culture test 15%, Contemporary Italian presentation 5%, Contemporary Italian test 20%, Final language examination 25%, Attendance and homework 10%.

A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

The subject aims to further the students' knowledge of Italian and develop linguistic competence in the areas of pronunciation, morphology and syntax, vocabulary and idiom. The understanding of long and complex verbal structures is particularly emphasised, together with the acquisition of a wider vocabulary range. The study of short stories aims to enable students to become familiar with the thoughts and styles of different authors through which one acquires a better understanding of modern Italy. The course also provides an historical perspective to the society and culture of modern Italy.

Content

The program is based on the text Crescendo. The applied language program is on a selection of modern topics selected by lecturer. The aim of the culture component is to familiarise students with a general knowledge of Italian history and provide them with an understanding and an appreciation of Italian culture.

Textbook

Hougaz, L, HAA182/HAA185 - Italy's History in Brief (available from Swinburne Bookshop)

Reference


HAA281 Italian 2X

12.5 Credit Points  1 Semester  4 Hours per Week  Hawthorn  Prerequisite: HAA182 - Teaching methods: Language of Delivery: Italian with English explanations as necessary Lecture and Tutorial  - Assessment: Grammar test 15%, Final grammar test 25%, Exercise/oral examination 10%, Language extension final assignment 40%, Presentation 10%

A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

This subject builds on the skills which students gained in first year to develop their proficiency in the speaking, understanding and writing of standard Italian.

Content

The first part of the program aims at consolidating and deepening students' proficiency in the Italian language. It relates to grammar and is based on the text In Giro per l'Italia. The course reinforces all fundamental Italian grammar structures, provides review exercises that combine structures and vocabulary. This section is flanked by a one-hour tutorial. The second part of the program focuses on a selection of applied language texts aimed at developing a high-level spoken and written style and encourages students to interact with each other, sharing opinions about today's Italy.

Textbook


A booklet will be made available for the Applied Language component.

References


HAA282 Introductory Business Italian 2Y

12.5 Credit Points  1 Semester  3 Hours per Week  Hawthorn  Prerequisite: HAA281 - Teaching methods: Language of Delivery: Italian with English explanations as necessary Lecture and Tutorial  - Assessment: Class assignment 30%, Oral Reports 30% Final Exam 40%

A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives

The subject aims to expose students to introductory aspects of the Italian economy, and to basic Italian business situations and language as used in contemporary Italy.

Content

The 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.

Textbook


References


HAA283 Italian 2Z

12.5 Credit Points  1 Semester  4 Hours per Week  Hawthorn  Prerequisite: HAA282 - Teaching methods: Language of Delivery: Italian with English explanations as necessary Lecture and Tutorial  - Assessment: Grammar test 15%, Final grammar examination 25%, Homework/oral examination 10%, Applied language final assignment 40%, Presentation 10%
A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
The subject is a sequence to HAA281 and aims to further the students’ linguistic competence in the areas of pronunciation, morphology and syntax, vocabulary and idiom. The understanding of long and complex verbal structures is emphasised, together with the acquisition of a wider vocabulary range. The study of short stories aims to enable students to become familiar with the thoughts and styles of different authors, through which one acquires a better understanding of modern Italy.

Content
The first part of the program aims at consolidating and deepening students’ proficiency in the Italian language. It relates to grammar and is based on the text In Giro per l’Italia. The course reinforces all fundamental Italian grammar structures, provides review exercises that combine structures and vocabulary. This section is flanked by a one-hour tutorial. The second part of the program focuses on a selection of applied language texts aimed at developing a high-level spoken and written style and encourages students to interact with each other, sharing opinions about today’s Italy.

Textbooks

A booklet will be made available for the Applied Language component.

References

HAA284 Advanced Italian 2A
12.5 Credit Points 1 Semester 4 Hours per Week Hawthorn Prerequisite: HAA283 Teaching methods: Language of Delivery: Italian with English explanations as necessary Lecture and Tutorial. Assessment: Language test 15%, Homework 10% 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 Business (International 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 and styles.

Content
Students’ proficiency is extended through advanced grammatical competence and regular grammatical exercises. The program also focuses on different language theories by exposing students to authentic materials from different periods, in different linguistic registers and in different styles and forms.

Textbook

References

HAA289 Comparative European Politics
12.5 Credit Points 1 Semester 2 Hours per Week Hawthorn Prerequisite: Nil Teaching methods: Language of Delivery: English Lectures and Tutorial Assessment: Essay 20% Presentation 20%. Class participation 10% Final exam 50%

A subject in the Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
This subject aims to provide a comparison between the four major European nations (Germany, France and Britain and Italy) in their march towards European Union. The subject aims to explore 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 have shaped four 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 ‘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 1990s.

Reference

HAA381 Individual Project
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: HAA283 or HAA286 • Teaching methods: Language of Delivery: Italian Regular report to subject convener. • Assessment: Individual presentation to the class on selected topic 15%, Individual Final presentation to the class on selected topic 25%, Final assignment on selected topic 60%
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 promote student research skills in the Italian cultural, social, political, historic and economic environments. Students are encouraged to research a topic in depth and present their findings in a written and oral form. Students will develop the skills and attitudes conducive to lifelong learning.

Content
Students will select and carry out a research project on a topic of Italian culture. The subject aims to promote student research skills in the Italian cultural, social, political, historic and economic environments. Students will be supported and supervised appropriately and they will be encouraged to research a topic in depth and present their findings in a written and oral form. Students may spend time in a selected organisation. Students will be required to report regularly to the subject convener and discuss their proposed topic with him/her.

References

HAA387 Advanced Business Italian
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAA282 or HAA285 • Teaching methods: Language of Instruction: Italian with English explanations as necessary Seminars/Tutorials • 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 Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
The subject aims to develop students’ proficiency in the use of Italian business language in contemporary Italy, increase students’ appreciation of the Italian business environment and raise their awareness of the Italian economic and business systems.

Content
The subject provides a wide range of authentic materials and business-related texts. Emphasis is placed on the development of speaking, reading and writing skills relevant in a business context. A wide range of authentic materials is used to expose students to different types of business language registers.

Textbook

Reference

HAA388 Contemporary Italy
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAA283 or HAA286 • Teaching methods: Language of Delivery: Italian Lecture and Tutorial • Assessment: Four fortnightly oral reports in Italian (5 minutes) (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 Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.

Aims & Objectives
The subject aims 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 the contemporary Italian society and they will be exposed to specific types of Italian sectorial language e.g. socio-economic, environmental phraseology, through work on texts taken from Italian newspapers, magazines, and journals.

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. Students may have the opportunity to hear guest speakers discuss their area of expertise and will be invited to contribute and participate to all classes.

Textbook

Reference
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
Fortnightly seminar conducted in Italian. These sessions will provide students with oral language maintenance opportunities and a forum in which to explore aspects within Italian culture, politics and society.

Students are to attend research methodology seminars in Social Science Seminar A, M edia and Cultural Studies Seminar A, HASP309 Social Research Design: Principles and Methods or HASP307 Qualitative Research Methods, according to research proposal.

Reading Materials
Texts will be selected from the following, according to student's research proposal:
Raffini, D., Carta Diario (Film), 1997.
Triposi, M., Il Postino (Film), 1994.

HAA441 Italian Seminar B
25 Credit Points • 1 Semester • 2 Hours per Fortnight (plus up to 3 hours 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
Fortnightly seminars conducted in Italian. The sessions will provide students with oral language maintenance opportunities and a forum in which to explore aspects within the Italian culture, politics and society.

Students are to attend research methodology seminars, either HAA441 Social Science Seminar B or HAC441 Media and Cultural Studies Seminar B.

Reading Materials
Texts will be selected from the following, according to student's research proposal:
Bellocchio, M., L'Ora di Religione, (Film), 2002.
Mazzamiti, M., Non t'Improvvisa, M ondadori, M ilano, 2002.
Mozzini, A., La Noia, Bompiani, M ilano, 1966.
Mortari, N., La Stanza del Figlio, (Film), 2002.
Santirossi, 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: Thesis 12,000 - 15,000 words if written in English or 10,000 to 12,000 words if written in Italian (continued from Thesis A).
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 conjunction with a supervisor. The objective is that through development of their own research project the student develops the capacity to evaluate existing research and ideas and to develop meaningful research questions. The research project can take a number of forms depending on the student's area of interest. Thus an additional objective is for the student to develop the capacity to plan their research.

Content
Students work with their thesis supervisors on their chosen research topics.

Reading Materials
Discipline specific reading as advised by thesis supervisor.

HAA443 Italian Thesis B
25 Credit Points • 1 Semester • 1 Hour per Week (consultation with supervisor) • Hawthorn • Prerequisite: HAA442 • Teaching methods: Consultation with supervisor • Assessment: Thesis 12,000 - 15,000 words if written in English or 10,000 to 12,000 words if 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.

Reading Materials
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 and to come to terms with and to respond to this breakdown.

Content
Theories of semiotics, language, narrative, texts, discourse and ideology will be examined, and structuralist, hermeneuticist, post-structuralist, Marxist and neo-Marxist theories of culture will be looked at. The dialectics of representation, of recognition and of labour will be examined from these different theoretical frameworks. The main theorists whose work will be considered are Jameson, Harvey, Barthes, Saussure, Peirce, Levi-Strauss, Ricoeur, Lacan, Althusser, Zizek, Bakhtin, Derrida, Bourdieu, Foucault, Gramsci, Lukacs, Adorno, Benjamin, and Habermas. In the final week, postmodern science will examined as a cultural phenomenon.

Reading Materials
Students work with their thesis supervisors on their chosen research topics.

Aims & Objectives
The aim of this subject is to show how the cultural and social theories examined in HAC440 can illuminate the processes of globalisation and its consequences. Students will be introduced to the whole range of recent developments in cultural and social theory deployed to make sense of globalisation, and in this way will be shown how to evaluate these theories as rival research programmes.

Content
The 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 Eurocentrism, 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.

Reading Materials

HAC442 Media and Cultural Studies Thesis A
25 Credit Points • 1 Semester • 1 Hour per Week (consultation with supervisor) • Hawthorn • Prerequisite: Nil • Teaching methods: Consultation with a supervisor • Assessment: Evaluation of thesis (work not assessed until the completion of Thesis B).

Aims & Objectives
The aim of Thesis A is to introduce students to research methods in their field of enquiry and to formulate a research project proposal for the final thesis. The proposal is developed in conjunction with a supervisor. The objective is that through development of their own research project the student develops the capacity to evaluate existing research and ideas and to develop meaningful research questions. The research project can take a number of forms depending on the student’s area of interest. Thus an additional objective is for the student to develop the capacity to plan their research.

Content
Students work with their thesis supervisors on their chosen research topics.

Reading Materials
Discipline specific reading as advised by thesis supervisor.

HAC443 Media and Cultural Studies Thesis B
25 Credit Points • 1 Semester • 1 Hour per Week • Hawthorn • Prerequisite: HAC442 • Teaching methods: Consultation with thesis supervisor • Assessment: 12 000 - 15 000 word thesis (continued from Thesis A).

Aims & Objectives
The aim of Thesis B is for the student to complete their research thesis. The main objective is to give the student practical training in research through execution of the project. The student carries out every phase of the project from initial planning and ethics approval to final analysis and interpretation of findings. An additional objective is for the student to develop skills in reporting their research in the form of a thesis. This deepens the student’s capacity for clear and concise communication in written form.

Content
Students work with their thesis supervisors on their chosen research topics.

Reading Materials
Discipline specific reading material as advised by thesis supervisor.

HAF440 Social Science Seminar A
25 Credit Points • 1 Semester • 2 Hours per Week (plus up to 3 hours in other subjects) • Hawthorn • Prerequisite: Nil • Teaching methods: Seminars, lectures. • Assessment: Research Proposals, Paper on epistemology, Draft literature review, Assessed work from other subject (or project)

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, methodological 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-struc

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.

Reading Materials
Neuman, W.L., Social Research Methods: Qualitative and Quantitative Approaches, 5th edn, Allen and Bacon, Boston, 2013.
HAF441 Social Science Seminar B
25 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Consultation with a supervisor • Assessment: Evidence that the student is working systematically on the 14 000 - 20 000 word thesis. Work is not graded until the completion of Thesis B.
A subject in the Bachelor of Arts (Honours) Social Science strand
Aims & Objectives
The aim of Thesis B is to introduce students to research methods in their field of enquiry and to help them formulate a research project proposal for the final thesis. The proposal is developed in conjunction with a supervisor. The objective is that, through development of their own research project, the student develops the capacity to evaluate existing research and ideas and to develop meaningful research questions. The research project can take a number of forms depending on the student's area of interest. Thus an additional objective is for the student to develop the capacity to plan their research.
Content
Students work with their thesis supervisors on their chosen research topics.
Reading Materials
Discipline-specific reading as advised by the thesis supervisor.

HAF442 Social Science Thesis A
25 Credit Points • 1 Semester • 1 Hour per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Consultation with a supervisor • Assessment: Evaluation that the student is working systematically on the 14 000 - 20 000 word thesis. Work is not graded until the completion of Thesis B.
A subject in the Bachelor of Arts (Honours) Social Science strand
Aims & Objectives
The aim of Thesis A is to introduce students to research methods in their field of enquiry and to help them formulate a research project proposal for the final thesis. The proposal is developed in conjunction with a supervisor. The objective is that, through development of their own research project, the student develops the capacity to evaluate existing research and ideas and to develop meaningful research questions. The research project can take a number of forms depending on the student's area of interest. Thus an additional objective is for the student to develop the capacity to plan their research.
Content
Students work with their thesis supervisors on their chosen research topics.
Reading Materials
Discipline-specific reading as advised by the thesis supervisor.

HAF443 Social Science Thesis B
25 Credit Points • 1 Semester • 1 Hour per Week • Hawthorn • Prerequisite: HAF442 • Teaching methods: Consultation with thesis supervisor • Assessment: 14 000 - 20 000 word thesis
A subject in the Bachelor of Arts (Honours) Social Science strand
Aims & Objectives
The aim of Thesis B is for the student to complete their research thesis. The main objective is to give the student practical training in research through execution of the project. The student carries out every phase of the project from initial planning and ethics approval to final analysis and interpretation of findings. An additional objective is for the student to develop skills in reporting their research in the form of a thesis. This deepens the student's capacity for clear and concise communication in written form.
Content
Students work with their thesis supervisors on their chosen research topics.
Reading Materials
Discipline-specific reading as advised by the thesis supervisor.

HAF100 Introduction to Philosophy
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 Social Science; Bachelor of Social Science (Psychology); Bachelor of Arts (Psychology/Psychophysiology) and Bachelor of Science (Psychology/Psychophysiology).
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.
Reading Materials
Please consult with lecturer before buying recommended readings.

HAF101 History of Ideas
12.5 Credit Points • 1 Semester • 2.5 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Assignments, Tutorial participation.
A subject in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Social Science (Psychology) and Bachelor of Social Science.
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.
Reading Materials

HAF103 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) and Bachelor of Social 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.

Such skills are central to the effective completion of academic assignments, as well as to good reasoning in everyday life.

Reading Materials
Please consult with lecturer before buying recommended readings.


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.

Reading Materials
Course Reader

HAH210/HAH310 Philosophy, Media, Culture
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
- Teaching methods: Seminars • Assessment: Attendance, participation in seminars, seminar presentation, 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
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.

Reading Materials

HAH219/HAH319 Philosophical Psychology
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 (Psychology); Bachelor of Social Science (Psychology); and Bachelor of Social Science. This subject can be taken at Stage 2 or Stage 3.

Aims & Objectives
This subject examines the interconnection between philosophy and psychology with a view to advancing our understanding of the psychology of the person. To this end, we focus on several key themes at the interface of the two disciplines.

Content
The issues considered include: the changing face of scientific psychology; the scientific status of qualitative research in psychology; the complementarity of the quantitative and the qualitative; the need for a pluralistic approach to theory and research in psychology; an introduction to the philosophical background to, and psychological applications of, several influential non-reductionist approaches to the psychological study of the person, such as the phenomenological, hermeneutic, postmodern and critical. Our examination of these positions includes critical reflection on the conception of personhood that they embody; a critical appraisal of the prospects for sustained and constructive dialogue between the several approaches in contemporary psychology. Overall, the subject seeks to counterbalance an emphasis on explanation, prediction and quantitative description in psychology with a concern for understanding persons on a more holistic, yet rigorously grounded, basis.

Reading Materials
Please consult with lecturer before buying recommended readings.


HAH222/HAH322 Practical Ethics
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
- Teaching methods: Lectures and Seminars • Assessment: Essays, Seminar presentation.
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
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.

Reading Materials
Gare, A., The Limits of Medicine, Eco-Logical Press, Sydney, 1996.
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 what action is open to us. While ethics and political philosophy are considered, the major focus of the course is on economic theory and policy formation. The assumptions of prevailing economic thought and policy analysis are critically examined, and new approaches to economics and policy formation, designed to take into account energetic and ecological processes and provide the basis for an environmentally sustainable society, are investigated.

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.

Reading Materials


HAH224/HAH324 Natural Philosophy and the Sciences

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 has 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.

Reading Materials


HAH225/HAH325 Philosophy, Politics, and Society

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.

Reading Materials

Please consult with lecturer before buying recommended readings.

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 grappling with such questions, this subject aims to develop an approach to epistemological and ethical issues commensurate with recent advances in our self-understanding, thereby enabling us to respond more effectively to contemporary challenges.

Reading Materials

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 that is relevant to the needs of an outside organisation and cope with the practical problems of carrying out this design; understand what it means to develop an argument in a research project; learn more about how practical problems of research methods and the research design itself relate to theoretical, metatheoretical and empirical debates in social research (for example, debates on epistemological questions and on ontological problems, such as: the identification of basic concepts; assumptions about human nature; the agency/non-agency and structure/non-structure debates; and the problem of is and ought).

Content

There are two components to Industry and Community Studies Seminar A:

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.

Reading Materials

HA1443  Industry and Community Studies  
**Thesis B**

25 Credit Points  • 1 Semester  •  1 Hour per Week  • Hawthorn  • Prerequisite: HA1442  • 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.

**Reading Materials**

Discipline-specific reading as advised by thesis supervisor.

**HAJ 102  Introduction to Japan: A Cultural Overview**

12.5 Credit Points  • 1 Semester  •  3 Hours per Week  • Hawthorn  • Prerequisite: Nil  • Teaching methods: Language of Instruction: English. 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**


**HAJ 107  Introductory Japanese 1A**

12.5 Credit Points  • 1 Semester  •  6 Hours per Week  • Hawthorn  • Prerequisite: Nil  • Teaching methods: Language of Instruction: Japanese with English explanations as necessary. Classwork and Computer Laboratory  • Assessment: Mid-semester test 40%  • Final examination 50%  • Class performance 10%

A 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**


**HAJ 108  Written Japanese 1B**

12.5 Credit Points  • 1 Semester  •  3 Hours per Week  • Hawthorn  • Prerequisite: HAJ 107 or equivalent competence in spoken language.  • Corequisites: HAJ 108  • Teaching methods: Language of Instruction: Japanese with English explanations as necessary. Grammar and reading and writing. Classwork and Computer Laboratory.  • Assessment: Mid-semester test 40%  • Final examination 50%  • Class performance 10%

A 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 HAJ 107 Japanese language program. It extends the range of grammar patterns, kanji and reading texts. Study of these components is reinforced by computer-based exercises.

**Textbook/Reference**


**HAJ 109  Spoken Japanese 1B**

12.5 Credit Points  • 1 Semester  •  3 Hours per Week  • Hawthorn  • Prerequisite: HAJ 107 or equivalent competence in spoken language.  • Corequisites: HAJ 108  • Teaching methods: Language of Instruction: Japanese with English explanations as necessary. A combination of audiovisual work and Conversation classes.  • Assessment: 2 Class Presentations 30%  • Weekly Diction 10%, Final Examination 50%.

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 grammar patterns 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.

**Textbook/Reference**


**HAJ 131  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: Language of Instruction: Japanese with English explanations
as necessary. Classwork and Computer laboratory work. • Assessment: Mid-semester test 30%, Final examination 40%, Class performance 10%. Weekly Class Tests 10%, Oral Presentation 10%.

A 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 HAJ 131 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.

Textbook/Reference

HAJ 202 Communication in Japanese
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAJ102 or HAH107 or HAJ 131 • Teaching methods: Language of Instruction: English. A weekly 2 hour seminar. • Assessment: Seminar presentation 25% Essay 35% Short Tests 30% Attendance/Participation 10%; Participation A subject in the Bachelor of Japanese, 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 a Japanese-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 Japanese norms of interpersonal interaction in social and business situations.

Textbook

HAJ 215 Intermediate Japanese 2A
12.5 Credit Points • 1 Semester • 6 Hours per Week • Hawthorn • Prerequisite: HAJ 108 and HAJ 109 or equivalent competence in written and spoken Japanese. • Teaching methods: Language of Instruction: Japanese with English explanations as necessary. Classwork and Computer laboratory work. • Assessment: Mid-semester test 30%, Final examination 40%, Class performance 10%. Weekly Class Tests 10%, Oral Presentation 20%. 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 the 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.

Reference

Textbooks are subject to revision each year. Please refer to the subject outline provided by your lecturer in class.
HAJ 217  Written Japanese 2B
12.5 Credit Points  • 1 Semester  • 3 Hours Per Week  • Hawthorn  • Prerequisite: HAJ 215 or equivalent competence in written Japanese.  • Corequisites: HAJ 217  • Teaching methods: Language of Instruction: Japanese with English explanations as necessary.  • Classwork and Computer laboratory work  • Assessment: Mid-semester test 40%, Final examination 40%, Weekly class tests and performance 20%.

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 350 kanji (Chinese characters). Study of grammar and reading texts is reinforced by computer-based exercises.

Textbook/Reference

Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

HAJ 218  Spoken Japanese 2B
12.5 Credit Points  • 1 Semester  • 3 Hours Per Week  • Hawthorn  • Prerequisite: HAJ 215 or equivalent competence in spoken Japanese.  • Corequisites: HAJ 217  • Teaching methods: Language of Instruction: Japanese and Computer laboratory work  • Assessment: Mid-semester test 40%, Final examination 40%, Class performance 20%.

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.

HAJ 231  Advanced Written Japanese 2A
12.5 Credit Points  • 1 Semester  • 3 Hours Per Week  • Hawthorn  • Prerequisite: HAJ 131, HAJ 132 and HAJ 133 or equivalent competence in Japanese.  • Corequisites: HAJ 232  • Teaching methods: Language of Instruction: Japanese with English explanations as necessary.  • Classwork and Computer laboratory work  • Assessment: Mid-semester test 40%, Final test 40%, Minor Test 10%  • Class performance and attendance 10%.

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.

References

Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

HAJ 232  Advanced Spoken Japanese 2A
12.5 Credit Points  • 1 Semester  • 3 Hours Per Week  • Hawthorn  • Prerequisite: HAJ 131, HAJ 132 and HAJ 133 or equivalent competence in Japanese.  • Corequisites: HAJ 231  • Teaching methods: Language of Instruction: Japanese with English explanations as necessary.  • Classwork and Computer laboratory work  • Assessment: Mid-semester test 40%, Final test 40%, Minor Test 10% and Class performance, Attendance 10%.

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/Reference

Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

HAJ 233  Advanced Written Japanese 2B
12.5 Credit Points  • 1 Semester  • 3 Hours Per Week  • Hawthorn  • Prerequisite: HAJ 231 & HAJ 232 or equivalent competence in written Japanese.  • Corequisites: HAJ 234  • Teaching methods: Language of Instruction: Japanese with English explanations as necessary.  • Classwork and Computer laboratory work  • Assessment: Mid-semester test 40%, Final test 40%, Minor Test 10% and Class performance, Attendance 10%.

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 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) focused on different writing styles.

References

Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

HAJ 234  Advanced Spoken Japanese 2B
12.5 Credit Points  • 1 Semester  • 3 Hours Per Week  • Hawthorn  • Prerequisite: HAJ 231 & HAJ 232 or equivalent competence in spoken Japanese.  • Corequisites: HAJ 233  • Teaching methods: Language of Instruction: Japanese with English explanations as necessary.  • Classwork and Computer laboratory work  • Assessment: Mid-semester test 40%, Final test 40%, Minor Test 10% and Class performance, Attendance 10%.

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 exposure to unabridged aural comprehension texts. Emphasis is placed on further development of oral skills for an extended range of communicative situations and on correct usage of different speech registers, including business situations.

Content
This subject is designed to build Japanese communication skills. The course is comprised of the components of slides, conversation and listening comprehension.
Conversation classes are based on situational dialogues. The dialogues are supplemented with slides to allow more practice of new vocabulary and expressions. Listening is based on current video materials.

**Textbook/Reference**


Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

**HAJ 318 Written Japanese 3A**

12.5 Credit Points • 1 Semester • 3 Hours Per Week • Hawthorn  • Prerequisite: HAJ 217 or equivalent competence in written Japanese. Corequisites: HAJ 319 • Teaching methods: Language of Instruction: Japanese Classwork • Assessment: Mid-semester Test 40%, Final Test 40%, Minor Test 10% and Class performance, Attendance 10%.

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 language through reading of unabridged texts. The writing component provides training in different writing styles and includes formal introduction of a further 200 kanji (Chinese characters), as well as exposure to an extensive range of kanji compounds.

**Content**

This subject is designed to build skills in written Japanese. The course is comprised of the components of reading, writing and grammar.

**Reference**


Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

**HAJ 319 Spoken Japanese 3A**

12.5 Credit Points • 1 Semester • 3 Hours Per Week • Hawthorn  • Prerequisite: HAJ 218 or equivalent competence in spoken Japanese. Corequisites: HAJ 318 • Teaching methods: Language of Instruction: Japanese Conversation, Slide and video classes. Assessment: Mid-semester Test 40%, Final Test 40%, Minor Test 10% and Class performance, Attendance 10%.

Bachelor of Business/Bachelor of Arts (Japanese), Bachelor of Arts, and Bachelor of Social Science.

**Aims & Objectives**

To continue extending students’ competence in the spoken language through exposure to unabridged aural comprehension texts. Emphasis is placed on further development of oral skills for an extended range of communicative and business situations.

**Content**

This 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.

**References**


Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

**HAJ 323 Written Japanese 3B**

12.5 Credit Points • 1 Semester • 3 Hours Per Week • Hawthorn  • Prerequisite: HAJ 319 or HAJ 318 or equivalent competence in written Japanese. Corequisites: HAJ 324 • Teaching methods: Language of Instruction: Japanese Classwork • Assessment: Mid-semester Test 40%, Final Test 40%, Minor Test 10% and Class performance, Attendance 10%.

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 introduction of unabridged reading texts and extension of literacy skills through introduction of a further 250 kanji (Chinese characters). The writing component focuses on different writing styles, note-taking and summarising.

**Content**

This subject is designed to build skills in written Japanese and exposure to vocabulary on contemporary topics. The course is comprised of the components of reading, writing and grammar.

**Textbook/Reference**


Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

**HAJ 324 Spoken Japanese 3B**

12.5 Credit Points • 1 Semester • 3 Hours Per Week • Hawthorn  • Prerequisite: HAJ 318 or HAJ 319 or equivalent competence in spoken Japanese. Corequisites: HAJ 323 • Teaching methods: Language of Instruction: Japanese Classwork  • Assessment: Mid-semester Test 40%, Final Test 40%, Minor Test 10%, Class performance and Attendance 10%.

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 spoken language through introduction of a variety of unabridged aural comprehension text (video programs) 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**


Textbooks are subject to revision each year. Please refer to subject outline provided by your lecturer in class.

**HAJ 331 Advanced Written Business Japanese**

12.5 Credit Points • 1 Semester • 3 Hours Per Week • Hawthorn  • Prerequisite: HAJ 233 or HAJ 323 • Corequisites: HAJ 332 • Teaching methods: Language of Instruction: Japanese Classwork • Assessment: Mid-semester test 30%, Final test 30%, Weekly tests 10%, Projects 20%, Class performance 10%

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 writing business letters, faxes and similar. Approximately 200 Kanji (Chinese characters) are also studied.

**Textbooks / References**


**Textbooks / References**


**HAJ 332 Advanced Spoken Business Japanese**

12.5 Credit Points • 1 Semester • 4 Hours Per Week • Hawthorn  • Prerequisite: HAJ 234 or HAJ 324 • Corequisites: HAJ 331 • Teaching methods: Language of Instruction: Japanese Classwork  • Assessment: Interview 20%, Debate 30%, Presentation 20%, Visiter session, Class Performance and Report 10%, Weekly tests 10%, Final test (Listening) 10%.

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.

Textbook / Reference

Textbooks are subject to revision each year. Please refer to your lecturer in class.

HAJ 333 Advanced Business Readings and Communication
12.5 Credit Points  1 Semester  4 Hours per Week  Hawthorn  Prerequisite: HAJ 331 or HAJ 330  Teaching methods: Language of instruction: J?apanese Classwork; Assessment: Mid Aural Test 15%, Mid Written Test 15%, Final Aural Test 15%, Final Written Test 15%, Oral Test 10%, Written Assignments 10%  Weekly Vocabulary Tests 10%, Class performance 10%  A subject in the Bachelor of Business/Bachelor of Arts (J?apanese).

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 J?apanese language and culture for business situations. The subject focuses on skills used in daily situations within a J?apanese 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 J?apanese, especially focusing on the J?ETO Business J?apanese Proficiency Test. The J?ETO Test is a practical measure of a non-native J?apanese speaker's proficiency in business J?apanese. The test will not be used simply as a measure of skill, but will be used to encourage non-native J?apanese 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 J?apanese but also understand the associated business values and culture.

Content
The course includes four components:

- Grammar
- Reading
- Aural comprehension
- Oral work

Reading Materials

Textbooks are subject to revision each year. Please refer to the subject outline provided by your lecturer in class.

HAJ 440 J?apanese Seminar A
25 Credit Points  1 Semester  3 Hours per Fortnight (plus up to 3 hours per week in supplementary classes)  Hawthorn  Prerequisite: (HAJ 323 and HAJ 324) or HAJ 333  Corequisites: HAJ 442 J?apanese Thesis A  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 J?apanese language, to equip students to undertake research for their thesis, to give students a greater understanding of the cultural, political and social aspects of J?apan.

Content
Fortnightly seminar conducted in J?apanese. These sessions will provide students with oral language maintenance opportunities and a forum in which to explore aspects within J?apanese culture, politics and society.

Students are to attend research methodology seminars: Social Science Seminar A or Media and Cultural Studies Seminar A, or HAP309 Social Research Design: Principles and Methods or HAP307 Qualitative Research Methods.

Reading Materials


HAJ 441 J?apanese 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: HAJ 440  Corequisites: HAJ 443 J?apanese Thesis B  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 J?apan.

Content
Fortnightly seminars conducted in J?apanese. The sessions will provide students with oral language maintenance opportunities and a forum in which to explore aspects within J?apanese culture, politics and society.

Students are to attend research methodology seminars; either HAF441 Social Science Seminar B or HAC441 Media and Cultural Studies Seminar B.

Reading Materials


HAJ 442 J?apanese Thesis A
25 Credit Points  1 Semester  1 Hour per Week  Hawthorn  Prerequisite: (HAJ 323 and HAJ 324) or (HAJ 325 and HAJ 326) or HAJ 333  Corequisites: HAJ 440 J?apanese Seminar A  Teaching methods: Consultation with thesis supervisor.  Assessment: Evidence that the student is working systematically on 12 000 - 15 000 word thesis, work is not assessed until completion of Thesis B.  A 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 conjunction with a supervisor. The objective is that through development of their own research project the student develops the capacity to evaluate existing research and ideas and to develop meaningful research questions. The research project can take a number of forms depending on the student's area of interest. Thus an additional objective is for the student to develop the capacity to plan their research.

Content
Students work with their thesis supervisors on their chosen research topics.

Reading Materials
Discipline specific reading as advised by thesis supervisor.

HAJ 443 J?apanese Thesis B
25 Credit Points  1 Semester  1 Hour per Week  Hawthorn  Prerequisite: (HAJ 440 and HAJ 441) J?apanese Seminar B  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.

Content
Students work with their thesis supervisors on their chosen research topics.

HAL039 Renaissance Literary Culture
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Participation, essay, research 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 aim of this subject 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

HAL104 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, participation.
A subject in the Bachelor of Arts (Media and Communications), Bachelor of Film and Television, Bachelor of Multimedia (Media Studies), Bachelor of Science (Biotechnology/Biochemistry) and Bachelor of Arts (Media & Communications) and

HAL309 Cultural Convergence
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Seminar presentation (10 minutes) 20%, Short Essay (1000 words) 30%, Major Essay (2000 words) 50%
An elective subject in the Graduate Certificate of Arts (Applied Media), Graduate Diploma of Arts (Applied Media) and Master of Arts (Applied Media).

Aims & Objectives
The subject is designed to achieve the following objectives:
- Assess the historical significance of cultural technologies of mediation (such as speech and writing).
- Evaluate the impact of new cultural formations such as cyberspace on traditional notions of community, presence, writing and speech.
- Critically review the development of electronic media founded on principles of interactivity and remote sensing.
- Develop an understanding of key terms and concepts in electronic communications, such as multi-media, telepresence, cyberspace, virtuality, and hypertext.

Content
This subject is a critical exploration of communications in the transition from print to electronic culture. Focusing on the word as the basic unit of communication, it traces the gradual technologising of the word as it moved beyond the immediacy of speech and social community, to the mediation of writing and its initiation of remote telecommunications.

Central to the formation of an electronic culture is the issue of convergence, in which new modes of communication, such as hypermedia, combine formerly discrete forms to create powerful communications environments. Such environments require new literacies, which in turn transform the way in which we construct the world into meaning. Cultural Convergence also seeks to evaluate the impact of new social formations (such as cyberspace) that are being constructed on the basis of these literacies, assessing the degree to which virtual communities are changing the nature of social interaction, and modifying traditional notions of identity, space, location and meaning.

Reading Materials

HAL209 Australian Writing and Cultural Change
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HLM 104 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 concerned with the ‘theory wars’ of the 1980s, multiculturalism and indigenous politics, feminism and queer theory will be explored. The impact of information technology on the formation of new social spaces (such as the virtual community), as well as changing notions of identity and cultural politics will also be addressed.

Recommended Reading

HAL309 Renaissance Literary Culture
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Two Stage 2 Literature 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 aim of this subject is to critically investigate the ways in which we read and interpret the literature of the renaissance.
an elective subject in the Bachelor of Design (Multimedia Design) and Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Computer Science and Software Engineering).

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 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: HALM 104 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

12.5 Credit Points  ・ 1 Semester  ・ 3 Hours per Week  ・ Hawthorn  ・ Prerequisite: HALM 104 or HAM 105 and any Stage 2 Media Studies subject or equivalent.

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

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.

Content

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, MacLLian, South Melbourne, 1996.

HALM206 Issues in Electronic Media

12.5 Credit Points  ・ 1 Semester  ・ 3 Hours per Week  ・ Hawthorn  ・ Prerequisite: HALM 104 or HAM 105  ・ Teaching methods: Lectures and Tutorials  ・ Assessment: Participation/reading journal/discussion list, review of an electronic media event, major essay/project.

A subject in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Film and Television; and Bachelor of Multimedia (Media Studies).

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?

Drawing on 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.

Content

As well as encouraging students to think through issues relating to new media, the subject aims to provide students with both the experience of using and the skills to use new technologies effectively. The subject will be delivered using a combination of face to face teaching and all of the above technologies (hypertext, email, Internet Relay Chat, MUDs (multi-user domains), CD-ROM and VRML). Students will be required to submit work for assessment in a similar array of formats.

Reading Materials


HALM312 Cinema Studies

12.5 Credit Points  ・ 1 Semester  ・ 4 Hours per Week  ・ Hawthorn  ・ Prerequisite: HALM 104 and any two Stage 2 Media studies subjects, or equivalent.  ・ Teaching methods: Screenings, Lectures and Seminars.  ・ Assessment: Class work, essay.

A subject in the Bachelor of Arts; Bachelor of Arts (Media and Communications), Bachelor of Film and Television, Bachelor of Multimedia (Media Studies), Bachelor of Social Science, and Bachelor of Social Science (Psychology).

Aims & Objectives

This subject is designed to develop skills which are applicable to a wide range of disciplines and highly valued by most prospective employers. By the end of the
semester, if students have applied themselves to the assigned tasks and engaged with the learning methods implicit in the teaching of the course, they will have:

- Developed independent research skills.
- Enhanced an ability to develop and formulate a coherent argument.
- Developed analytical and conceptual skills.
- Increased problem-solving abilities.
- Extended their capacity to communicate both verbally and in writing.
- Acquired an awareness of form and of the conditions that make texts intelligible or otherwise.

Content
The viewing material for this 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.

The emphasis is on the practice of film criticism: attention is focused upon the usefulness of structuralist and semiological studies and their function in relation to the humanist discourse which dominates more traditional critical work. In this context, particular questions to do with the developing study of film will be considered throughout the course; for example, the ways in which ideology is inscribed into the works examined (as well as into the methods of examination), the usefulness of the work of the 'frame-by-frame heretics', the kinds of relationships constructed between a film and its viewer, the place of 'the author' in relation to the formal and thematic organisation of the works which bear his/her name, the usefulness of 'genre' studies, the function of the 'star system', and the relationship between the film, the industry and the cultures in which they exist.

Recommended Reading
Grant, 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: Nil

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

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

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
- Spin Doctoring

Reading Materials

HAM210 Popular Culture
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAM104 or HAM105 • Teaching methods: Lectures and Tutorials. • Assesement: 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: HAM104 and HAM105 • 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 Film and Television, Bachelor of Multimedia (Media Studies) Bachelor of Social Science; and Bachelor of Social Science (Psychology).

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: HAM105 or HAM104 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
Hicks, M., Radio on Radio, (audio tapes), Swinhurst, 1985.
Ong, W., Orality and Literacy, Methuen, London, 1982.
Strauss, N., Radio text(e), Semiotext(e), Columbia University, New York, 1993.

HAM314 Professional Attachment Program A
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.

HAM315 Information Society: A Global Perspective
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HAM104 or HAM105 and two Stage II Media Studies subjects or equivalent. Note: 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. A subject in the Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Social Science; Bachelor of Social Science (Psychology); Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering); Bachelor of Multimedia (Media Studies); Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies).

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 formulated, 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
Ong, W., Orality and Literacy, Methuen, London, 1982.

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 HAM 313 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 other’s work with reference to the constructs examined in HAM 313. They are also expected to keep abreast of changes and developments in the radio industry.

Recommended Reading
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 organisational principles of the system, the institutions that express these 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, Attendance. 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 diplomacy 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 Arts; Bachelor of Arts (Media and Communications); Bachelor of Arts (Psychology/Psychophysiology); Bachelor of Social Science; and Bachelor of Social Science (Psychology). 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: Lectures, Tutorials • Assessment: Stage 2 - tests, Class presentation, 2500 word essay. Stage 3 - Tests, Class presentation, 3000 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. This subject is not offered in 2005 but may be offered in subsequent years.

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
Subject Details

The Media and Politics

Content
The subject provides an introduction to the comparative approach to the study of politics and the analytical methods of political science, with emphasis on the logic of hypothesis testing. The concepts of power, the state, processes of democratisation, political culture, ideology, and the policy process are used to compare different political systems around the world.

Reading Materials


HAPM226/HAPM326 Making News and Making Policy: The Media and Politics

Content
This subject explores the political influence of the media and political and economic elites through a critical examination of the "Propaganda Model" developed by Chomsky and Herman. This involves examining how news is produced, arguments about bias, and about the extent to which the media shape political attitudes. It includes case-studies of coverage of national Australian and international political events.

Reading Materials

HAS100 Sociology 1A (Introductory Sociology)

Content
This subject aims 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 working 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 organisation in preparing a 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
To develop an understanding of principles of social policy.
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 subject explores the political influence of the media and political and economic elites through a critical examination of the "Propaganda Model" developed by Chomsky and Herman. This involves examining how news is produced, arguments about bias, and about the extent to which the media shape political attitudes. It includes case-studies of coverage of national Australian and international political events.

Reading Materials

HAS101 Sociology 1B (Social Institutions and Social Change)

Content
This subject explores the political influence of the media and political and economic elites through a critical examination of the "Propaganda Model" developed by Chomsky and Herman. This involves examining how news is produced, arguments about bias, and about the extent to which the media shape political attitudes. It includes case-studies of coverage of national Australian and international political events.

Reading Materials

HAS296 The Family, Sex and Society

Content
This subject explores the political influence of the media and political and economic elites through a critical examination of the "Propaganda Model" developed by Chomsky and Herman. This involves examining how news is produced, arguments about bias, and about the extent to which the media shape political attitudes. It includes case-studies of coverage of national Australian and international political events.

Reading Materials
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

Reading Materials


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: 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 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

Reading Materials


HAS308 Internship in Social Research

25 Credit Points • 1 Semester • 3 Hours per Week plus two days per week with employer • Hawthorn • Prerequisite: HASP308 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 (5000 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.

Reading Materials


HAS316 Migration and Ethnicity

12.5 Credit points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Students majoring in sociology, HAS100 and HAS101, students taking a minor in Sociology should have either HAS100 or 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

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A subject in the Bachelor of Social Science, Bachelor of Social Science (Psychology), the Bachelor of Arts and the Bachelor of Arts (Media and Communications).

**Aims & Objectives**
- To expand students' knowledge of international migration
- To develop students' understanding of the role of immigration in shaping national societies and international relations
- To help students analyse the effects of immigration on ethnicity, culture and personal identity

**Content**
- Ethnicity, racism 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

**Reading Materials**

**HASP201 eSociety (Sociology of the Electronic Age)**
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
- Teaching methods: Lectures and Tutorials

A subject in the Bachelor of Social Science, Bachelor of Sociology (Psychology), Bachelor of Arts, Bachelor of Arts (Media and Communications) and Bachelor of Multimedia (Media Studies).

**Aims & Objectives**
- To develop understanding of the major effects of electronic technologies on social institutions from an international perspective
- To develop understanding of the main sociological theories used to explain the development of electronic technologies and their social implications

**Content**
Major topics covered include:
- Technology and Society
- Identity
- Family and Sexuality
- Community
- Organisations
- Democracy
- Surveillance
- Social Theory

**Reading Materials**

**HASP200/HASP300 Public Policy in Australia**
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
- Teaching methods: Lectures and 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). 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

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 reforms.

**Recommended Reading**
**HASP303 Research Project**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HASP309 or HASP307 • Teaching methods: Lectures, workshops, research practice and seminars • Assessment: Oral presentations, seminar participation and research report (3000 words)

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**

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**

Students will carry out the research project which they planned in either HASP309 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**


**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
- The role of the State
- The politics of Social Policy
- The Policy Process
- Education Policy
- Family Policy
- Income Security
- Employment Policy
- Health Policy
- Social Entrepreneurship

**Recommended Reading**


**HASP307 Qualitative Research Methods**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: For students majoring in Sociology or Politics: two Stage 2 and two Stage 2 subjects, or with permission from the subject convenor • Teaching methods: Lectures and Tutorials • Assessment: Practical exercises and research proposal

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 Health Science (Honours).

**Aims & Objectives**

- To develop an appreciation of qualitative research.
- To gain a working familiarity with a range of qualitative research methods used in social research.
- To design a qualitative research project.

**Content**

- The foundation of qualitative research.
- The ethics, politics and design of qualitative research.
- The in-depth interview.
- Focus Groups.
- Unobtrusive methods.
- Ethographic fieldwork.
- Writing a research proposal.
- Analysing qualitative data.
- Action research.

**Recommended Reading**


**HASP309 Social Research Design: Principles and Methods**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: For students majoring in Sociology HAS100 and HAS101, and two Stage 2 Sociology subjects. Students taking a minor in Sociology should have either HAS100 or HAS101 and two Stage 2 Sociology subjects. Students taking this subject as part of a Politics major should have one Stage 1 Politics subjects and two Stage 2 Politics subjects. Students may take this subject as an elective with the approval of the 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.
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

• Australian History: the first block provides students with a basic overview of Australian history, covering topics such as the geography and climate of Australia, Aboriginal society and its fate, the Colonial period, Federation and developments in the 20th Century. The block concludes with an overview of Australia today, focusing on population, economy and society.
• Australian Culture: using historical and contemporary media representations as case studies, the second block of the subject attempts to identify some of the key icons of Australian identity.
• Australian Politics: The last block explores the issues, parties and personalities that combine to shape the contemporary Australian political scene. The block concludes with an overview of Australia’s foreign relations today, including patterns of trade and investment, security relations and diplomacy.

Reading Materials


HAT116 Linguistics

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: Lecture and Tutorial (Attendance at lectures is mandatory). • Assessment: 3 Assignment 80% Topics Report 15% Participation 5%

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
The aim is to provide up-to-date coverage of recent theoretical and methodological advancements in cognitive psychology.

Content
This subject examines theories of cognitive functioning and processes, including perception, attention, memory, problem-solving, decision-making, language, and aspects of learning. Some contemporary issues and theoretical applications will also be considered.

Reading Materials
Matlin, M., Cognition, 5th edn, Harcourt Brace, New York, 2002

HAY206 Developmental Psychology
12.5 Credit Points  |  1 Semester  |  3 Hours per Week  |  Hawthorn  |  Prerequisite: HAY100 and HAY101  |  Corequisites: HM A278  |  Teaching methods: 2-hour Lecture, 1-hour Laboratory Session  |  Assessment: Examinations, 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 Applied Science (Psychology/Biochemistry).

Aims & Objectives
Developmental Psychology aims to understand the processes involved in psychological growth and change with age. The focus is on social, emotional, cognitive and language development during the early periods of life from infancy and childhood through to adolescence.

Content
Topics include: biological foundations of the person, prenatal influences on development, the birth process, and children’s earliest behaviour; examination of interactions between children and their caregivers and the development of their perceptual, social and emotional abilities, development of cognitive and language skills, and their powerful influence on all aspects of children’s behaviour, development of personality and gender identity and the role played by the family, school, the media and peers in the socialisation of children. Throughout the course, the focus is on theoretical approaches to child development, with a thematic approach as opposed to a chronological approach.

Recommended Reading
Berk, L., Child Development, 6th edn, Allyn Bacon, Boston, 2003

HAY208 Human Information Processing
12.5 Credit Points  |  1 Semester  |  3 Hours per Week  |  Hawthorn  |  Prerequisite: Nil  |  Teaching methods: Lectures, Tutorial/Practical Sessions and Project Work  |  Assessment: Practical examination
A subject in the Bachelor of Social Science; Bachelor of Arts; Bachelor of Arts (Media and Communications); Bachelor of Science (Psychology/Psychophysiology).
Note: This subject is only available to students completing the Electronic Society major.

Aims & Objectives
This subject examines theories of cognitive functioning and processes, including perception, attention, memory, problem-solving, decision-making, language and aspects of learning. The aim is to provide up-to-date coverage of recent theoretical and methodological advancements in cognitive psychology.

Content
Students will be introduced to the major perspectives that define current cognitive psychology: experimental cognitive psychology, cognitive science and cognitive neuropsychology. In addition, some contemporary issues and applications of the theories will be considered.

Reading Materials
Matlin, M., Cognition, 3rd edn, Harcourt Brace, New York, 2002

HAY307 Social Psychology
12.5 Credit Points  |  1 Semester  |  3 Hours per Week  |  Hawthorn  |  Prerequisite: HAY100, HAY101, HM A103, HM A278, HM A279, and one of HAY203 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/Psychophysiology); Bachelor of Arts; Bachelor of Arts (Media and Communications); and Bachelor of Applied 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 people's thoughts, feelings and actions in social situations.

Content

This 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, HM1A03, HM1A278, HAY205 or HAY206  • Teaching methods: Lectures and Tutorials  • Assessment: Essays, 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 Applied Science (Psychology/Psychophysiology).

Aims & Objectives

This subject is designed to introduce students to the ways in which human psychological patterns have been conceptualised as 'abnormal' or dysfunctional. In examining such abnormal behaviours, students are introduced to major systems of classifying mental disorders, in particular the multiaxial system adopted in DSM-IV-TR. The 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.

Reading Materials


HAY452/HAY459 Thesis A

25 Credit Points  • 1 Semester  • 15 Hours of Workshops plus regular consultation with a thesis supervisor  • Hawthorn  • Prerequisite: Nil  • Teaching methods: M in-conference participation, regular meetings with thesis supervisor  • Assessment: 2000-word annotated bibliography, presentation of research proposal at miniconference

A subject in the Bachelor of Arts (Honours) - Psychology stream and the Postgraduate Diploma in 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 to present their project at the Psychology mini-conference.

Recommended Reading

Camic, M., Rhodes, J.E & Yardley, L (Eds), Qualitative Research in Psychology: Expanding Perspectives in Methodology and Design; American Psychological Association, Washington, DC, 2003.


HAY456/HAY460 Ethics B

25 Credit Points • 1 Semester • 1 Hour per Week (consultation with supervisor) • Hawthorn • Prerequisite: HAY452/HAY459 • Teaching methods: Individual consultation with supervisor • Assessment: 10 000–12 000 word thesis

A subject in the Bachelor of Arts (Honours) - Psychology stream and the Postgraduate Diploma of Psychology.

Aims & Objectives
Completion of an individual research project.

Content
Each student is required to formulate individually an empirical research question, design an appropriate study, collect and analyse data, interpret these data in relation to the original research question, and submit a report on the investigation in the form of a thesis.

The research project may take any one of a number of forms: controlled observations, case studies, field surveys, laboratory experiments, field experiments, secondary analysis of data sets, archival research. The individual student must plan and carry out every phase of the project from initial planning to final analysis, interpretation and reporting of the data. While flexibility in methodology is clearly required, given the diversity of potential topics for investigation, the methodology and data analysis procedures used must be:

- Generally recognised within the field of psychological research as sound and appropriate for the particular question.
- Correctly implemented in a systematic manner.

A member of the Psychology Discipline, or an affiliate of the Psychology Discipline will be assigned to supervise the research. Supervisor and student will be expected to meet regularly for consultation according to a mutually agreed timetable.

The conduct of the research overall must conform in all respects to the principles of research ethics stated in the School of Life and Social Sciences’ Statement of Research Ethics.

Reading Materials
Code of ethics, Australian Psychological Society, Melbourne, 2002

HAY457 Ethical and Professional Issues

12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Take-home and class test 100%.

A subject in the Bachelor of Arts (Honours) - Psychology stream and the Postgraduate Diploma of Psychology.

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.
- Acquaintance with the steps involved in ethical decision-making.
- Provide details regarding the practical skills involved in report writing, record-keeping and testing.
- 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

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Assignments, Examinations

A subject in the Bachelor of Arts (Honours) - Psychology stream and the Postgraduate Diploma of 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

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Class participation 5%, Tests 30%, Examination 65%

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
A basic introduction to accounting concepts, financial accounting, management accounting and finance.

Content
Accounting theory and practice are examined in an historical cost accounting system. This 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.
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 Quickbooks Pro 2002 and MYOB Acc 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

HBC220 Financial Information Systems
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBC110 • Teaching methods: Lecture, Tutorial & Computer Laboratory • Assessment: Practice set 20% Tests 20% Examinations 50% Tutorial participation 10%
A subject in the Bachelor of Business.

Aims & Objectives
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.

HBC221 Corporate Accounting
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBC110 and HBC220. Highly recommend HBL221 be completed prior to or concurrently with this subject. • Teaching methods: Lecture and Tutorial • Assessment: Assignment 10% Tests 30% 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:
- Introduction to business strategy.
- Quality and theory of constraints.
- Cost systems.
- Functional performance evaluation.
- Organisational structure.
- M accounting and management accounting.
- Transfer pricing.

References

HBC222 Management Decision Making
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBC110 • Teaching methods: Lecture and Tutorial • Assessment: Tutorial participation 10% 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 cost and profit analysis, cost allocation issues, 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., Mowen, M.M. 2000, Management Accounting, 5th edn, Cincinnati, 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 25% 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.
- M accounting and management accounting.
- Transfer pricing.

References
Hansen, D.R., Mowen, M. 2000, Management Accounting, 5th edn, Cincinnati, South-Western.

Swinburne University of Technology | Undergraduate Course Handbook 2005
HBC224  Financial Management

12.5 Credit Points  1 Semester  3 Hours per Week  Hawthorn  Prerequisite: HBC110 and HM B110 or HM S111 or HM S114 or HM S111. 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


HBC225  Auditing and Assurance

12.5 Credit Points  1 Semester  3 Hours per Week  Hawthorn  Prerequisite: HBC110 and HBC221  • Teaching methods: Lecture and Tutorial  • Assessment: Tests 20%, Assignments 20%, Examination 60%

A subject in the Bachelor of Business.

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 hand-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


Updated text list to be advised.

HBC230  Personal Investment

12.5 Credit Points  1 Semester  3 Hours per Week  Hawthorn  Prerequisite: HBC224 recommended  • Corequisites: HBC224  • Teaching methods: Lecture and Tutorial  • Assessment: Assignments 20% Tests 20% Examination 60%

A subject in the Bachelor of Business.

Note: Students should not undertake this subject if they have completed HBC338.

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.

More specifically, the subject objectives are:

• To acquaint participants with the various avenues for the investment of funds, including shares, fixed-interest securities and property.
• To review the impact of taxation on investment planning.
• To consider the fundamental principles of modern portfolio theory.
• To consider the process of portfolio selection and ongoing investment strategies.
• To review the characteristics of financial futures and options and how they may be used to modify the risk-return profile of investment portfolios.

Content

• Taxation and the investor.
• Portfolio theory.
• Efficient markets.
• Fundamental and technical analysis.
• Interest-bearing investments.
• Managed investments and performance evaluations.
• Real estate.
• Warrants, rights and convertible securities.
• Options and futures.
• Superannuation.
• Financial planning and investment advice.

Textbook


References


HBC330  Current Issues in Accounting

12.5 Credit Points  1 Semester  3 Hours per Week  Hawthorn  Prerequisite: As a capstone subject in the Accounting major, students must study this subject in their final semester of the course and must also have completed HBC221, HBC222, and HBC225. Highly recommend that HBL220 and HBL221 be completed prior to this subject.  • Teaching methods: Lecture and Tutorial  • Assessment: Essay 20% Tests 20% Examination 60%

A subject in the Bachelor of Business.

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.

Although the subject is concerned with theory, considerable use is made of practical problems to illustrate the application of theory.

Content

Topics include:

• The nature and development of accounting theories.
HBC331  Taxation Issues and Planning

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBC110 and HBC221 recommended • Teaching methods: Lecture and Tutorial • Assessment: Test 30% Examination 70%
A subject in the Bachelor of Business.

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
Australian Income Tax Assessment Act, Core Legislation, Current edn, CCH Aust Ltd.
Barkoczy, S. Australian Tax Casebook, Current edn, CCH Aust Ltd.

HBC339  Financial Risk Management

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBC224. 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
**Reading Materials**

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
- Reputations of Australia’s Financial Markets
- ARRA’s role and performance
- ASIC’s role and performance
- Debt Markets
- Direct and indirect financing
- Short- and long-term securities
- Retail Banking
- Wholesale Banking
- Equity Markets
- The ASX and role of the stockmarket
- Listing on the ASX
- Trading on the ASX
- Analysis of share prices and other financial data

**Textbook**


**References**

Bruce, R. 2003, Handbook of Australian Corporate Finance, 5th edn, Sydney, Butterworths.

**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% Tests 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

References

HBF411 Finance Advanced Reading Unit
20 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn • Prerequisite: Nil • Teaching methods: Regular meetings with Supervisor • Assessment: Literature review 100% • Seminar presentation of the Honours dissertation proposal and written Honours dissertation proposal are hurdle requirements.
A subject in the Bachelor of Business (Honours).

Aims & Objectives
This subject is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks.

The aims of this subject are to provide students with an opportunity:
- To explore the breadth and depth of their chosen area of study, and
- To use an exploratory approach as a means of arriving at a viable topic for their dissertation.

Students undertaking the language component will be required to read part of the prescribed reading in the chosen language.

Content
Students will be expected to read widely in their area of study from a variety of sources, including texts and journal articles. The purpose of the readings is to engage the student in a critical appraisal of the material and to develop further their research instincts, as well as providing a foundation for the dissertation.

Reading Materials
References will be discipline specific.

HBF410 Finance Honours Dissertation
60 Credit Points • 1 Semester (full-time) • Consultation with supervisor • Hawthorn • Prerequisite: HBO415 and HBF411 • Teaching methods: Supervision • Assessment: Written Dissertation
A subject in the Bachelor of Business (Honours).

Aims & Objectives
Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this subject is a dissertation based on an original theoretical or applied problem. The dissertation will demonstrate the candidate’s ability to conceptualise, undertake and present a research project, based on published theory, in a scholarly and independent manner.

The dissertation will provide a coherent explanation of the research study and follow an ordered sequence in which the research objectives, relationship to other scholarly work, methodology and strategies employed, and the results obtained are identified, analysed and evaluated. The topic of the dissertation, while being set by the student, must be consistent with the broad content of the discipline within which the research has been taken and the student’s capacity to complete research into the topic in the prescribed time. After completing this subject students will have developed the ability to:
- Undertake various forms of primary and secondary research
- Analyse the literature and/or data collected
- Compose a comprehensive and concise report that relates research findings to the research topic and previous published research, if appropriate and formulate conclusion and recommendations and provide directions for future research.

Content
Normally, a student will produce a written minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBF411 Advanced Reading Unit and with the quality expectations that are carried with a work of this kind.

The dissertation will include:
- A statement of the research topic and background to the study
- A current literature review
- Research questions or hypotheses
- Cogent argument
- Clear conclusions and, if necessary, appropriate recommendations

References will be discipline specific.
Translation and Implementation
Customer Relationship Management and Sales Chain Management
Knowledge Discovery and Knowledge Management
Enterprise Resource Planning
Overview of eBusiness and Trend Spotting

Enterprise-wide technologies have, or may, change the way business is conducted. Applications they run and the extensive and pervasive networks, such as the Internet, can connect them. To develop an appreciation of how these end-to-end enterprise-wide technologies have, or may, change the way business is conducted.

Aims & Objectives
To introduce students to the concept of a discourse community and their voice within that community.
- To provide second-language speakers with an opportunity to increase their skills, motivation, independence and confidence in using English by participating in a student-centred developmental program. The central focus will be a project where they will be encouraged to gain control of the English-speaking environment around them in order to produce an authentic product.
- To make strategic use of critical thinking activities, communicative language tasks and student-organised meetings to build decision-making confidence.
- To guide students to recognise and aim for culturally based practices and standards that they have decided they need to fulfill both their short-term and long-term goals.
- To lead the students to develop alternative 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.

HBG270 eBusiness
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: HBM110 and HIT1025/HET123 • Teaching methods: Lecture, Computer Lab, Online Interaction • Assessment: Take-home examination 60% Online participation 40%
A subject in the Bachelor of Business and the Bachelor of Multimedia (Business Marketing).
Note: Students should not undertake this subject if they have completed HBG230 Electronic Marketing or HBM 270 eBusiness.
Aims & Objectives
To facilitate understanding of the broad spectrum of eBusiness, specifically, to examine the changes made possible in business practices and procedures brought about by the diffusion of powerful micro-computers, the extensive software applications they run and the extensive and pervasive networks, such as the Internet, that connect them. To develop an appreciation of how these end-to-end enterprise-wide technologies have, or may, change the way business is conducted.

Content
- Overview of eBusiness and Trend Spotting
- eBusiness Architecture
- Enterprise Resource Planning
- Supply Chain Management
- eProcurement
- Knowledge Discovery and Knowledge Management
- Customer Relationship Management and Sales Chain Management
- The eBusiness Design
- Translation and Implementation

Textbook

References

HBG300 IBL Integrating Project
12.5 Credit Points • 1 Semester • Two 3 hour workshops and regular meeting with academic mentor and employer supervisor • Hawthorn • Prerequisite: Commencement of final semester of degree preferred. Commencement of final year acceptable. Proposal to be completed, and accepted prior to semester, by employer and by School of Business Subject Convenor. Completion of HBG300, IBL work placement, or its equivalent, for example, minimum 12 months approved work experience, with Position Description, to assess suitability for project. • Teaching methods: 2 workshops prior to the semester (3 hours each) to build proposal M etings with academic mentor and employer supervisor throughout the semester Class materials with web support • Assessment: 8,000 word report, supported by presentation, Progress report at mid-semester a hurdle requirement
A subject in the Bachelor of Business

Aims & Objectives
The subject aims to build on workplacement experience. The objective is to develop a project, in liaison with the employer and academic mentor, that will address a real issue identified by the student and facing the employer.

Content
Integrating project is individual in design. Content will vary from project to project.

Textbook

References

HBB110 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, external environment, team development, leadership and communication.

Content
Structure, strategy, culture, external environment, team development, leadership and communication as applied to the class as a temporary learning organisation.

Textbook

References
Selected journal articles and readings as recommended during the program.
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.

References

Content
Following on HBH225 HRM in Contemporary Organisations, this subject highlights the critical links between strategic change, people and performance in achieving organisational success. Considers the impact of strategic business decisions and strategic choices in human resource management strategy, and organisational and individual performance. Students explore the issues through a workplace project which focuses on entrepreneurial initiative in achieving competitive advantage through people while meeting organisational requirements for continuous improvement.

Textbook

HBH323 International Human Resource Management and Diversity
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: HBH110 and HBH225 or HBH221 • Teaching methods: Presentation of theoretical material, Case studies and experiential activities. Class discussion, reflection and research. • Assessment: Individual assessment 60%, Group presentation 40%

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.

Note: Students should not undertake this subject if they have completed HBH223.

Aims & Objectives
- To explore and understand the value of diversity.
- To develop an understanding of national, regional and organisational cultures and how they impact on international human resources management.
- To understand and apply theoretical models that will develop understanding of national cultures.
- To identify and explore issues of social responsibility and ethics and the implications for human resource management policies and practices.
- To develop cross-cultural competencies and a ‘global mindset’.
- To build on research knowledge and skills.

Content
This subject develops an understanding of national, corporate and regional cultures as they impact on cross-cultural management and considers the issues for Human Resource Managers when they work across national boundaries. The subject takes the position that to value difference is central to successful human resource management. International Human Resource Management will build on the knowledge and skills developed in HBH110 and HBH225, and will complement work being undertaken in other subjects through the application of material to the international context.

Reading Materials

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 Work Place Relations Act and the impact the Act will have on the enterprise bargaining process and the key stakeholders.
- Explore and understand the major industrial relations theories to assess the nature of the employment relationship: behaviour of employees, management associations, and trade unions at the workplace.
- Explore enterprise bargaining and the changing nature of work.
- A comparative analysis: global trends and labour market flexibility.
- 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.
- 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, HBH225 or HBH226 • 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 the 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 (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, followship, communication, decision-making, conflict management
- Conscious and unconscious processes in relation to the group's primary task
- Any leadership topic within the field of OB as described and approved in each student's Learning Contract

References
Tyson, T. 1998, Working with Groups, 2nd edn, South Yarra, Macmillan Education. Other references will be recommended in class depending on the experienced dynamics of the class as a whole (for the analytical essay) and on the students' choice of leadership topic (for the Learning Contract).

HBH410 Human Resource Management/ Organisation Behaviour Honours Dissertation

60 Credit Points • 1 Semester (full-time) • Consultation with supervisor • Hawthorn • Prerequisite: HBQ415 and HBH411 • Teaching methods: Supervision • Assessment: Written Dissertation

A subject in the Bachelor of Business (Honours).

Aims & Objectives
Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this subject is a dissertation based on an original theoretical or applied problem. The dissertation will demonstrate the candidate's ability to conceptualise, undertake and present a research project, based on published theory, in a scholarly and independent manner.

The dissertation will provide a coherent explanation of the research study and follow an ordered sequence in which the research objectives, relationship to other scholarly work, methodology and strategies employed, and the results obtained are identified, analysed and evaluated. The topic of the dissertation, while being set by the student, must be consistent with the broad content of the discipline within which the research has been taken and the student's capacity to complete research into the topic in the prescribed time.

After completing this subject students will have developed the ability to:
- Formulate a manageable and realistic research topic and plan
- Undertake various forms of primary and secondary research
- Analyse the literature and/or data collected
- Compose a comprehensive and concise report that relates research findings to the research topic and previous published research, if appropriate and
- Formulate conclusion and recommendations and provide directions for future research.

Content
Normally, a student will produce a written minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBH411 Advanced Reading Unit and with the quality expectations that are carried with a work of this kind.

The dissertation will include:
- A statement of the research topic and background to the study
- A current literature review
- Research questions or hypotheses
- Cogent argument
- Clear conclusions and, if necessary, appropriate recommendations

Reading Materials
References will be discipline specific.

HBH411 Human Resource Management/ Organisation Behaviour Advanced Reading Unit

20 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn • Prerequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Literature review 100% . Seminar presentation of the Honours dissertation proposal and written Honours dissertation proposal are hurdle requirements.

A subject in the Bachelor of Business (Honours).

Aims & Objectives
This subject is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks.

The aims of this subject are to provide students with an opportunity:
- To explore the breadth and depth of their chosen area of study, and
- To use an exploratory approach as a means of arriving at a viable topic for their dissertation.

Students undertaking the language component will be required to read part of the prescribed reading in the chosen language.

Content
Students will be expected to read widely in their area of study from a variety of sources, including texts and journal articles. The purpose of the readings is to engage the student in a critical appraisal of the material and to develop further their research instincts, as well as providing a foundation for the dissertation.

Reading Materials
References will be discipline specific.

HBI231 Foundations of International Business

12.5 Credit Points • 1 Semester • 2.5 Hours per Week • Hawthorn • Prerequisite: HBE110 • Teaching methods: Lecture and Tutorial • Assessment: Fests 40% Final examination 60%

A subject in the Bachelor of Business.

Note: Students should not undertake this subject if they have completed HBE334 International Trade.

Aims & Objectives
To encourage students to understand the historical and macroeconomic foundation of international business, the nature and significance of international trade and the options for improving Australia's trade performance.

Content
This 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:
students have more to offer employers when they seek graduate employment.

HBI340 International Trade Strategies
12.5 Credit Points • 1 Semester • 2.5 Hours per Week • Hawthorn • 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 HBE2110 and HBI231. • Teaching methods: Lecture and Tutorial • Assessment: Test 10% Case Study Assignment 40% Final Examination 50% • A subject in the Bachelor of Business.

Students should not undertake this subject if they have completed HBE340 International Business Strategies.

Aims & Objectives
To enable students to prepare an international trade strategy plan through a case study assignment drawing together the principles of various business-oriented disciplines.

Content
• A broad review of the theory and practice of international trade/business.
• An analytical and strategic perspective to the study of international trade issues.
• Strategies for producing sustainably competitive goods and services.
• Competitive and cooperative strategies required to engage successfully in international trade.

References
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 and corporate governance 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
- Global Corporate governance issues
- 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
CCH International Master Tax Guide

HBI343 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% Class Tests 50%
A subject in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian), Bachelor of Arts, and Bachelor of Social Science.
Note: Students should not undertake this subject if they have completed HAA377.

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 its 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.

Reference


HBI344 Work Experience in Japan
12.5 Credit Points  1 to 2 Semesters  Work Placement  Hawthorn  Prerequisite: Admittance to this subject is at the discretion of the subject convenor  Teaching methods: 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.

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

HBI389 Work Experience in Europe
12.5 Credit Points  1 Semester  Work Placement  Hawthorn  Prerequisite: Admittance to this subject is at the discretion of the convenor  Teaching methods: Three months’ full-time attendance at place of employment, 4 x 2-hour preparatory lectures. Assessment: Professional diary of the experience and Project of 3-4000 words on Topic - 100%. 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 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 employment will also be used for assessing the performance of the student.
A subject in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian).

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
Mercado, Prescott and Welford 2001, European Business, UK.

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 involving 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 4000 words.

A subject in the Bachelor of Business, Bachelor of Business/Bachelor of Arts (Italian), Bachelor of Business (International Business)/Bachelor of Arts (Italian).

Aims & Objectives
This subject aims to:

- expose students to the cultural, political and regulatory environment of the European Union.
- provide an opportunity for students to gain hands-on experience of business in Europe.
- provide an opportunity for students to discuss current issues with a range of individuals and organisations actively involved in this region.

Content
The basis of the 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.

References
HBI288 European Union Tutorial Guide.HBI390 European Union Study Tour

HBI391 Pacific Rim Business Study Tour

12.5 Credit Points • Approx 2 Weeks conducted in January/July • 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 4000 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:

- Aquired 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: Two Stage 2 subjects, including 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 and 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 Americas 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).  • Consultation with supervisor • Hawthorn • Prerequisite: HBI415 and HBI411 • Teaching methods: Regular Meetings with Supervisor • Assessment: Written Dissertation
A subject in the Bachelor of Business (Honours).

Aims & Objectives
Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this subject is a dissertation based on an original theoretical or applied problem. The dissertation will demonstrate the candidate's ability to conceptualise, undertake and present a research project, based on published theory, in a scholarly and independent manner.

The dissertation will provide a coherent explanation of the research study and follow an ordered sequence in which the research objectives, relationship to other scholarly work, methodology and strategies employed, and the results obtained are identified, analysed and evaluated. The topic of the dissertation, while being set by the student, must be consistent with the broad content of the discipline within which the research has been taken and the student's capacity to complete research into the topic in the prescribed time. After completing this subject students will have developed the ability to:
- Formulate a manageable and realistic research topic and plan
- Undertake various forms of primary and secondary research
- Analyse the literature and/or data collected
- Compose a comprehensive and concise report that relates research findings to the research topic and previous published research, if appropriate and
- Formulate conclusion and recommendations and provide directions for future research.

Content
Normally, a student will produce a written minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBI411 Advanced Reading Unit and with the quality expectations that are carried with a work of this kind.

The dissertation will include:
- A statement of the research topic and background to the study
- A current literature review
- Research questions or hypotheses
- Cogent argument
- Clear conclusions and, if necessary, appropriate recommendations

Reading Materials
References will be discipline specific.

HBI411  International Business Advanced Reading Unit
20 Credit Points  • Consultation with supervisor • Hawthorn • Prerequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Literature review 100%. Seminar presentation of the Honours dissertation proposal and written Honours dissertation proposal are hurdle requirements.
A subject in the Bachelor of Business (Honours).

Aims & Objectives
This subject is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks.

The aims of this subject are to provide students with an opportunity:
- To explore the breadth and depth of their chosen area of study, and
- To use an exploratory approach as a means of arriving at a viable topic for their dissertation.

Students undertaking the language component will be required to read part of the prescribed reading in the chosen language.

Content
Students will be expected to read widely in their area of study from a variety of sources, including texts and journal articles. The purpose of the readings is to engage the student in a critical appraisal of the material and to develop further their research instincts, as well as providing a foundation for the dissertation.

Reading Materials
References will be discipline specific.

HBL111  Law in Global Business
12.5 Credit Points  • 3 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lecture and Tutorial • Assessment: Test 25% Final examination 75%
A subject in the Bachelor of Business, Bachelor of Engineering, Bachelor of Science/Bachelor of Business, and Bachelor of Technology/Bachelor of Business.

Aims & Objectives
The aims of this subject are:
- To introduce students to basic legal concepts.
- To introduce students to important areas of business law, including company, contract, tort and intellectual property law.
- To develop an understanding of the nature and function of law, in particular the inter-relationship of law, business and society.
- To introduce students to comparative and international aspects of business law.
- To develop an understanding of the relationship between law and business ethics.

Content
The subject begins with an introductory study of the concepts, techniques and institutions of the common law and civil law traditions. It then proceeds to two case studies on the role of the law in promoting business activity - one in the law of contract and the other in company law. Next, the role of law in controlling business activity is studied using case studies in tort law and the Trade Practices Act.

References

HBL220  Contract Law
12.5 Credit Points  • 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 contracts 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. 2005, Australian Business Law, CCH Australia Ltd.

HBL221 Company Law
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HBL111 • Teaching methods: Lecture and Tutorial • Assessment: Test 40% Final examination 60%
A subject in the Bachelor of Business.

Aims & Objectives
The general aim of this unit is to enable students to gain an understanding of the various type of business organisations that are employed in the modern business environment. The unit commences with an examination of the choices available to the entrepreneur, such as operating as a sole trader, entering into a partnership or joint venture, utilising a trust, or entering into a franchise agreement. The primary focus of the subject is on companies and the provisions of the Corporations Act which encourage and inhibit entrepreneurial activities.

Content
- Types of business organisations.
- Introduction to companies.
- Corporate characteristics and the company as a separate legal entity.
- Company classification.
- Pre-incorporation contracts.
- Contracts with companies.
- Shareholders.
- Management of companies.
- Company litigation and minority shareholding.
- The company in trouble.

Textbooks
Lipton, P. and Herzberg, A. Understanding Company Law, Current edn, Sydney, LBC Information Services.
Corporations Act, Current edn, CCH or Butterworths Edition.

HBL222 Marketing Law
12.5 Credit Points • 1 Semester • 2.5 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.
HBM110 The Marketing Concept

12.5 Credit Points  • 1 Semester  • 3 Hours per Week  • Hawthorn  • Prerequisite: Nil

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, PR, 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 and Tutorial • Assessment: Assignment and presentation 50% Final examination 50%

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 30% Participation 5% Exam 50%

A subject in the Bachelor of Business, Bachelor of Technology/Bachelor of Business, and Bachelor of Multimedia (Business Marketing)

Aims & Objectives
To introduce students to the techniques of planning marketing and involve them in planning processes of real marketing situations. To enable enable students:
- To comprehend the importance of planning for marketing.
- To understand the role of marketing plans as a component of corporate level plans.
- To produce a marketing situation analysis of an organisation and identify key marketing problems.
- To conduct secondary research using various sources to identify and synthesise data into useful management information.
- To develop marketing appropriate marketing objectives.
- To analyse planning options and offer constructive and practical alternative marketing strategies.
- To formulate an integrated and comprehensive marketing action plan.
- To examine in detail the implementation of a marketing plan, including the management of necessary internal organisational changes.
- To prepare professional business reports.
- To enhance your oral and visual presentation techniques to a more formal and professional business style.

Content

Textbooks
Reed, P. 2003, Marketing Strategic Planning, Australia, Thomson Learning.

References

HBM223 Transnational Marketing

12.5 Credit Points  • 1 Semester  • 2 Hours per Week  • Hawthorn  • Prerequisite: HBM110, HBM220 (recommended) • Teaching methods: Lecture, Tutorial and Fieldwork • Assessment: Individual assignment 20% Group assignment 40% Exam 40%

A subject in the Bachelor of Business and the Bachelor of Multimedia (Business Marketing)

Aims & Objectives
This subject aims to provide students with the knowledge to enable them to understand the concept of transnational marketing and how it fits within overall corporate structure and strategy and how it enables organisations to realise offshore opportunities. The subject will look at analysis of market’s, strategies for entry, and implementation of transnational marketing.

The specific objectives are to:

References
• Understand the key drivers for internationalisation and the forces of globalisation.
• Identify political & economic influences.
• Identify sociocultural and technological influences.
• Develop an entrepreneurial feasibility study to internationalise a product or service.
• How eBusiness will impact on transnational marketing.

Content
• PEST (Political, Economic, Socio/Cultural & Technological) factors.
• International market research.
• International planning and marketing management.
• Market entry modes.
• Product/service strategy.
• Distribution strategy.
• Pricing strategy.
• Promotion strategy.
• Negotiation & personal selling.

Textbook

References

References

Issues with, and the future of, e-CRM.
Testing and measuring e-CRM programs.
Creative marketing strategy for developing e-CRM.
Utilising the marketing database.
Inputs for DDM = data collection tools (lists, direct response marketing etc).
Segmentation in the context of e-CRM.
Implications for 'traditional marketing' techniques.

Issues and implications of CRM.
Growth of Data driven marketing (DDM) techniques.
Implications for 'traditional marketing' techniques.
Segmentation in the context of e-CRM.
Inputs for DDM = data collection tools (lists, direct response marketing etc).
Database development and maintenance.
Utilising the marketing database.
Creative marketing strategy for developing e-CRM.
Testing and measuring e-CRM programs.
Issues with, and the future of, e-CRM.

References
Hughes, A. 2000, Strategic Database Marketing, M Graw Hill.

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 50% Major assignment 30% Tutorial work 20%
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
Hughes, A. 2000, Strategic Database Marketing, M Graw Hill.

HBM330 Marketing Innovation Management
12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: HBM222 and HBM272 • 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 manufacture)
• Business analysis/case
• Commercialisation: product, price, communication and distribution issues.
• New venture/start up.

References
Textbook

References

HBM331 Services Marketing and Management
12.5 Credit Points  1 Semester  2 Hours per Week  Hawthorn  Prerequisite: HBM222 and one other Stage 2 Marketing subject  Teaching methods: Lecture and Tutorial  Assessment: Class work/Minor assignment 20%  Assignment 30%  Examination 50%

A subject in the Bachelor of Business, and an elective in the Bachelor of Technology/Bachelor of Business.

Aims & Objectives
The subject aims to provide students with an appreciation of the marketing and management of service businesses, using both theoretical and practical approaches. Students who have completed the subject will be expected to have an understanding of the importance of the services sector in Australia and globally, the differences between goods and services marketing and the specific problems of services marketing management, the interactive nature of services and the resulting issues that need to be faced by managers and the general skills required for the marketing of services.

Content
- The importance of services sectors in Australia and globally, and their specific characteristics.
- Service quality and customer expectations, perceptions and satisfaction.
- Managing service businesses, demand and supply.
- Internal marketing and technology in service delivery.
- Complaint behaviour and service recovery.
- Customer retention and relationship marketing.

Textbook

HBM333 Communications Strategy
12.5 Credit Points  1 Semester  2 Hours per Week  Hawthorn  Prerequisite: HBM220 and HBM222, and HBQ229 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: HBM223  Teaching methods: Lecture, Tutorial and Fieldwork  Assessment: Group case study 30%  Individual network visits/reports 20%  Individual final assignment 30%  Presentation 20%

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
- South East Asian business practices
- Doing business with Americans
- Europe - The old continent is changing
- Europe - Religious roots in Northern Europe’s capitalist system
- Europe - Artisans, tactics and diplomacy in Southern Europe
- Europe - Old and new structures in Eastern Europe
- Practitioners’ viewpoints

Textbook

References

HBM341 Business Strategy
12.5 Credit Points  1 Semester  2 Hours per Week  Hawthorn  Prerequisite: A capstone subject in the Marketing major or M Management major; students must have completed HBM222 and one Stage 2 Marketing, or HBC222, or HRM/IOB subject.  Teaching methods: Lecture, Tutorial and Fieldwork  Assessment: Individual tutorial work 35%  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 discussion groups 40%

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**

60 Credit Points  • 1 Semester (full-time)  • Consultation with supervisor  • Hawthorn  • Prerequisite: HBG415 and HBM411  • Teaching methods: Supervision  • Assessment: Written Dissertation

A subject in the Bachelor of Business (Honours)

**Aims & Objectives**
Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this subject is a dissertation based on an original theoretical or applied problem. The dissertation will demonstrate the candidate's ability to conceptualise, undertake and present a research project, based on published theory, in a scholarly and independent manner.

The dissertation will provide a coherent explanation of the research study and follow an ordered sequence in which the research objectives, relationship to other scholarly work, methodology and strategies employed, and the results obtained are identified, analysed and evaluated. The topic of the dissertation, while being set by the student, must be consistent with the broad content of the discipline within which the research has been taken and the student's capacity to complete research into the topic in the prescribed time.

After completing this subject students will have developed the ability to:
- Formulate a manageable and realistic research topic and plan
- Undertake various forms of primary and secondary research
- Analyze the literature and/or data collected
- Compose a comprehensive and concise report that relates research findings to the research topic and previous published research, if appropriate and
- Formulate conclusion and recommendations and provide directions for future research.

**Content**

Normally, a student will produce a written minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBM 411 Advanced Reading Unit and with the quality expectations that are carried with a work of this kind.

The dissertation will include:
- A statement of the research topic and background to the study
- A current literature review
- Research questions or hypotheses
- Cogent argument
- Clear conclusions and, if necessary, appropriate recommendations

**Reading Materials**
References will be discipline specific

HBM411  **Marketing Advanced Reading Unit**

20 Credit Points  • 1 Semester  • Consultation with supervisor  • Hawthorn  • Prerequisite: Nil  • Teaching methods: Regular Meetings with Supervisor  • Assessment: Literature review 100%. Seminar presentation of the Honours dissertation proposal and written Honours dissertation proposal are hurdle requirements.

A subject in the Bachelor of Business (Honours)

**Aims & Objectives**
This subject is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks.

The aims of this subject are to provide students with an opportunity:
- To explore the breadth and depth of their chosen area of study, and
- To use an exploratory approach as a means of arriving at a viable topic for their dissertation.

Students undertaking the language component will be required to read part of the prescribed reading in the chosen language.

**Content**

Students will be expected to read widely in their area of study from a variety of sources, including texts and journal articles. The purpose of the readings is to engage the student in a critical appraisal of the material and to develop further their research instincts, as well as providing a foundation for the dissertation.

**Reading Materials**
References will be discipline specific

HBM410  **Management Honours Dissertation**

60 Credit Points  • 1 Semester (full-time)  • Consultation with supervisor  • Hawthorn  • Prerequisite: HBG415 and HBM411  • Teaching methods: Supervision  • Assessment: Written Dissertation

A subject in the Bachelor of Business (Honours)

**Aims & Objectives**
Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this subject is a dissertation based on an original theoretical or applied problem. The dissertation will demonstrate the candidate's ability to conceptualise.
undertake and present a research project, based on published theory, in a scholarly and independent manner.

The dissertation will provide a coherent explanation of the research study and follow an ordered sequence in which the research objectives, relationship to other scholarly work, methodology and strategies employed, and the results obtained are identified, analysed and evaluated. The topic of the dissertation, while being set by the student, must be consistent with the broad content of the discipline within which the research has been taken and the student's capacity to complete research into the topic in the prescribed time.

After completing this subject students will have developed the ability to:

- Formulate a manageable and realistic research topic and plan
- Undertake various forms of primary and secondary research
- Analyse the literature and/or data collected
- Compose a comprehensive and concise report that relates research findings to the research topic and previous published research, if appropriate and
- Formulate conclusion and recommendations and provide directions for future research.

Content

Normally, a student will produce a written minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBMG411 Advanced Reading Unit and with the quality expectations that are carried with a work of this kind.

The dissertation will include:

- A statement of the research topic and background to the study
- A current literature review
- Research questions or hypotheses
- Cogent argument
- Clear conclusions and, if necessary, appropriate recommendations

Reading Materials

References will be discipline specific

HBMG411 Management Advanced Reading Unit

20 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn • Prerequisite: HBMG312 100% Literature Review. Seminar presentation of Honours dissertation proposal and written Honours dissertation proposal are hurdle requirements.

A subject in the Bachelor of Business (Honours)

Aims & Objectives

This subject is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks.

The aims of this subject are to provide students with an opportunity:

- To explore the breadth and depth of their chosen area of study, and
- To use an exploratory approach as a means of arriving at a viable topic for their dissertation.

Students undertaking the language component will be required to read part of the prescribed reading in the chosen language.

Content

Students will be expected to read widely in their area of study from a variety of sources, including texts and journal articles. The purpose of the reading is to engage students in a critical appraisal of the material and to develop their research instincts, as well as providing a foundation for the dissertation.

Reading Materials

References will be discipline specific

HBP228 Manufacturing Management

12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: HBP227 • Teaching methods: Lecture and Tutorial • Assessment: Assignment 40% Group assignment 40% Test 20%

A subject in the Bachelor of Business and Bachelor of Engineering (Manufacturing)

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


Dillow, 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 progression are developed within a practical context from buyer beware through corrective, preventive and cost-based quality, to the requirements of serving the customer chain. Current quality demands on industry are reviewed and evaluated for impact on management systems.

This subject also covers the definition of quality, and competing through the dimensions of quality. The steps to ISO 9000.2000 accreditation and benchmarking are also discussed.

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) • Consultation with supervisor • Hawthorn • Prerequisite: HBP415 and HBP411 • Teaching methods: Supervision • Assessment: Written Dissertation

A subject in the Bachelor of Business (Honours)

**Aims & Objectives**

Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this subject is a dissertation based on an original theoretical or applied problem. The dissertation will demonstrate the candidate's ability to conceptualise, undertake and present a research project, based on published theory, in a scholarly and independent manner.

The dissertation will provide a coherent explanation of the research study and follow an ordered sequence in which the research objectives, relationship to other scholarly work, methodology and strategies employed, and the results obtained are identified, analysed and evaluated. The topic of the dissertation, while being set by the student, must be consistent with the broad content of the discipline within which the research has been taken and the student's capacity to complete research into the topic in the prescribed time.

After completing this subject students will have developed the ability to:

- Formulate a manageable and realistic research topic and plan
- Undertake various forms of primary and secondary research
- Analyse the literature and/or data collected
- Compose a comprehensive and concise report that relates research findings to the research topic and previous published research, if appropriate and
- Formulate conclusion and recommendations and provide directions for future research.

**Content**

Normally, a student will produce a written minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBP411 Advanced Reading Unit and with the quality expectations carried with a work of this kind.

The dissertation will include:

- A statement of the research topic and background to the study
- A current literature review
- Research questions or hypotheses
- Cogent argument
- Clear conclusions and, if necessary, appropriate recommendations

**Reading Materials**

References will be discipline specific.

### HBP411 Manufacturing Management Advanced Reading Unit

20 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn • Prerequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Literature Review 100%. Seminar presentation of the Honours dissertation proposal and written Honours dissertation proposal are hurdle requirements.

A subject in the Bachelor of Business (Honours)

**Aims & Objectives**

This subject is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks.

The aims of this subject are to provide students with an opportunity:

- To explore the breadth and depth of their chosen area of study, and
- To use an exploratory approach as a means of arriving at a viable topic for their dissertation.

Students undertaking the language component will be required to read part of the prescribed reading in the chosen language.

**Content**

Students will be expected to read widely in their area of study from a variety of sources, including texts and journal articles. The purpose of the readings is to engage the student in a critical appraisal of the material and to develop further their research instincts, as well as providing a foundation for the dissertation.

**Reading Materials**

References will be discipline specific.

### HBQ229 Marketing Research

12.5 Credit Points • 1 Semester • 2 Hours per Week • Hawthorn • Prerequisite: HBM110 and either HM B110 or HM B111, or one of the following subjects: HM A102, HM A104, HM S102, HM S141 or HM A278 • Corequisites: HBM 230 • Teaching methods: Lecture, Tutorial and Laboratory • Assessment: SPSS assignment 30%, Fieldwork assignment 20%, Examination 50% • 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 market 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.

**Textbooks**


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: Nil • Teaching methods: Several teaching methods will be adopted, including formal lectures, tutorials, laboratories and seminars. • Assessment: Individual class presentation 10%, Group Assignments 45%, Individual Assignments 45% • A subject in the Bachelor of Business (Honours)
Aims & Objectives
This subject prepares students for the research process through the discussion of the many components and techniques required to undertake business research. Students will develop an understanding of how to conduct sound, ethical and rigorous research projects applicable to both applied and theoretical contexts. On completion of this subject students will be equipped with the necessary skills to complete an Honours dissertation as well as the skills required to undertake studies towards higher degrees. Students will become competent in understanding the research process and its various components, as well as be introduced to various types of business research methodologies, their advantages and disadvantages. 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 research topic
- Critical appraisal of published works.
- Research strategies
- Preparation and evaluation of research proposals
- Research ethics
- Sampling methods
- Selection/development of measuring instruments
- Qualitative research techniques
- Selection and evaluation of qualitative and quantitative research methods
- Qualitative and quantitative data analysis and interpretation
- Preparation of the research report

Textbook

References
Cavana, R.T., Delahaye, B.L. and Sekaran, U. 2001, Applied Business Research: Qualitative and Quantitative Methods, Australia, John Wiley & Sons.

HBSG200 New Venture Development and Management
12.5 Credit Points - 1 Semester - 4 Hours per Week - Hawthorn - Prerequisite: Nil
- Teaching methods: Class participation, self study exercises, syndicate group discussions, presentations, external guest lecturers. - Assessment: Written case analysis and recommendations 25%, Case Studies-class participation 25%, Case Study analysis in syndicates of 4 reports to be presented in class 50%
This subject is available as an elective to all students except students enrolled in the Bachelor of Business as either a single or double degree.

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.
- Business License Information Sources/Business Structures.
- People: Selection and Recruitment.
- Dealing with Partners and Associates.
- Finance, Taxation and Investors.
- Operational Issues in Start-Ups - Structure and Relationships.
- Building New Markets.
- Ongoing Management Issues: Handling Growth.
- Getting Investors Out/Public Listing.

Reading Materials

HBSH100 Behaviour and Communication in Organisations
12.5 Credit Points - 1 Semester - 4 Hours per Week - Hawthorn - Prerequisite: Nil
- Teaching methods: Lectures, Laboratory - Assessment: Class Exercises, Group Work, Oral Presentation, Report, Journal Writing
A subject in the Bachelor of Information Technology.

Aims & Objectives
- To provide students with an understanding of the nature and importance of communication, interpersonal skills, individual and group development to members of organisations.
- To build fundamental academic skills, including written and verbal communication, presentation, reference skills, intellectual independence, analysis, synthesis, research, transfer of learning from one situation to another.
- To develop students’ interpersonal and skills as team members in today’s changing organisations.
- To allow students to experiment with various techniques, theories and approaches to communication and management through the use of experiential teaching techniques.
- To prepare students to appreciate the context of work and their own roles as organisation members, especially in the global context.
- To provide a foundation for subsequent studies.

Content
- Introduction to communication.
- Research.
- Report writing.
- Oral presentations.
- Interviewing skills.
- Groups and communication.
- Group dynamics/team work.
- Perception/self-disclosure.
- Anger, stress and managing feelings.
- Conflict.
- Negotiation.

Reading Materials
To be advised.
Aims & Objectives

- To provide students with an understanding of the nature and importance of communication, interpersonal skills, individual and group development to members of organisations.
- To build fundamental academic skills, including written and verbal communication, presentation, reference skills, intellectual independence, analysis, synthesis, research, transfer of learning from one situation to another.
- To develop students’ interpersonal and skills as team members in today’s changing organisations.
- To allow students to experiment with various techniques, theories and approaches to communication and management through the use of experiential teaching techniques.
- To prepare students to appreciate the context of work and their own roles as organisation members, especially in the global context.
- To provide a foundation for subsequent studies.

Content

- Introduction to communication.
- Research.
- Report writing.
- Oral presentations.
- Interviewing skills.
- Groups and communication.
- Group dynamics/team work.
- Perception/self-disclosure.
- Anger, stress and managing feelings.
- Conflict.
- Negotiation.

Reading Materials

To be advised.

HBSH200 Organisation Behaviour

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HBSH100 • 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.

Reading Materials

To be advised.

HBSH400 Administration and Management

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HBSL200 • Teaching methods: Lectures/Presentations/Discussion Groups • Assessment: Assignments, Final examination, Group presentation

A subject in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives

- To further develop an understanding of the application of administrative law essential to good management techniques.
- To develop an understanding of the origins and workings of administrative law. A general examination of administrative and decision-making processes on both the federal and state levels with emphasis placed on the state jurisdiction.
- To understand the review process both on the basis of merits review and judicial review by examining the circumstances in which each takes place by way of challenge.
- To examine the circumstances where decisions are challenged on the basis of denial of justice.
- To develop an understanding of the nature and behaviour of organisations.
- To examine the characteristics and role of management.
- To understand the culture of change.

Content

- The consideration of efficient internal administrative procedures to ensure against liability for negligent advice.
- Regulatory controls – statutory duties and liability for breach, effective administration procedures and alternatives in regulatory techniques.
- Legal responsibility of business units, contractors and corporate entities.
- The role of the Ombudsman and Committees of Enquiry.
- The Administrative Law Act and review by courts and tribunals of the administrative process, the application of the rules of natural justice, notice and fair hearing, the duty to give reasons, impartiality and bias.
- Role of Civil and Administrative Tribunal (VCAT). Alternative dispute resolution/mediation.
- An introduction to organisational and management theory and practice.
- Organisational culture – myths, metaphors and behaviours.
- Management characteristics of leadership, power and decision-making, conflict and negotiations, management roles and team work/group processes.
- Financial and resource management. Organisational change.
- Human resources, industrial relations and workplace agreements.
- Organisational effectiveness models.
- Competitive tendering, including client/provider split, business plans, specifications, tender bids, tender evaluation, contract management.
- Principles of risk management.

Reading Materials

HBSL100  Introductory Law

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
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.

Reading Materials

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.
- Public health powers and controls of the Local Government Act.
- The legal process of prosecution. Ambiguous allegations, rules and proof of service. Time limits, adjournment.
- The rules of evidence, statutory and judicial developments, burden and standards of proof, hearsay, documents, admissions, improperly obtained evidence. Witnesses.
- Sampling and entry powers of authorised officers under Health, Food and Environment Protection Acts.

- Problems caused by the concept of legal personality with corporate defendants.

Reading Materials
Health Act.
Environment Protection Act.
Class manuals.

HBT410  Information Systems Honours Dissertation

60 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn • Prerequisite: HBS415 and HBT411 • Teaching methods: Supervision • Assessment: Written Dissertation
A subject in the Bachelor of Business (Honours)

Aims & Objectives
Students will work individually with a suitably qualified member of Swinburne academic staff whilst undertaking individual research projects. The outcome of this subject is a dissertation based on an original theoretical or applied problem. The dissertation will demonstrate the candidate's ability to conceptualise, undertake and present a research project, based on published theory, in a scholarly and independent manner.

The dissertation will provide a coherent explanation of the research study and follow the above sequence in which the research objectives, relationship to other scholarly work, methodology and strategies employed, and the results obtained are identified, analysed and evaluated. The topic of the dissertation, while being set by the student, must be consistent with the broad content of the discipline within which the research has been taken and the student's capacity to complete research into the topic in the prescribed time.

After completing this subject students will have developed the ability to:
- Formulate a manageable and realistic research topic and plan
- Undertake various forms of primary and secondary research
- Analyse the literature and/or data collected
- Compose a comprehensive and concise report that relates research findings to the research topic and previous published research, if appropriate and
- Formulate conclusion and recommendations and provide directions for future research.

Content
Normally, a student will produce a written minor dissertation of between 15,000 and 20,000 words. The structure of the dissertation will be consistent with both the proposal developed in HBT411 Advanced Reading Unit and with the quality expectations of a work of this kind.

The dissertation will include:
- A statement of the research topic and background to the study
- A current literature review
- Research questions or hypotheses
- Cogent argument
- Clear conclusions and, if necessary, appropriate recommendations

Reading Materials
References will be discipline specific

HBT411  Information Systems Advanced Reading Unit

20 Credit Points • 1 Semester • Consultation with supervisor • Hawthorn • Prerequisite: Nil • Teaching methods: Regular Meetings with Supervisor • Assessment: Literature Review 100%. Seminar presentation of the Honours dissertation proposal and written Honours dissertation proposal are hurdle requirements.
A subject in the Bachelor of Business (Honours)

Aims & Objectives
This subject is designed for students to undertake extensive reading in their chosen discipline area with the view to selecting a research topic and developing an extensive literature review. Students will develop an awareness of contemporary research relevant to their area of study as well as the ability to identify and understand appropriate theoretical frameworks.

The aims of this subject are to provide students with an opportunity:
- To explore the breadth and depth of their chosen area of study, and
Aims & Objectives
To enhance and develop students' professional design abilities 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; and marketing.

Projects will be undertaken in the Faculty of Design’s Design Research Centre. The Design Research Centre is a working design studio that develops innovative design projects, especially where innovation is supported by applied design research. Projects may include both commissioned projects and self-determined projects.

A subject in the Bachelor of Design in Communication Design (Hons)

HDC471  Communication Design Research 7
25 Credit Points • 1 Semester • 7 Hours per Week • Prerequisite: Nil

Teaching methods: Projects will generally be conducted in a studio and computing labs, on a work-in-progress basis. Group discussion, site visits, research, consultation, evaluation, critique sessions and presentations will be conducted where appropriate. • Assessment: Projects, Final Report Presentation, Folio Presentations

A subject in the Bachelor of Design in Communication Design (Hons)

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. Communication Design Research involves students, working in teams or individually, to undertake of a major study exploring communication design research methodologies and graphic documentation. It may require students to work in teams to develop a formative proposal. Communication Design 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.

HDC472  Design Communication Studio 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 when appropriate, through seminars, individual student consultations, class discussions and critiques. Students also initiate peer feedback through presentations. • Assessment: Final Report Presentation, Folio Presentations

A subject in the Bachelor of Design (Hons) in Communication Design

Aims & Objectives
Students are challenged to see information design as a critical area of design for the community at large. Through emersion in applied projects students consider how design codes and structures information for particular audiences. Strong emphasis is placed on the particular processes through which designers give form to information.

Content
Through structured projects, the studio provides practical design experience and enhanced understanding of communication planning and information design. Participants identify and examine best practice in printed and electronic information and interface design. Design projects will be developed through user-centred design strategies and testing/feedback principles. This subject will involve both group work and individual work.
Aims & Objectives

- To offer an advanced understanding of how communication strategies, including branding programs, are developed and executed in contemporary design practice.
- To allow students to understand business strategic planning from the client's perspective and to develop an awareness of its relationship to design services.
- To challenge participants to refine design deliverables to an advanced level.
- To guide participants to present and document design proposals in a creative, professional, and visually meaningful way.
- To offer both individual and group projects, as modelling industrial practice.

Content

The content of this subject is delivered in the context of the following projects:

- **Brand values and Strategy**
  - This project investigates the research, analysis and planning phase of a design project. It includes the visual audit of existing design collateral and brand values, client and audience research, preparation of a return brief comprising a new vision statement and design proposal, project timeline, and cost analysis. This is a group project.

- **Brand Mark Design**
  - This project focuses on the conceptual design of the brand mark, especially industry methods of developing brandmark design. It challenges participants to evaluate and devise their own methods of brand mark categorisation, and to refine the typographic and visual components of their work. This is an individual project developed within a group setting, as occurs in industry.

- **Design applications manual**
  - This project introduces the participants to the wider context of branding and shows how branding is not just a logo design but rather a kit of parts to be used in an organic, flexible way. The final brand will be developed into a series of applications, some standard and some unique, incorporating a "look and feel" range of elements. It will then be executed as a sample set of pages for a Design Manual. This is an individual project developed within a group setting as occurs in industry.

HDC481 Communication Design Research 8

25 Credit Points - 1 Semester - 7 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: Project(s), Final Report Presentation, Folio Presentations

A subject in the Bachelor of Design (Hons) in 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. Communication Design Research involves students, working in teams or individually, to undertake of a major study exploring communication design research methodologies and graphic documentation. It may require students to work in teams to develop a formative proposal. Communication Design 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.

HDC482 Design Communication Studio 8

12.5 Credit Points - 1 Semester - 3 Hours per Week - Prahran - Prerequisite: Successful Completion of Semesters 5 and 6 - Teaching methods: Subject content will be delivered through projects in a studio environment, on location when appropriate, by seminars, student consultation sessions, group discussion, and critiques. Participants will be expected to attend all seminars and present their work throughout the semester. - Assessment: Final Report Presentation, Folio Presentations

A subject in the Bachelor of Design (Hons) in Communication Design

Aims & Objectives

This subject challenges students to apply the fundamental principles of information design, that is hierarchy, navigation and structure, to the design of complex ideas and fields of information. Students are also introduced to the dynamic interaction of information in a digital context, where managing complexity to create meaningful experiences is a constant challenge.

Content

This subject focuses on more complex information design issues, especially the role of visual communication in mediating the reception of information and contemporary social experience. Through structured projects students gain practical experience in communication planning and information design. Reference will be made to the rhetorical, narrative, verbal, visual, textual and semantic context of communication. Design projects are developed through user-centred design strategies and testing/feedback principles. This subject involves both group work and individual work.

HDC483 Creative Strategy Projects

12.5 Credit Points - 1 Semester - 3 Hours per Week - Prahran - Prerequisite: Successful Completion of Semesters 5 and 6 - Teaching methods: Subject content will be delivered through projects in a studio environment, on location when appropriate, by seminars, student consultation sessions, group discussion, and critiques. Participants will be expected to attend all seminars and present their work to the group at the end of each project. - Assessment: Continuous, Final Report Presentation, Folio Presentations

A subject in the Bachelor of Design (Hons) in Communication Design

Aims & Objectives

- To introduce participants to the variety of creative strategies available to designers and how to use them effectively.
- To challenge the client designer relationship, enabling designers to be at the forefront of decision-making within the wider social arena.
- To reinvent client briefs and to break new ground in terms of specific design responses.
- To extend traditional role of the designer.
- To understand the value of working within a multi-disciplined team of specialists.
- To challenge participants to refine design deliverables to an advanced level.
- To offer both individual and group projects, as modelling industrial practice.

Content

The content of this subject is delivered in the context of the following projects:

- Communication Strategies
  - This project investigates the research, analysis and planning phase of a design project. It includes the visual audit of existing design collateral and brand values, client and audience research, preparation of a return brief comprising a new vision statement and design proposal, project timeline, and cost analysis. This is an individual project.

- Graphic Design
  - This project focuses on the production of advanced visual design, especially industry. It challenges participants to evaluate and devise their own methods of taxonomy in ordering information, and to refine the typographic and visual components of their work. This is an individual project developed within a group setting, as occurs in industry.

- Documenting Design
  - Explores new documentary protocols for use in professional design, employing investigative and conceptual architecture creating visual possibilities of information delivery, based on tried methods developed at the Faculty of Design in Communication Design This is an individual project developed within a group setting as occurs in industry.
A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

Generally to provide the 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 Faculty of Design in cooperation with employers.

HDCD111 Design Communication Studio 1

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil

Teaching methods: Projects conducted in a studio environment. Student consultation/discussion and critiques. 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 context, 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: Projects, Class exercises

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

- To further enhance methods of directing creativity through the formation of communication strategy.

HDCD122 Technology 2

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil

Teaching methods: Tutorials, Exercises and Workshops Assessment: Projects, Class exercises

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

- 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.

HDCD231 Design Communication Studio 3

25 Credit Points • 1 Semester • 8 Hours per Week • Prahran • Prerequisite: Stage 1

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. 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.

Reading Materials

HDCD232 Graphic Communications 3
12.5 Credit Points  1 Semester  •  4 Hours per Week  •  Prahran  •  Prerequisite: Stage 1  •  Teaching methods: Projects conducted in a studio environment including seminars, group discussion, activities and critical review of work in progress  •  Assessment: Projects
A subject in the Bachelor of Design (Communication Design)

Aims & Objectives
• To develop an understanding of skills required to realise graphic solutions.
• To enhance methods of directing creativity through the formation of communication strategy.

Content
To gain knowledge and experience communication design through an understanding of a visual language.

Reading Materials

HDCD242 Research Project
12.5 Credit Points  •  1 Semester  •  4 Hours per Week  •  Prahran  •  Prerequisite: Stage 1  •  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: Projects
A subject in the Bachelor of Design (Communication Design)

Aims & Objectives
• To develop independent research and project management skills.
• To develop an ability to present the project outcomes/s utilising appropriate professional presentation methods.

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.

HDCD243 Photography in Communication Design
12.5 Credit Points  •  1 Semester  •  4 Hours per Week  •  Prahran  •  Prerequisite: Stage 1  •  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, Projects
A subject in the Bachelor of Design (Communication Design)

Aims & Objectives
• To develop and communicate photographic ideas, skills and methods in communication design.
• To gain an understanding of skills required to realise graphic solutions.
• To explore craft skills, media technology and applications in graphic mediums.
• To appreciate the contextual relationships in the photographic image.

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 develop fundamental aspects of the content, function and context of visual communication as a means of design.

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: Continuous

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

- To analyse, describe, invent and propose structured diagrammatic visual documents.
- 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. Understanding how to develop a comprehensive idea for specific communication objectives through informed documentation. Analysing information 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

Reading Materials

Campbell, A., Digital Diagrams

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 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 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

Reading Materials

Berger, J. Ways of Seeing.

HDCD246 Interactive Design

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Fundamental knowledge of multimedia software are 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 story boards, 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: Stage 2 • 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 the investigation of design principles, methodologies and technologies particular to the design industry. Outcomes of projects are focused toward equipping the student with an industry-relevant folio at the completion of the degree.
A subject in the Bachelor of Design (Communication Design).

Assessment: Continuous
12.5 Credit Points  1 Semester  4 Hours per Week  Prahran  Prerequisite: HDCD352 Graphic Communications 5

Aim & 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 toward equipping the student with an industry relevant folio at the completion of the degree.

HDCD351S Design Communication Studio 5
12.5 Credit Points  1 Semester  4 Hours per Week  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).

Aim & Objectives
- 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 toward equipping the student with an industry relevant folio at the completion of the degree.

HDCD352HK Graphic Communications 5
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).

Aim & Objectives
- To provide the opportunity for the experience and understanding of the systems, methodologies and technologies relevant to contemporary communication design practice within the professional design industry,
- To establish proficiencies in design project management skills and in the understanding of business systems and production.

Content
Through a series of projects, aspects of print-based software and basic instruction in aspects of multimedia will be provided. Further concentrated projects will engage with specific production technologies examining various production methodologies. 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.

HDCD352S Graphic Communications 5
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).

Aim & Objectives
- To provide the opportunity for the experience and understanding of the systems, methodologies and technologies relevant to contemporary communication design practice within the professional design industry,
- To establish proficiencies in design project management skills and in the understanding of business systems and production.

Content
Through a series of projects, aspects of print-based software and basic instruction in multimedia will be provided. Further concentrated projects will engage with specific production technologies examining various production methodologies. 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.

HDCD353 Interface Design
12.5 Credit Points  1 Semester  4 Hours per Week  External Venue
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
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.

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.

HDCD353HK Interface Design

12.5 Credit Points • 1 Semester • 4 Hours per Week • External Venue • 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 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.

Reading Materials

Aims & Objectives
- 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 the subject. Analysis of appropriateness of imagery and its relevance to its media context will also occur.

Reading Materials

HDCD355 Design for Publication
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • 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 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 • Prahran • 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.
- 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.

Reading Materials

HDCD361 Design Communication Studio 6
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Project work will be undertaken in a combination of seminars, studio sessions, tutorial groups and individual consultation. There will be continuous critical review of work in progress, opportunities to work in small teams and group discussion. 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 extend and focus the fundamentals of applied communication design and visual communication by engaging the student in a single topic project with a range of applied outcomes.
To extend and focus the fundamentals of applied communication design and research skills through a single investigation.

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 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.

HDCD361HK Design Communication Studio 6

12.5 Credit Points • 1 Semester • 4 Hours per Week • External Venue

Prerequisite: Nil
Teaching methods: Project work will be undertaken in a combination of seminars, studio sessions, tutorial groups and individual consultation. There will be continuous critical review of work in progress, opportunities to work in small teams and group discussion. Projects will be supported by presentations of visual and background research in a group lecture situation by staff and /or students.

A subject in the Bachelor of Design (Communication Design)

Aims & Objectives

• To extend and focus the fundamentals of applied communication design and visual communication by engaging the student in a single topic project with a range of applied outcomes.
• To allow students to consolidate skills from other subjects and electives in an applied single project.
• To utilise imagery and words, and where possible, motion and sound, to communicate in a range of media and formats, including print and digital media.
• To develop and apply skills in pertinent software applications.
• To focus the student’s development of sound idea-generation methodologies and research skills through a single investigation.
• To develop aspects of professional design practice in strategy, form and content.

HDCD362HK 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.

A subject in the Bachelor of Design (Communication Design)

Aims & Objectives

• To provide opportunity for the experience and understanding of the systems, methodologies and technologies relevant to contemporary communication design practice within the professional design industry.
• To 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.

HDCD362S Design Communication Studio 6

12.5 Credit Points • 1 Semester • 4 Hours per Week • External Venue

Prerequisite: Nil
Teaching methods: Project work will be undertaken in a combination of seminars, studio sessions, tutorial groups and individual consultation. There will be continuous critical review of work in progress, opportunities to work in small teams and group discussion. Projects will be supported by presentations of visual and background research in a group lecture situation by staff and /or students.

A subject in the Bachelor of Design (Communication Design)

Aims & Objectives

• To extend and focus the fundamentals of applied communication design and visual communication by engaging the student in a single topic project with a range of applied outcomes.
HDCD366 Context Culture & Identity

A subject in the Bachelor of Design (Communication Design).

Aims & Objectives

- To introduce learning strategies particular to the needs of design students.
- To introduce students to the professional field of interpretation design.
- To introduce fundamental design elements, skills and methodologies appropriate to designers and relevant to the program areas within the Faculty of Design.
- To expose students to a wide range of staff and their experiences in their areas of specialisation.
- To forge strong interdisciplinary links between all cohorts of students.
- To introduce learning strategies particular to the needs of design students.

Content

Within the Design Lab Program students will experience fundamental design practice through studio based design projects and introduction lectures. Areas of activity include: Research techniques, Principles of design and the design process, Visual language and Communication Design documentation, Design specific learning strategies. The integrity of each Design Lab Studio activity will support the other.

The OnLine Learning lectures will be integrated with the issues underlying selected studio projects. These lectures will contribute to locating student experiences within the historical and contemporary, social and theoretical contexts for design.

HDD001A Design Lab A - 2D Constructs

A subject in the Bachelor of Design in Communication Design, Industrial Design, Interior Design and Multimedia Design

Aims & Objectives

- To utilise and reinforce design strategy and production skills from other subjects.
- To engage with the local urban, rural and natural environment as a setting for applied projects.

Content

Interpretation is the umbrella term used in tourism and heritage management sectors for the communication activity commonly found in national parks, museums, zoos, botanic gardens, aboriginal keeping places, galleries, historic sites, science centres, state forests, urban parks and reserves. Communication designers provide the visual interface for such communication activity, which is emerging as a specialised design field, that of Interpretation Design. Using local sites as an example this elective will provide an introduction to issues, practices and models for working on interpretation projects. Visits to local sites, field trips, visiting speakers and tours will provide a key focus this elective. Topics covered include: Communicating place, Branding of public spaces, Tourism, eco-tourism and post-tourism. Interpretation of natural and cultural heritage, Media systems and production for interpretative settings. Evaluation of interpretation design.
Aims & Objectives
- To introduce fundamental design elements, skills and methodologies appropriate to designers and relevant to the program areas within the Faculty of Design.
- To expose students to a wide range of staff and their experiences in their areas of specialisation.
- To forge strong interdisciplinary links between all cohorts of students.
- To introduce learning strategies particular to the needs of design students.

Content
Within the Design Lab Program students will experience fundamental design practice through studio based design projects and introduction lectures. Areas of activity include: Research techniques, Principles of design and the design process, Visual language and communication, Design documentation, Design specific learning strategies.

HDD001C Design Lab C - Form and Object
12.5 Credit Points  1 Semester  4 Hours per Week  Prahran  Prerequisite: Nil
Teaching methods: 1 hour lecture/briefing session once every week, 1 x 3 hour tutorial/workshop sessions per week  - Assessment: Continuous, Final Report Presentation, Folio Presentations
A subject in the Bachelor of Design in Communication Design, Industrial Design, Interior Design and Multimedia Design

Aims & Objectives
- To introduce fundamental design elements, skills and methodologies appropriate to designers and relevant to the program areas within the Faculty of Design.
- To expose students to a wide range of staff and their experiences in their areas of specialisation.
- To forge strong interdisciplinary links between all cohorts of students.
- To introduce learning strategies particular to the needs of design students.

Content
Within the Design Lab Program students will experience fundamental design practice through studio based design projects and introduction lectures. Areas of activity include:

- Research techniques
- Principles of design and the design process: Visual language and communication
- Design documentation
- Design specific learning strategies.

The integrity of each DesignLab Studio activity will support the other.

The Online Learning lectures will be integrated with the issues underlying selected studio projects. These lectures will contribute to locating student experiences within the historical and contemporary, social and theoretical contexts for design.

HDD001D Design Lab D - Design on Line
12.5 Credit Points  1 Semester  4 Hours per Week  Prahran  Prerequisite: Nil
Teaching methods: Weekly lectures and films combined with a range of online learning activities including discussion forums, real-time group tutorials, quizzes, and creative illustrated essays, with the emphasis being on building community and communication. Intructory sessions with L75 to develop online learning skills.  - Assessment: Computer Managed Learning
A subject in the Bachelor of Design in Communication Design, Industrial Design, Interior Design and Multimedia Design

Aims & Objectives
To build an e-learning design community focused on the exploration of Design issues. To provide students with a foundation insight into issues pertaining to Design, its history, practice and relationship to society. To develop broad insights into how design is practised, theorised and talked about by looking back at the past. To trigger students' engagement in the self-driven exploration of design in the past, present and future.

Content
A contemporary lens is used to look back at design developments in a specific era, and the manner in which design imagines and gives form to a multiplicity of design practices, ideas, and objects. Lectures and films will provide an international perspective of the multi-disciplinary practice of design taking into consideration relevant developments in the media, technology, materials and culture. Online Group Discussion Labs will extend the focus to developments in a more specific and focused manner.

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, Projects
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 Faculty 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 1
12.5 Credit Points  1 Semester  6 Hours  Hawthorn;Prahran  Prerequisite: Nil
Teaching methods: A variety of delivery modes will be used and will be reviewed periodically by the subject panel in conjunction with the School's Teaching and Learning Committee. The current modes of delivery include: Project-based learning and self-directed: individual and small-group problem-solving research projects - 36 hours. Tutorials: model shop tutorials - 30 hours. Industrial visit, as required. Web-based subject presence (Blackboard). Research materials and supporting project materials will be provided online  - Assessment: Project(s), Tests, Project & Folio Assessment, Critiques
A subject in the Bachelor of Design (Industrial Design), and Bachelor of Engineering (Product Design)

Aims & Objectives
Using project-based learning, Product Design 1 will incorporate basic engineering sciences of levers, gears and mechanisms to explore creative problem-solving techniques. The subject also aims:

- To develop an understanding of the new product development process and communication skills for product designers.
- To develop an understanding of the safe workshop practices and understanding of machinery operation, including concept foam modelling and model making techniques used to produce high quality visual models.

At the end of this course students will be able to:

- Apply basic engineering principles to solve problems
Subject Details

HDD004  Product Design Communication 1

12.5 Credit Points  •  1 Semester  •  6 Hours  •  Hawthorn; Prahran  •  Prerequisite: Nil

Aims & Objectives

- To develop engineering drawing communication skills and an understanding of engineering drafting standards AS1100.
- To introduce the use of two-dimensional and three-dimensional computer-aided design and drafting techniques.
- To develop skills in digital visualisation using Photoshop and Illustrator and hand visualisation techniques.
- To develop an understanding of the new development process and visual communication skills.

At the end of this course students will be able to:

- Utilise skills in visualisation for use in the development of product design.
- Introduce, develop and explore design methodology in relation to product design.
- Use 2D and 3D CAD engineering communication in product design.
- Enhance manual and digital illustration techniques and further develop visual communication skills.

Content

Students will develop an understanding of engineering drawing communication skills required for product development including 2D and 3D CAD modelling.

HDD005  Product Design Communication 2

12.5 Credit Points  •  1 Semester  •  4 Hours per Week  •  Prahran  •  Prerequisite: Nil

Aims & Objectives

- To explore innovative product designs.
- To develop an understanding of the product development process and creative problem-solving techniques.
- To develop engineering drawing communication techniques and an understanding of engineering drawing standards AS1100.
- To utilise the basic engineering principles and electrical components in product development.
- To develop an understanding of the role of the design professional.

At the end of this course students will be able to:

- Understand new product development methodology.
- Apply skills in visualisation for use in the development of product design.
- Develop and explore creative design methodology in relation to product design.
- Enhance manual and digital illustration techniques and further develop visual communication skills.
- Understand roles and responsibilities of the design professional.

Content

Students will develop an understanding of engineering drawing communication skills required for product development including 2D and 3D CAD modelling.

Using software such as Adobe Photoshop and Adobe Illustrator students will explore digital illustration software and rendering techniques. Hand visualisation and concept sketching will also be covered.

Engineering Drawing and CAD (60%)

- Engineering drawing communication conventions, line weights, view layouts, title blocks.
- Sectional views, dimensioning, orthographic projection, exploded views.
- Understand the menus and applications of 2D CAD and 3D.
- Evolve the 3D CAD modelling and product design skills.
- Engineering components and terminology, welding symbols, screw threads, geometric tolerancing weld and surface texture symbols.

Illustration and Digital Rendering (40%)

- Hand concept rendering and product illustration techniques.
- Digital rendering techniques, use of text, formatting, printing, exploration of a variety of methods of defining texture, gloss, woodgrain and importing of files.
- Scanning and image reproduction.
- Professional presentation layouts and techniques.

Reading Materials

• Application of product semantics and ergonomics
• Product research techniques
• Product development process
• Introduction to ergonomic principles
• Introduction to engineering analysis and testing
• Further development of visual and oral presentation skills

Reading Materials
Handouts
Online journal articles via database.

HDD006  Digital Technology 3
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 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 the CAD software packages Solidworks and 3D Studio Max.
Strong 2D CAD skills will be focused on in Solidworks, with the methodologies of 3D digital modelling explored in 3D Studio Max including: Shelling, materials, lighting, cameras, file conversion, and file exchange.
The basic understanding and implementation of these programs will be applied and employed 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.

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 within the exhibition 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.

HID000  IBL
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 Faculty 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.

Reading Materials

HDID231  Manufacturing Technology 3
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Assessment: Assignments, Class presentations, Examinations
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 specialist 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, including:
• Plastics Technology and associated processes and materials including: Injection Moulding, Blow Moulding, Rotational Moulding, Vacuum Forming, Composites.
• Metal Technology and associated processes and materials including: Die casting, sacrificial casting, Pressure Forming, Welding, Metal types, Coating of metals.

The focus will be on the principles and processes specific to the area of material, and the basic properties when designing with these materials.

**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)

A subject in the Bachelor of Design (Industrial Design).

**Aims & Objectives**

• To further explore the principals 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: in class presentations and final exam

A subject in the Bachelor of Design (Industrial Design).

**Aims & Objectives**

• To focus on various manufacturing principles and processes that may compliment projects in the various design studios.
• Students will be investigating a number of manufacturing areas and techniques.

**Content**

A number of areas will be focused upon during a program of lectures, tutorials and industry visits, including:

- Timbers, veneers, and laminates
- Glass
- Rapid prototyping
- Eco friendly materials and manufacture
- Determining factors for materials and manufacture selection

**Reading Materials**

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 • 3 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.

**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, Projects(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.

**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.

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 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.

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, Projects)
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.

HDID472 ID Hons 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 workshop 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, Projects)
A subject in the Bachelor of Design (Industrial Design).

Aims & Objectives
- To enhance and develop the quality of professional design 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, if
  where appropriate, marketing) to a highly professional level.

HDID482 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, Projects)
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, if
  where appropriate, marketing) to a highly professional level.
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 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.

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 Faculty 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
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.

Content
• Introduction to architectural drawing: orthographic projection, (plans/ elevations/sections/details) and perspective projection.
• Photography: basic techniques and uses as a design tool.
• M odelling: basic construction and uses of models as a tool for communicating and developing design ideas.
• M anual drafting and drawing board skills.
• Introduction to the stages of an interior design project and corresponding documentation requirements: schematic, design development, contract documentation and administration.

Reading Materials
Ching, F.D.K., Form, Space and Order.
Hartman, R., Graphics for Designers.

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, I.D., and Monument.

HDINTD112 Construction Technology 1
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 an introduction to 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 instill, 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.

Reading Materials
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.

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.

Reading Materials
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, I.D., 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 will be delivered in conjunction with Building Construction and will entail delivery by the use of instruction, visual examples, field studies and practical drawing work related to building projects.

Building Construction: 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 instill, 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: Materials utilised within the construction industry will be discussed.

Reading Materials
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.

Reading Materials
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.
HDINTD232 Digital Technology 3
12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Lectures, Demonstrations, Group Tutorials • Assessment: Class Exercises, Continuous, Projects
A subject in the Bachelor of Design (Interior 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
Electronic media: Through a combination of class exercises, tutorials and projects, students will learn to construct a three-dimensional architectural model. Methodologies of digital concept development will be covered, including 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.
Reading Materials
Australian Standards Association, Australian Drafting Standard AS 1100.
Heppler, O.E., Interior Design Fundamentals.
Heppler, O.E. & Wallach, P.H., Architectural Drafting and Design.
Lockhard, W. K., Drawing as Means to Architecture
Metric Handbook.
Panero, J., & Zeniki, 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: Projects
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.
HDINTD243 Digital Technology 4
12.5 Credit Points • 1 Semester • 3 Hours per Week • Prerequisite: Nil • Teaching methods: Tutorials, Demonstrations • Assessment: Continuous, Projects
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.
At the conclusion of the subject students will have completed the sophisticated presentation of one or more of their own projects, forming the basis for production of their folio. Students will be expected to demonstrate a high level of competency in the technical aspects of the software. In addition to technical skills, students will be encouraged to extend conceptual skills through the cultivation of a critical position to the notions of representation and its place in the generation of a design process.
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.

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.
Reading Materials
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.

HDINTD352 Professional Context 5
12.5 Credit Points • 1 Semester • 3 Hours per Week • Prerequisite: 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.

HDINTD361  Design Project 6

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 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.

Content

Students are required to produce a specified outcome that acts 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. Attendance to a one-hour weekly lecture series will be recommended for all students within this subject.

HDINTD363  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, Case Studies, Projects(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.

HDINTD364  Research Project

12.5 Credit Points  • 12 Weeks  • 3 Hours per Week  • Prahran  • Prerequisite: Nil  •
Assessment: Submission of set tutorials exercises, in class contribution, And sit visit reports. The portfolio of lecture material and reports will form part of the submission

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.

Time allotment to attend the lectures is included in the contact Hours for this subject.

HDINTD471  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. Students will integrate design and technology and engage in entrepreneurial and research-based design projects.  • Assessment: Class Presentations, Projects(s)

A subject in the Bachelor of Design (Hons) (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.
HDINTD472

INTD Hons 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 (Hons) (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 HDINTD482.

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 (Hons) (Interior 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.

HDINTD481INTD Studio Practice 8

25 Credit Points • 1 Semester • 7 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Projects will generally be conducted within a 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 engage in entrepreneurial and research-based design projects. • Assessment: Folio Presentations, Project(s)

A subject in the Bachelor of Design (Hons) (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.

HDINTD482INTD Hons Research 8

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 (Hons) (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
- 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.

HDINTD483INTD 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 (Hons) (Interior 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 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

The following aspects will be covered as appropriate: client liaison; taking a brief; contact reporting; supervision and coordination of suppliers; preparation of...
The role of technology in the realisation of contemporary design projects and Design's strategic role in business.

Aims & Objectives
This subject offers a program of experiential learning in advanced practice in multimedia design. By participating in a sequence of design projects students gain enhanced knowledge and understanding of:

- Design methods, processes and professional practice in the context of contemporary multimedia design.
- Design's strategic role in business.
- The role of technology in the realisation of contemporary design projects and attainment of advanced software knowledge affording students a heightened awareness of the creative and communicative possibilities in multimedia design.
- Applied design research methods, especially socio-demographics and interdisciplinary methods for the development of user-centred design.

Projects will be undertaken in the Faculty of Design's Design Centre. The Design Centre is a working design studio that develops innovative design projects, especially where innovation is supported by applied design research. Projects may include both commissioned projects and self-determined projects.

Content
Design projects are the context through which students are informed about:

- The creative methods and strategies used in Multimedia Design practice.
- Best practice client management processes, including project and time management skills, proposal writing, timelines, quoting and invoicing, protocols for meetings and presentations, and methods for describing the design process and design outcomes to clients.
- Internal management of a design studio, including ways of managing work flow, organisational structures, teamwork, studio forms, etc.
- Industry standard software computer applications and techniques are investigated and utilised for the production of design content for convergent media. Design research methods for applied practice.

HDMAN356HK Design and Project Management

12.5 Credit Points • 1 Semester • 3 Hours per Week • Prerequisite: Nil • 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. • Assessment: Research Paper, Reflection Papers

A subject in the Bachelor of Design (Communication Design). Professional issues associated with the design process will be covered. Issues will include: Design ethics, Confidentiality agreements, proposals, Project management, time management.

Reading Materials
TBA
• 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 e-marketing, CRM and eCommerce models.
• Strategic management of innovation and change: integrating technology, e-marketing and eCommerce processes.

Reading Materials
Davis, SM. & Meyer, C 1998, Blur: The Speed of Change in the Connected Economy, Addison-Wesley, M assachusetts.

In addition students will be directed to relevant websites and encouraged to research other online resources.

HDMAN366 Managing Design
12.5 Credit Points • 1 Semester • 3 Hours per Week • Prahran • Prerequisite: Nil • 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. • Assessment: Case Studies, Class presentations
A subject in the Bachelor of Design in Communication Design, Industrial Design, Interior Design, Multimedia Design and Bachelor of Film & Television

Aims & Objectives
To empower students with an understanding of:
• How design impacts upon the business community.
• How design is managed within a variety of industry sectors.

Content
• The role of design as a business tool
• Design and the greater business community
• M arketin g design
• T he role of designers as entrepreneurs.

Reading Materials
TBA

HDMAN366HK Managing Design
12.5 Credit Points • 1 Semester • 3 Hours per Week • External Venue • Prerequisite: Nil • 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. • Assessment: Case Studies, Class presentations
A subject in the Bachelor of Design (Communication Design).

Aims & Objectives
To empower students with an understanding of:
• How design impacts upon the business community.
• How design is managed within a variety of industry sectors.

Content
• The role of design as a business tool
• Design and the greater business community
• M arkitng design
• T he role of designers as entrepreneurs.

Reading Materials
TBA

HDMDO00 IBL
37.5 Credit Points • 24 Weeks • 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 (Multimedia Design).

Aims & Objectives
• Generally: to provide the 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 Faculty of Design in cooperation with employers.

HDMDO11 Multimedia Design Technology
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, Projects
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 develop an understanding of the animation process and relevant software.
• To introduce the fundamental aspects of the content, function and context of visual communication as applied to time-based media.

Content
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 they’ll need for further studies.

Reading Materials
M urbridge, E., The Human Figure in Motion and Animals in Motion, Dover Press.
Selected websites that are updated each semester.

HDMDO12 Multimedia Design Technology 2
37.5 Credit Points • 24 Weeks • Prahran • Prerequisite: Nil • Teaching methods: Projects will be conducted in a studio environment, on location, student consultation/discussion, demonstrations and critiques. • Assessment: Continuous, Projects
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.

Reading Materials
Selected websites that are updated each semester.

HMD231 Design Project Series 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, Projects.
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 storyboard, 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 handheld 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.

Reading Materials
Bellantoni, J., Type in Motion.

HMD232 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, Projects.
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 M.X. Technical projects in this unit will directly relate to the Design Project series and include an online component.

Reading Materials
Curran, S., Motion Graphics: Graphic Design for Broadcast and Film, Rockport, 2000.
Bellantoni, J., Type in Motion.

HMD233 Typographic Design for Print
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: 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 further 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.

Content
This subject consists of a series of tutorials and projects through which the student will investigate aspects of typographic design for screen and print. The projects will enable students to investigate production for print.

Reading Materials
Bellantoni, J., Type in Motion.
Nielsen, J., Designing Web Usability.
Selected websites that are updated each semester.

HMD241 Design Project Series 4
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, Projects.
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 content, function and context of visual communication.
- 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 a weekly one-hour lecture (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 allotment to attend the lectures is included in the contact hours for this subject.
**Reading Materials**
Bellantoni, J., *Type in Motion.*
Nielson, J., Designing Web Usability.
Selected websites that are updated each semester.

**HMD242 Multimedia Design Technology 4**
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 develop knowledge and skills in technology for Web-based work.
- Exploration of the World Wide Web as a communication medium.
- 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.

**Reading Materials**
Nielson, J., Designing Web Usability.
Selected websites that are updated each semester.

**HMD243 Typographic Design for Screen**
12.5 Credit Points  • 12 weeks  • 3 Hours per Week • Prahran  • Prerequisite: Nil  • Teaching methods: Projects will be conducted in a studio environment, on location, through seminars, student consultation/discussion, demonstrations and critiques.  • Assessment: Projects will be appraised progressively.
A subject in the Bachelor of Design (Multimedia Design), Bachelor of Film and Television and Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Computer Science and Software are Engineering)

**Aims & Objectives**
The aim of this elective is 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 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.

**Reading Materials**
Bellantoni, J., *Type in Motion.*

**HMD351 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, 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.

**Reading Materials**
Bellantoni, J., *Type in Motion.*
Flips 5. by IDN.

**HMD352 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, sequencing 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.

**Reading Materials**
Reading lists will vary depending on students individual studies. Below is some suggested reading:
HDM335 Contextual Studies 5

12.5 Credit Points • 12 weeks • 3 Hours per Week • Prahran • Prerequisite: Successful completion of semester 3 and 4 requirements. • Teaching methods: Research, Seminars, Student Consultation/Discussion, Demonstrations and Critiques. • Assessment: Projects will be appraised progressively.

A subject in the Bachelor of Design (Multimedia Design) and Bachelor of Film and Television

Aims & Objectives

• To further develop an appreciation of multimedia theory.
• To investigate the multimedia environment: e-commerce/business studies, multimedia environment: television studies.
• To train students in professional design practice.

Content

Students investigate an area of their choice within the multimedia framework.

Reading Materials
Deny, M., Flame Wars: The Discourse of Cyberculture.

HDM361 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, Project(s)

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.

Reading Materials
Curran, S., Motion Graphics: Graphic Design for Broadcast and Film, 2000.
Hall, P., Pause: 59 Minutes of Motion Graphics. Flips 5, by IDN.

HDM362 Individual Research Project 6

12.5 Credit Points • 1 Semester • 4 Hours per Week • Prahran • Prerequisite: NIL • Teaching methods: Projects will be conducted in a studio environment, student consultation/discussion, demonstrations and critiques. • Assessment: Continuous, Project(s)

A subject in the Bachelor of Design (Multimedia Design).

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.

Reading Materials
Reading lists will vary depending on students individual studies. Below is some suggested reading:
Curran, S., Motion Graphics: Graphic Design for Broadcast and Film.
Hall, P., Pause: 59 Minutes of Motion Graphics.

HDM363 Contextual Studies 6

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 an elective subject in the Bachelor of Film and Television.

Aims & Objectives

To further develop an appreciation of multimedia theory and to investigate the multimedia environment:
• eCommerce/business studies
• M edia studies
• Multimedia design context studies
• Interface/usability studies

Content

Students investigate an area of their choice within the multimedia framework.

Reading Materials
Curran, S., Motion Graphics: Graphic Design for Broadcast and Film.
Hall, P., Pause: 59 Minutes of Motion Graphics.
Reading Materials
Van Aar, P., Film Design (Basel School of Design), Van Nostrand Reinhold, NY, 1983.

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 (Hons) (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.

Reading Materials

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 (Hons) (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 video 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.
A subject in the Bachelor of Engineering (Product Design Engineering).

**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. 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.

**Reading Materials**


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**HMD483 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 (Hons) (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.

**Reading Materials**


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**HDPD211 Product Design 4**

25 Credit Points • 1 Semester • 108 Hours • Hawthorn/Prahran • Prerequisite: HDD003, HDD004, HDD005 • 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, Projects, 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

**Reading Materials**


Students will be referred to reference texts depending on specific project content.
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
• 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.

Reading Materials

Students will be referred to reference texts depending on specific project content.

HDPD311 Product Design 5
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn; Prahran • Prerequisite: HDPD221

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 processes 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
• 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.

Reading Materials

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

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 professionals and ethical issues.
• Engineering specifications, 3D CAD data, Engineering drawings, assembly drawings, ergonomic analysis.
• Management 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.

FEM CAD (12.5%)
• FEM 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.

Reading Materials

Students will be referred to reference texts depending on specific project content.

HDPD500 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: Projects, Critiques, Presentations, Assessment Panels.

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 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.

Reading Materials
Mudge, E, The Human Figure in Motion and Animals in Motion, Dover Publishers.
Siegel, D., Creating Killer Web Sites, Hayden Books, 1996

Selected websites that are updated each semester.

HDPD511 Product Design 7
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn; Prahran • Prerequisite: HDPD321 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

1. Industry-initiated design projects incorporating the engineering sciences of Design for Manufacture and Manufacturing Technology 2.
2. Research and develop products for advanced technology in the manufacturing industry.
3. Design for recycling and ecologically sustainable products
5. Reverse engineering techniques.
6. Use of computer methods for efficient product and tooling design.
7. Project presentation to peers and industry professionals.
8. Design and detailing of plastic components to AS1100 engineering drawing standards.
9. Apply CAE analysis to component assemblies.
10. Evaluation of rapid prototyping systems.

Reading Materials
Huang, GQ, Design for X: Concurrent Engineering Imperatives, Chapman & Hall, 1996.

Students will be referred to reference texts depending on specific project content.

HDPD512 Professional Project
12.5 Credit Points • 1 Semesters • 48 Hours • Hawthorn; Prahran • Prerequisite: HDPD321 • Teaching methods: Tutorials: Marketing and Engineering - 12 hours; Consultation - 36 hours; Site and Industrial visit as required; Web-based subject presence (Blackboard); Research materials and supporting project materials will be provided online. Projects are undertaken under consultation with a design and engineering supervisor who meets regularly with the students to discuss and assure progress. • Assessment: Assignments, Final Report Presentation, Project Progress, Prototype, Critiques, Peer Discussion.

A subject in the Bachelor of Engineering (Product Design Engineering).

Aims & Objectives
The Professional Project is a student initiated research project and aims to develop student's research, project planning, design and engineering skills to a professional level while maintaining 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 in materials and manufacturing technology. Customer needs, ergonomics, intellectual property, market evaluation and existing products and culminate in a research report.

At the end of this course students will be able to:
• Apply all the engineering sciences and design methodologies experienced throughout the course.
• Implement a detailed project plan for the product development process.
• Critically research and reference advanced areas in materials and manufacturing technology.
• Develop skills in planning and executing an innovative project.
• Develop skills in market and literature research and intellectual property.
• Develop skills in the documentation of a major research report.
• Demonstrate the ability to integrate engineering and product design knowledge and skills acquired during the course.
Subject Details

HDPD521 Product Design 8

12.5 Credit Points • 1 Semester • 60 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:

- Demonstrate the ability to communicate by presenting a professional seminar.
- Design, management and construction of exhibition design.
- Application of rapid prototyping systems.
- Application of product illustration and digital rendering techniques to a professional level.

Reading Materials


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: This is an individual research project and will require regular progress reports and de briefing with design and engineering staff during the semester. Tutorial and consultation sessions directed by engineering and design academics will deliver information to assist students with various aspects of their project as required. Tutorials - 48 hours; Site and industrial visit; 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 manner while maintaining 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 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 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

Reading Materials


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  ·  6 Hours per Week  ·  Hawthorn  ·  Prerequisite: Nil

- Teaching methods: Lectures (12 hrs); Tutorials (24 hrs); Laboratories (36 hrs); Flexible Delivery - Assessment: Professional journal (20%); Interview (10%); Professional Presentation (10%); Professional Report (10%); Sketching Test (15%); CAD Test (15%); Drawing Portfolio (20%).

A subject in the Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Business, Bachelor of Engineering (Biotechnology)/Bachelor of Science (Biotechnology), Bachelor of Engineering (Civil), Bachelor of Engineering (Civil)/Bachelor of Business, Bachelor of Engineering (Electronics & Computer Systems).

**Aims & Objectives**

- 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 ability 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**

To be advised.

**Recommended Reading**


**HES1105 Civil Engineering Project**

12.5 Credit Points  ·  1 Semester  ·  60 Hours  ·  Hawthorn  ·  Prerequisite: Nil

- Teaching methods: Briefing Sessions - Lectures (12 hrs); Design Sessions - Tutorials (48 hrs); Consultations with Experts and Technical Personnel (up to 5 hrs per group of 4 students); Flexible Delivery - Assessment: Students will be required to communicate once a week with the subject coordinator via e-mail and report on the expected outcomes. Throughout the course students will require to keep a Design file which will contain: a copy of weekly emails to the subject coordinator: a notebook containing notes taken during design briefings and design sessions; each group responsible for a particular part of the project will be required to coordinate and develop an integrated part of a Scaled Model representing the design; at the end of the project students will be required to submit a Self Assessment reporting on their and other group members contribution to the project design and proposed construction method: at the end of the project students will be required to compile a complete set of design documentation (one per group) and present the project to the project stakeholders.

A subject in the Bachelor of Engineering (Civil) and Bachelor of Engineering (Civil) / Bachelor of Business.

**Aims & Objectives**

- 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 solutions
- 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

**Reading Materials**
There are no prescribed texts, though the early lectures will introduce students to a wide range of information resources available through the library and the procedures for accessing that information. 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 hrs), Tutorials (12 hrs), Laboratory (6 hrs), Class Tests (8 hrs)  Assessment: Examinations (80%), Lab Reports (5%), Practical Examination (15%).

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), 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 (Computing 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 in allowable stress vs. Ultimate stress.
- Internal Loadings – Shear Force and Bending Moment Diagrams (30%)
  - Analysis of point loads, uniformly distributed loads, and non-uniformly distributed loads.
  - Internal Actions of Beams: Axial Forces, Shear Forces and Bending Moments.
  - Axial Force, Shear Force and Bending Moment Diagrams.
  - Relationships between loads, shear and bending moments.
- Section Properties of Structural Members (10%)  Location of Centroids (Centre of Gravity or Area) for Composite Bodies/Areas
  - Second Moments of Area (Moments of Inertia) by 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.

**HES1130 Materials and Processes**
12.5 Credit Points  1 Semester  60 Hours  Hawthorn  Prerequisite: Nil  Teaching methods: Lectures (36 hrs), Tutorials (12 hrs), Laboratory (6 hrs), Oral Presentations/Assignments (4 hrs); Web-based subject presence - Assessment: Examination (75%), Laboratory submission (5%), Laboratory quizzes (10%), Online Lecture Quizzes (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 (Computing 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 designing the structure of a material to achieve a predetermined set of properties.
- To demonstrate and explore through the use of practical laboratory experience the structure/property relations of materials and their effect on performance.
- To provide students with the opportunity to work in small groups and carry out a research project in which they determine the structure/property relations of materials used in well known products, and present their findings in peer reviewed oral presentations.
- To make students aware of failure in materials and thereby develop an understanding of the principles of materials selection.
- Focus student awareness on the fact that many materials are derived from non-renewable sources and suffer from degradation in many forms in their application. Hence, bring students to the realisation that materials and technology can cost-effectively contribute to building an ecologically friendly and sustainable environment.
- Excite students in the knowledge that advances in modern materials are playing critical roles in many new technologies.

At the completion of this 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

Materials selection strategies: Typical properties, properties by class of material.

Textbook

References

HES1300 Robotics & Mechatronics Project 1

12.5 Credit Points - 1 Semester - 72 Hours - Hawthorn - Prerequisite: Nil
Teaching methods: Lectures: conducted by the subject coordinator to cover the programming topics and their relation to the engineering profession; Laboratory: 12 x 2 hr computer programming laboratories and 12 x 3 hr technical drawing laboratories; Assignments: students will be given scheduled time to work on assessable assignments; Web-based subject presence (Blackboard); 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).

Reading Materials

HES1305 Robotics and Mechatronics Project 2

12.5 Credit Points - 1 Semester - 100 Hours - Hawthorn - Prerequisite: HES1300
Teaching methods: Lectures: conducted by the subject coordinator to cover the programming topics and their relation to the engineering profession; Laboratory:
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 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
- To provide students with the opportunity to further develop their 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 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 project
- To provide student with opportunity to practice project management
- To provide student with opportunity to practice programming skills
- To provide student with opportunity to increase their understanding of sensors
- To provide student with opportunity to practice structural programming
- To provide student with opportunity to understand computer interfacing of different type sensors
- To provide student with hands-on skill for machining and welding

At the end of this course students will be able to:

- Link and to use their existing knowledge for engineering purposes
- Demonstrate understanding of current challenges facing robotics and mechatronics engineering discipline
- Demonstrate understanding of history of a their 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 principals in behaviour programming

Technical Communication:
- History, current challenges and future of a particular engineering discipline
- History, current challenges and future trends of an engineering education of a particular branch of engineering
- Fundamentals of engineering communication (graphical, written and oral)
- Interview fundamental and functions
- Engineering projects phases and stakeholders
- Fundamentals of engineering design
- Fundamentals of project management
- Problem solving process and strategies
- Professionalism in engineering and professional associations
- Engineering ethics
- Social and environmental aspects of engineering activities
- Sustainable development

Machining workshop:
- 40 hours of practical machining and welding workshop

Reading Materials
- Mackay, H, Why Don’t People Listen, Australia, Pan, 1994.
HES1500 Introduction to Chemistry (Chemistry 1)

12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Tutorials, Practical Classes, Mathematical Competency, Web Based Subject Presence • Assessment: Practical Work 15%, Practical Examination 5%, Contribution to online group discussion 5%, Tutorial tests 15%, Math's competency Test 5%, End of Semester Exam 55%. All of these may be examined by a combination of short tests, Online discussion forums, Self paced assessment tasks, Practical Reports, And an end of Semester Exam.

A subject in the Bachelor of Health Science (Public and Environmental Health), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Business, Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives

• To provide a thorough introduction to the basic concepts of chemistry necessary for biochemical and biotechnology studies.
• To provide an understanding of the basic structure of elements and compounds and how this determines their interaction with each other.
• To study the various reactions elements and compounds undergo.
• To establish a thorough understanding of the quantitative aspects of chemical reactions.
• To study how useful electrical energy can be obtained from chemical reactions.
• To introduce basic practical skills for the handling and analysis of chemicals.
• To establish the importance of chemical safety and precautions in the chemical laboratory and other hazardous environments.

Stoichiometry and Elementary Chemistry Skills:

• Demonstrate an ability to name and write the symbols of elements, and the names and formulae of various molecular and ionic compounds.
• Use chemical equations to calculate relative amounts of reactants and products and express the result in various forms, i.e. mass or mole of a reactant or product, % purity of product, identify the limiting and excess reagents.
• Using calculations predict the solubility of salts in a given reaction.
• Perform calculations associated with practical work, e.g. dilutions, backtitrations etc.
• Perform calculations with aqueous and gaseous species in terms of volumes and pressures, using equations based around the Ideal Gas Law.

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. M ajor 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.

Reading Materials


HES1500 Practical Manual, Swinburne Press.

Further detailed reading is available in the HES1500 Subject Description document available from your tutor and contained within the subject website: http://www.mysubjects.swin.edu.au

HES1500E Introduction to Chemistry

12.5 Credit Points • 1 Semester • 60 Hours • 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 subject: Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Business, Bachelor of Science (Psychology/Biochemistry), 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 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. 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.

Reading Materials


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, Web Based Subject Presence • Assessment: Examinations (Physical & Organic) 50%, Practical Report (25%), Analytical Test (25%)

A subject in the Bachelor of Health Science (Public and Environmental Health), Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Business, Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives

• 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
Subject Details

- 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.
- Appreciate the requirement for safety in the laboratory and duty of care for fellow students.

Content
- Organic Chemistry: A basic introduction to organic chemistry – the classes and structure of organic chemicals including the importance of functional groups.
- Nomenclature (naming of simple and complex organic molecules).
- An introduction to reaction mechanisms involving organic chemicals and including ways to categorise those reactions.
- Basic techniques in organic chemistry, including testing for functional groups.
- Analytical chemistry: Quantitative analysis of chemical using acid-base titrations, potentiometric and complexometric titrations and gravimetric analysis.
- How to obtain good precision in chemical analysis.
- Physical and Polymer Chemistry: A general introduction to polymers - their chemical structure and physical properties.
- Composition and formation of biological polymers and their structural properties.
- A general introduction to physical chemistry.
- Enthalpy and the first law of thermodynamics.
- An introduction to chemical kinetics.

Reading Materials

Your textbook from first semester (HES1500) should be retained. Those who do not have this textbook 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 bookshop. 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, Practical Classes, Student based learning, Web Based Subject Presence · Assessment: Assignment (5%) Final examination (50%) Practical Reports (20%) Mid Semester Test (25%)

A subject in the Bachelor of Science (Biotechnology), Bachelor of Science (Psychology/Biochemistry), Bachelor of Science (Biochemistry).

Aims & Objectives

- To build upon, and reinforce, the knowledge gained in HES1500 (Introduction to Chemistry).
- To introduce students to real world examples of the use of chemistry.
- To strengthen the areas of organic, physical and inorganic chemistry.
- To provide a strong basis for later applications and extensions of chemistry to real world situations.

At the end of this subject students will be able to:
- To illustrate some of the scientific basis behind the choice consumers have when obtaining common household products.
- To provide a basic understanding of the science involved in how many of those products work.
- Demonstrate the capacity to undertake specific laboratory experimentation designed to chemically analyse consumer products.

Content

Agricultural Products and Soil Chemistry:
- Chemical and ‘organic’ fertilisers, their analysis, content, purpose and use.
- The N:P:K ratio in fertilisers.
- The structure of clay and sand and their distinction based on particle size.
- The role of Ca2+ in clay structure.
- The importance of nutrient adsorption onto soils for plant uptake. pH measurement and significance in soils.
- Pesticides and herbicides in the environment: an introduction.

Advertising and Mis-advertising of Consumer Products:
- Misleading advertising in the supermarket.
- How to compare products.
- The mathematics involved in consumer choice.
- Choosing ‘healthy’ products on the basis of their chemical constituents, and the science behind those choices.

Cleaning Products:
- How do common surfactants work?
- What are the important ingredients in soap powder, pool chlorine etc., and what are their roles?
- Formulation of household cleaners.

Consumer Guide to Chemicals:
- What are the chemicals found in common materials and products?
- Food, beverage, medical, pharmaceutical, cosmetic and paper applications.
- The chemistry of swimming pools.

Textbook

No required textbook.

Recommended Reading
HES1610 Concepts of Biology

12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Practical Classes, Web Based Subject Presence • Assessment: Written Test (30%), Practical Reports (20%), Written Assignments (10%) • Final Examination (40%) • A subject in the Bachelor of Health Science (Public and Environmental Health), Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Business, Bachelor of Science (Psychology)/Biochemistry.

Aims & Objectives

This subject aims to:

- To develop an understanding of the fundamentals of biology.
- To gain an understanding of the structure and function of living organisms, their life processes and diversity.
- To provide a strong basis for later applications and extensions of this knowledge in various fields, including biotechnology, human biology and the environment.

At the end of this subject students will be able to:

- Demonstrate an understanding of the processes of scientific experimentation, querying and critical analysis, and the significance of these.
- Demonstrate an understanding of the major types of living organisms and the characteristics and fundamental differences in their body plans/organisation and functions.
- Demonstrate an understanding of the various types of microscopic life forms.
- Demonstrate an understanding of the structures and functions of the major cell and tissue types of higher animals, particularly humans.
- Demonstrate an understanding of the structures and functions of the major cell and tissue types of higher plants.
- Develop a solid understanding of the fundamentals of genetics and reproduction.
- Apply the knowledge of genetics to addressing genetic problems in humans and other organisms, such as pedigree analysis and disease prediction.
- Demonstrate an understanding of the structure, properties and central functions of DNA as the genetic material.
- Gain an introduction to molecular biology/molecular genetics and biotechnology.
- Understand the basic principles of the key biochemical processes utilised by living organisms for acquiring and utilising energy.
- Demonstrate the use of light microscopes in a competent fashion, for investigations of microorganisms, and various animal, human and plant cells and tissues.
- Demonstrate hands-on practical skills in the above areas.
- Appreciate the need for safely precautions in a lab environment.

Content

- The diversity of life: characteristics of living organisms, the domains and kingdoms of organisms and their characteristics.
- The methods of science: methods of scientific investigation, experimental design.
- The molecules of life: structure and functions of the major types of molecules that make up the living systems: carbohydrates, fats and lipids, proteins, nucleic acids. Cells as the fundamental unit of life: the structure and functions of prokaryotic and eukaryotic cells. Structures and roles of intracellular organelles.
- The major cell and tissue types in animals, particularly humans, their organisation and functions.
- The major cell and tissue types in plants, their organisation and functions.
- Cell replication: processes of mitosis and meiosis, the significance of each process.
- Introduction to cell cycle and its regulation.
- Fundamentals of genetics: Mendelian genetics and the extensions/exceptions to it, human genetics, applications of genetic principles: problem solving in plants, animals, humans, pedigrees analysis, disease prediction, introduction to linkage.
- Fundamentals of the biochemical processes of obtaining and utilising energy, energy storage molecules; enzymes as biochemical catalysts.

Textbook

Campbell, NA & Reece, JB, Biology, 4th edn, Benjamin Cummings, USA, 2002.

Other reading materials:

- Lecture notes (provided via Blackboard).
- Laboratory manual (to be purchased from the University bookshop).

HES1616 Concepts of Biotechnology

12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: Nil but HES1610 (Concepts of Biology) is highly recommended • Teaching methods: Lectures, Practical Classes, Web Based Subject Presence • Assessment: Written Tests (25%), Assignment (10%), Practical Reports (20%), Final examination (45%) • A subject in the Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Business, Bachelor of Science (Psychology)/Biochemistry.

Aims & Objectives

The subject aims to provide:

- An understanding of the basic principles of metabolic processes within the cell and how these processes can be harnessed for biotechnology.
- An understanding of the central role of the genetic material, DNA, in the flow of genetic information in the cell and in influencing the structural and functional characteristics of organisms.
- An understanding of some of the basic principles of manipulation of DNA for useful applications in a number of areas such as the environment, medicine and agriculture.
- Basic knowledge regarding the structure and properties of micro-organisms, including those of clinical, environmental and industrial importance.
- A variety of laboratory exercises where students can apply their theoretical knowledge to practical situations and demonstrations, in the above areas.

At the end of this subject students will be able to:

- Demonstrate an understanding of the major mechanisms of metabolism, energy exchanges and homeostasis in cells.
- Recognise the linkage between the structures, chemical properties and chemical processes of certain molecules and macromolecules, and their roles in cells and biological processes, and in certain diseases.
- Gain an introduction to molecular biology/biotechnology.
- Demonstrate an understanding of the basic principles of various techniques of genetic analysis and manipulation and biotechnology.
- Gain an understanding of the applications of biotechnology in diverse fields such as agriculture, medicine and the environment and the significance of these developments.
- Demonstrate an understanding of some of the social, ethical and legal issues associated with some aspects of biotechnology.
- Demonstrate an understanding of the diversity of micro-organisms and their characteristic properties, growth and handling.
- Demonstrate an understanding of their significance in infectious diseases, environmental processes and industrial applications.
- Demonstrate hands-on practical skills in the above areas.
- Appreciate the need for safely precautions in a lab environment.
- Work co-operatively.
- Record scientific observations correctly and interpret these honestly.
Subject Details

Subject Details

HES1626 Professional Skills for Biotechnologists

12.5 Credit Points  • 1 Semester  •  60 Hours  • Hawthorn  • Prerequisite: Nil

Teaching methods: Lectures, Tutorials, Discussion Session, Web Based Presence • Assessment: Written Assignments (60%), Oral Presentations (20%), Workshops and Discussions (20%).

A subject in the Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Science (Biotechnology)/Biochemistry, Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology)/Biochemistry/Bachelor of Business.

Aims & Objectives

The subject aims to provide:

• An understanding of some of the basic techniques of biotechnology
• An understanding of the applications of biotechnology in numerous areas such as agriculture, the environment, animal health, human health and various industries.
• An introduction to some of the ethical, social and scientific problems associated with the above technologies.
• Relevant practical exercises in the above areas.

Textbook


Other reading materials:

Lecture notes (provided via Blackboard)

Laboratory manual (to be purchased from the University bookshop)

Other reference material, select videos, Web links etc.

Content

• Overview of main types of energy transformations within the cell, role of enzymes and their action, fates of metabolites. Application of enzymes to biotechnology processes.
• Microorganisms: overview of broad types of bacteria, viruses, protists and other microorganisms. Growth and handling. Structure, function, modes of replication or transmission of selected bacteria, viruses.
• Roles of microorganisms in disease, role in environmental cycles, industrial applications of microorganisms, use of microorganisms in biotechnology.
• Brief overview of classical genetics, Mendelian genetics and variations.
• Brief overview of DNA structure, the flow of genetic information, DNA replication, gene transcription, protein translation.
• Principles of major molecular biology and genetic engineering techniques, including restriction enzymes and their uses, major types of cloning vectors, construction of libraries, Southern and Northern blotting, hybridisation, PCR, DNA typing.
• Applications of above techniques in human health and welfare, medicine, agriculture and the environment. Introduction to the human genome project, gene therapy, molecular diagnostics, forensics, creation and uses of transgenic plants and animals, animal cloning, use of micro-organisms in industrial biotechnology.
• Introduction to some of the ethical, legal, and social issues and scientific problems associated with the above technologies.

The current subject content is as follows:

• Participating in a workshop on literature search, in order to gain the skills in conducting various types of search (e.g. searching for literature on a specific topic, or in a specific journal, or by a specific author; searching catalogues of other libraries), accessing the information in peer-reviewed scientific journals, various databases and websites.
• Literature search activity. Conducting a mini literature search on a topic of the student's choice within the wide field of biotechnology, using the above skills. Submitting the results in the form of a bibliographically correct and complete list, a list of the sources, databases or websites used to access these publications and the abstracts of the articles.
• Training in writing of laboratory reports. Writing a formal laboratory report of a practical undertaken by the student for another subject (such as biotechnology or chemistry). The students are to take careful notes during this practical and submit a formal report addressing the aims of the practical, the materials and methods used, the results obtained and any problems encountered, and the interpretation and discussion of the results (including any problems encountered and suggesting solutions).
• Written assignment on an application of biotechnology. Choosing one application of biotechnology (not a lab technique by itself), conducting a literature survey and collecting a small, manageable number of references. Then submitting an assignment covering the aims of the technology, its relevance and significance, some details of the techniques/methodology/experimental design, and the current applications or the future potential of the technology.
• Critical analysis of a research article. Analysing a full journal article, considering its good points and not-so-good points (within the framework discussed in the tutorials) in terms of experimental design, validity of statements etc.
• Oral presentation. A brief presentation on a select topic in biotechnology, using PowerPoint (or a similar program).
• The lectures and tutorial session(s) will cover all the above aspects, i.e., examples of the diverse applications of biotechnology, collection and evaluation of scientific research, experimental design, lab reports, written assignments, oral presentations, discussions of the students' chosen topics.

Reading Materials

Lecture notes (provided via Blackboard)

Other reference material, select videos, Web links etc.

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, recognizing conflict situations, methods of interpersonal conflict resolution, assertiveness skills, interpersonal negotiation skills, and stress management. Group and individual exercises will allow students to put these principles into practice to develop skills that will be of practical use in the workplace and community environments.
- A review of major theoretical and ideological approaches to social policy, and introduction to key policy issues, such as problem identification, policy implementation, evaluation and monitoring, and an introduction to Australian health policy.
- The history of public health in Victoria and the impact of environmental health on the prevention of spread of disease.
- The professional role and practice of the environmental health officer in government and industry. Career opportunities and development. Concepts of environmental health.
- The administrative structure and role of state and local government agencies involved in environmental health and environmental protection.
- An overview of appropriate legislation, policies and codes.

Reading Materials

HES1710 Philosophy and Practice of Public and Environmental Health
12.5 Credit Points  •  1 Semester  •  3 Hours per Week  •  Hawthorn  •  Prerequisite: Nil
- Teaching methods: Lectures, Group and Individual Exercises  •  Assessment: Assignments 60%, Tests 40%
A subject in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
- To develop an understanding of the major approaches to Australian health policy development and the history of public and environmental health.
- To develop an understanding of public and environmental health management mechanisms including law, policy, surveillance and monitoring, and health promotion.
- To understand the professional role of the environmental health officer in government and industrial settings.
- To study the administrative structure of local and state environmental health agencies, and the application of legislative and policy initiatives available to them.
- To examine the practice of environmental health including the various tools such as risk assessment, research, ecologically sustainable development.

Reading Materials

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
- Provide basic training in the use of personal computer applications and software relevant to environmental health management.
- Provide an introduction to computer programming using Visual Basic for Applications.
- Introduce measurement concepts and their application to the effective use of relevant mechanical, electrical and scientific instrumentation.
- Provide an understanding of radiation technology and hazard assessment.
- Apply various relevant computer software packages, including MS-Word and MS-Excel.
- Describe concepts of mechanical and electrical technology.
- Demonstrate an understanding of measurement technology, particularly its application to scientific instrumentation used in the monitoring of the physical environment.
- Understand concepts of ionising radiation technology and bio-hazards.

Content
- Computer hardware, peripheral devices, CPU, Operating systems, Windows, Networks and Internet.
- Application packages such as word processors and spreadsheets.
- Data acquisition from instruments.
- Use of Excel for simulation, data processing and presentation.
- Principles of scientific instrumentation.
- Electrical technology.
- Mechanical and electrical devices with applications.
- Radiation sources: materials and detection.
- Acoustics.

Reading Materials

HES1716 Health Policy and Planning
12.5 Credit Points  •  1 Semester  •  3 Hours per Week  •  Hawthorn  •  Prerequisite: Nil
- Teaching methods: Lectures, Group Work  •  Assessment: Assignments 60%, Tests 40%
A subject in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
- To review current public health policies.
- To introduce and develop an understanding of the concepts and strategies of health promotion including integrated health promotion.
- To examine the social and cultural factors involved in health promotion.
- To understand the health needs applicable to rural, remote and vulnerable groups.

Content
- A review of the key concepts and strategies in community health, early identification, treatment, disease prevention and health promotion strategies.
- Social, cultural and psychological factors involved in health promotion and disease prevention behaviours.
- Health promotion programs. Opportunities, ethical responsibilities and funding.
- Needs Assessment Techniques.
- Program evaluation strategies, performance indicators.
- Municipal Public Health Plans and integrated health promotion.
- Examination and review of local, national and international health promotion policies and programs.

Reading Materials
DHS, Integrated Health Promotion, Department of Human Services, Victoria, 2003.
HES1900  Private Pilot Licence

12.5 Credit Points  •  1 Semester  •  6 Hours per Week  •  Hawthorn  •  Prerequisite: Nil

To complete the subject students will:
- Know the environmental, engineering, procedural and personal factors that impact on flying operations at the PPL level.
- Be able to achieve the CASA PPL theory exam credit.
- Be able to safely and accurately, plan and monitor flying operations at the PPL level.
- Value the safe and accurate, planning and monitoring of flying operations at the PPL level.

Content
Flight Planning:
Aircraft documentation, airspeed definitions, International Standard Atmosphere (ISA), pressure height calculations, density height calculations (QNH/Tmp & declared altitude charts), take-off and landing definitions (EAO 20.7.4), take-off and landing charts (Cessna & Warrior), weight and balance definitions and limitations, Cessna and Warrior weight and balance calculations, Alpha loading system, Bravo loading system, Charlie loading system, CAAP 92.1, unlicensed aerodrome calculations, Critical Point (CP) and Point of No Return(PNR), flight plan preparation, ERSA.

Air Law & Procedures:
Privileges and limitations, aviation documents, pilot licences, flight rules and conditions of flight, air service operations, aerodromes, local airspace, emergencies and SAR, aircraft equipment, carriage of passengers, radio equipment, performance, propagation, practical operation, procedural words and phrases, emergencies and use of transponder, air traffic procedures.

Navigation:
Form of the earth, time zones, universal time co-ordinated (UTC), end of daylight(EoD), beginning of daylight(BoD), charts and publications, computations, pilot navigation, radio navigation aids.

Meteorology:

Aircraft General Knowledge:
Terminology, direction, time, vertical measurement and other units. Power plant and systems, fuels and oils, engine icing, engine handling, malfunctions, and flight instruments, hydraulics/landing gear systems.

Aerodynamics Theory:
Lift and drag, flight controls, straight and level flight, climbing, descending, turning, taxi, take off and landing, wake turbulence and thrust stream turbulence. Human Performance and Limitations:
Basic health, health and fitness, hyperventilation, atmospheric pressure changes, basic knowledge of the anatomy of the ear, vision, spatial disorientation, illusions, motion sickness, acceleration "g" effects, toxic hazards, the atmosphere and associated problems, hypoxia and human factors considerations.

Textbooks
Thom, T, Meteorology and Navigation, Series 2, Aviation Theory Centre.
Thom, T, Aircraft General Knowledge and Aerodynamics, Series 1, Aviation Theory Centre.

References
Civil Aviation Safety Authority, VFR Day Syllabus (as amended from time to time).
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 understanding of Occupational Health and Safety principles ranging from the legislation framework, safety systems and detailed carriage of dangerous goods on aircraft as approved by CASA. Students will also be introduced to the importance of understanding the role of information technology tools.

Content

1. Occupational Safety (16 hours)
   - The requirements of the Civil Aviation Act and Civil Aviation Regulation as relating to the carriage of dangerous goods.
   - Definitions contained in the Technical Instructions relating to dangerous goods, units of measure and conversion factors.
   - Items specified as dangerous goods in the Dangerous Goods List contained in the Technical Instructions, items likely to be, or to contain dangerous goods. The classification of dangerous goods. Instructions for the carriage of excepted and limited quantities of dangerous goods. The responsibilities of an operator and shipper as outlined in the Technical Instructions, for packing, marking and labeling of dangerous goods.
   - Procedures to be followed by an operator if a dangerous goods incident occurs, including reporting procedures.
   - Separation of dangerous goods from other dangerous goods or cargo.
   - Documents relating to the carriage of dangerous goods, including notification to pilot. Instructions in an operator's dangerous goods manual for the handling of dangerous goods consigned for carriage on the operator's aircraft.

2. Aviation Medicine (24 hours)
   - Aviation Medicine; physics of the atmosphere, human responses to altitude change and acceleration (hypoxia, hyperventilation).
   - Special senses: vision, balance, spatial disorientation and illusions, physiology and pathology of the human ear, noise exposure, audiometry, hearing loss prevention. Motion sickness.
   - Human Factors: workload, fatigue, memory, motor control.
   - Health, drugs, pilot fitness.
   - Survival skills: basic procedures, first aid, thirst, hunger, protection from the elements, early recovery, survival equipment. Features of land and sea survival.

Textbooks

Campbell & Bragshaw, Human Performance and Limitations, 3rd edn, Blackwell

References

Anon, Dangerous Goods and Regulations, IATA.
DLO, Manual Handling: Regulations and Code of Practice, Department of Labour, Melbourne, 1998. (Note that this regulation is now published by the WorkCover Authority, Victoria).
Lewis, G, Human Performance Manual, Swinburne University/Airnet Australia, 1999
HES1920 Private Pilot Licence

12.5 Credit Points • 1 Semester • 6 Hours per Week • Hawthorn • Prerequisite: Nil

Aims & Objectives
To introduce the student to flight planning, procedures, navigation theory, meteorology, aircraft general knowledge, aerodynamics and human performance and limitations, at the Private Pilot Licence (PPL) level.

At the completion of this subject students will:
- Know the environmental, engineering, procedural and personal factors that impact on flying operations at the PPL level.
- Value the safe and accurate, planning and monitoring of flying operations at the PPL level.

Content
Flight Planning:
- Aircraft documentation, airspeed definitions, International Standard Atmosphere (ISA), pressure height calculations, density height calculations (QNH/Temp & declared altitude charts), take-off and landing definitions (CAO 20.7.4), take-off and landing charts (Cessna & Warrior), weight and balance definitions and limitations, Cessna and Warrior weight and balance calculations, Alpha loading system, Bravo loading system, Charlie loading system, CAAP 92.1, unlicensed aerodrome calculations, Critical Point (CP) and Point of No Return (PNR), flight plan preparation, ERSA.

Air Law & Procedures:
- Privileges and limitations, aviation documents, pilot licences, flight rules and conditions of flight, air service operations, aerodromes, local airspace, emergencies and SAR, aircraft equipment, carriage of passengers. Radio equipment, performance, propagation, practical operation, procedural words and phrases, emergencies and use of transponder, air traffic procedures.

Navigation:
- Form of the earth, time zones, universal time co-ordinated (UTC), end of daylight (EoD), beginning of daylight (BoD), charts and publications, computations, pilot navigation, radio navigation aids.

Meteorology:

Aeronautics 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
Aviation Theory Centre, Basic Aeronautical Knowledge (BAK).
Civil Aviation Safety Authority Australia, VFR Flight Guide.

References
Civil Aviation Safety Authority, VFR Day Syllabus, as amended from time to time.
Civil Aviation Safety Authority, Aeronautical Information Publication.
Civil Aviation Safety Authority, Operational Notes (CASA), NDB, VOR and DM E.

HES1935 Internal Combustion and Gas Turbine Engines

12.5 Credit Points • 1 Semester • 4 Hours per Week plus up to an additional 6 Hours for laboratory classes • Hawthorn • Prerequisite: Nil • Teaching methods: Classroom and laboratory • Assessment: Examination 60% Assessed work 40%

Aims & Objectives
To provide students with a thorough understanding of energy systems, heat transfer and thermodynamic applications to Internal Combustion engines. An advanced understanding of the theory and operation of gas turbine engines is also addressed.

At the completion of this subject, students will have developed an understanding of basic thermodynamics as applied to engine systems. Students will have also gained a qualitative and quantitative understanding of both Internal Combustion and Gas Turbine Engines as used in aircraft.

Content
- Basic engineering units and unit conversions
- Heat transfer processes; basic heat exchanger design
- Review of first law of thermodynamics; energy and work transfers, energy equation.
- Gas processes and cycles; applications to internal combustion engines
- Aircraft IC Engine construction and performance characteristics
- Basic Gas Turbine theory
- Characteristics of gas turbine engines and basic thermodynamic analysis
- Compressor and turbine blade design, turbine cooling.
- Gas turbine combustion elements and requirements
- Subsonic intakes
- Thrust reversers
- Thrust augmentation

Textbooks

References
Kerrebrock, J.L, Aircraft Engines and Gas Turbines, M.I.T.

HES1945 Aircraft Electrics and Avionics

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures 36 hours, Presentations 12 hours • Assessment: Examination 60% Assignments and Presentations 40%

Aims & Objectives
To provide an overall knowledge and understanding of aircraft electrical and electronic systems and equipment, including installations and related electrical protection, flight and engine instrumentation, navigation and control systems, electrical power generation, including control and supply. An understanding of communication and navigation systems is provided including LRRA, TCAS and ACAS systems.
At the completion of this subject, students will have developed a fundamental understanding of aircraft electrical and avionic systems. Students will also have an appreciation of the integration of such systems.

Successful completion of this subject should enhance discussion with relevant aviation specialists relating to aircraft operations.

Content
- Introduction to Aircraft Systems.
- Acronyms, DC circuits, electron flow, Ohm’s Law, parallel and series circuits, resistance of an electrical conductor.
- Aircraft Wiring Installations.
- Wire type selection, insulation types, shielded and twisted cables, installation & routing, identification, bonding, radio interference.
- Aircraft Electrical Power Systems.
- AC circuits, voltage/time graph, RM S, single & 3 phase, VoltAmp, A/C schematic diagrams, A/C generators, frequency selection (400 Hz.).
- Aircraft Electrical Power Distribution.
- Relays, circuit protection, Bus priority, generator failure, APU generator, external power source.
- HF and VHF Communication Systems.
- Wave modulation, HF frequency range and propagation, HF limitations, VHF frequency range, VHF limitations, incorrect use of HF and VHF.
- Digital Flight Data Recording Systems.
- History and development, method of recording, rate and duration, CVR/DFDR.
- VHF NAV (VOR / ILS / MKR), Radar (X Band), antennae design, FLIR systems, basic ATC systems, transponder operation.
- Aircraft Engine Temperature Indication System.
- Thermocouple systems (reciprocating and gas turbine engines), turbine EGT.
- Ground Proximity Warning Systems and Low Range Radio Altimeter Systems.
- LRRA systems (operation and influence of external factors), GPWS (modes and operation), EGPWS.
- Traffic and Collision Avoidance Systems.
- Need for TCAS, interface with other A/C systems, A/C detection, TCAS calls versus GPWS.
- Arinc Communication and Reporting System (ACARS).
- Out Off On In, ground time / flight time.

Textbook

References
C A A 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 (24 hrs), Tutorials (20 hrs).
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) and Bachelor of Engineering (Civil) / Bachelor of Business.

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 kinematical determinacy; stability of structural form. Loads on structures; load paths.
- Section properties (17%): Centroids, second moment of area, section modulus, principal axes.
- Stress and strain (17%): Distributions in beams; elastic and plastic behaviour. Plastic section modulus. Failure theories: maximum shear stress (Tresca) maximum principal stress (Rankine) and maximum shear strain energy (von Mises). Principal stresses, Mohr’s circle. Behaviour of composite structures.
- Structural theories (17%): Concept of work, conservation of energy, principle of virtual work, energy methods and moment area methods.
- Statically determinate structures (17%): Analysis for reactions, shear force, bending moment and axial force diagrams for beams and frames; analysis of trusses. Deflection of beams.
- Statically indeterminate structures (17%): Analysis for reactions, shear force and bending moment diagrams for beams and frames. Deflection of beams.
- Column buckling (7%): Euler buckling. Design formulae for Euler buckling.

Textbook

References
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.

At the end of this subject the students will be able to:

- Measure a distance to an accuracy of 1:6000 or better.
- Measure an angle/Bearing to an accuracy of 10" of arc or better.
- Be able to competently use a digital level.
- Be able to traverse using a Total Station.

- 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 geometries.

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.
- To develop understanding of the principles of sustainable road design and development and the effects of material properties, construction and design during design.
- To develop mathematical knowledge and skills appropriate to the content area.
- To provide a variety of practical laboratory experiences where students can apply their theoretical knowledge to practical situations.
- To identify the major themes within the subject area and identify current best practice research and literature.
- To develop an understanding and learn about:
  - The principles and practice of geometric road design, users' safety and comfort, water sensitive design.
  - Typical construction sequence, operations and equipment for earthworks associated with a conventional flexible pavement.
  - The environmental effects of erosion resulting from earthworks and road construction and learn about methods of controlling erosion and drainage works.
  - Common material properties and testing associated with pavement materials, common methods and applications of stabilisation.

At the end of this course students will be able:

- To undertake basic design, cross-section, vertical and horizontal geometry, both by hand and using Terramodel software.
- To be able to undertake field exercises and apply the survey theory and computations in a practical manner.
- To provide a variety of practical laboratory experiences where students can apply their theoretical knowledge to practical situations.
- To become familiar with the latest practices described in local (Vicroads) and national ( Austroads) standards/guidelines for designing urban and rural road geometries.
- 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.
Aims & Objectives

At the completion of this subject, students should be able to:

- To demonstrate an understanding of the properties and applications of road materials and the effects of traffic loading and the environment on their performance
- To demonstrate and articulate the effect of moisture content on soil's dry density under the same compaction effort.
- To recognise and describe the process of road drainage system construction, the appropriate equipment and controls of erosion during earthworks.
- To independently organise a team to achieve specified objectives within time constraints
- Demonstrated ability to articulate their understanding (report-writing) of the basic design principles and the impacts of their selection of the different design elements/parameters on the users and the environment.

Content

Road elements and Design (65%):

Terminology and design of road cross-sections, road classification, drainage structures, basic principles of road design and computer-aided road design, design vehicles, design speed, stopping sight distance, co-ordination and computations related to horizontal and vertical elements in road design (horizontal and transition curves, vertical curves); cut and fill balance; applications in design project, overcoming opportunity.

Road Construction and materials (35%):

Earthwork equipment and operation, compaction theory, road construction sequence, drainage and environmental issues, stabilisation, properties and testing of crushed rock and asphalt.

Textbook

Subject notes posted on Blackboard

Recommended Reading


HES2155 Geomechanics

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HES1125, HES2120 - Teaching methods: Lectures (24 hrs), Tutorials (18 hrs), Laboratory (6 hrs) • Assessment: Laboratory Practical Test (5%), Examinations (50%), Investigation Project (10%), Research Assignment (10%), Oral presentation (10%), Class Tests (15%).

A 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/soil specimens, construct simple geological cross sections, carry out a basic site classification, and determine strength and compressibility parameters of soils

At the end of this subject, students should be able to:

- Demonstrate an understanding of the rock cycle and identify common rock forming minerals, basic types of igneous, sedimentary and metamorphic rocks in the field.
- Read and understand geological maps as well as construct geological cross-sections.
- Determine the physical engineering properties of sediments (soils) and apply these quantities to phase relationships.
- Undertake a mechanical analysis of a sediment and perform Atterberg limits on the fine fraction in order to classify sediments to Australian Standards AS1726.
- Understand the basic concepts of water flow through soil to construct a simple flow net and perform the relevant flow calculations.
- Clearly understand the effective stress concept in soils by calculating total stresses, effective stresses and pore pressures within layers of soil.
- Calculate the changes in stress resisted by soil due to external point loads, line loads and loaded areas.
- Determine a soil’s strength parameters from a range of physical field and/or laboratory tests.
- Understand the principle of settlement and the distinct difference between immediate settlement and consolidation.
- Be able to simulate external soil loadings to calculate potential immediate settlements and consolidation settlements.

Content

Basic Geology and Geological Mapping (20%)

- Introduction to Geology, Geomechanics and Geotechnical Engineering and their role in Civil Engineering projects.
- The Rock Cycle – the role of 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.
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.

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 thereby explain the effect of microstructure on properties.
- On the basis of appropriate experiment, calculate the mechanical properties of a wide range of materials.
- To carry out a basic failure analysis and, where required, make life estimations based on critical crack length.
- To cover advanced methods of surface engineering, ceramic processing and use of composite materials in making materials selection.
- Through an awareness of the science and technology of the joining of materials, select an appropriate method of joining and comment on any advantages and disadvantages that might be associated with the selected method.

Content

Ferrous and Non-Ferrous Metals (33%):
- Review of major production methods of cast iron and steel: Blast furnace, basic oxygen steel, electric arc, steel recycling
- Phase diagrams: isomorphous, eutectic and iron-iron carbide, atomic structure of iron, solid solution
- Cast Iron: grey, white, nodular, structure/properties, applications
- Plain carbon steels: structure/properties, applications as a function of carbon content, inclusions.
- Isothermal transformation diagram, cooling curves, martensite, tempering.
- Case studies in modern steel making: 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, carburnising, transformation hardening, case/core refining, nitridding, precipitation hardening, microstructure, gas/plasma treatments.
- Surface Coating: electroplating, electrochemistry, decorative/industrial applications, thermal spraying, methods, microstructure/properties/applications; chemical/physical vapour deposition, ceramic coatings, vacuum technology, unique properties.

Ceramic Materials (8%):
- Review of conventional ceramics: porcelain, glaze, applications
- Advanced ceramics: review atomic structure in A/B compounds, bonding, physical and mechanical properties
• Case studies in advanced ceramics: optical applications, superconductivity, heat shields, tooling.

Polymers (16%):
• Major classes of industrials polymers, thermoplastics, thermosets and elastomers, amorphous and crystalline polymers. Tg, physical properties.
• Visco-elastic behaviour, mechanical properties, deformation and fracture.
• Polymer degradation and environmental failures.
• Adhesive joining of polymers

Composites (10%):
• Particle reinforced composites, concrete, fibre phase, fibre orientation/length, stress/strain behaviour
• Matrix phase, polymer, metals, ceramic and carbon.
• Classical strength, iso-stress, iso-strain, crack deflection.

Failure of Materials (16%):
• Static failure of materials
• Fracture mechanics, concept of stress intensity, modes of crack opening.
• Fatigue failure, fatigue/fracture, life simulation.

References

Textbook

HES2280 Manufacturing Technology 1

Aims & Objectives
During the course, we aim:
• To provide a general understanding of the range of modern production techniques in the manufacturing industry
• To introduce the basic principles of design of metal and plastics components and tooling in manufacturing industries
• To introduce the concept of quality and measurements and their importance in manufacturing industry

At the completion of this subject, students should be able to:
• Demonstrate knowledge of the range of manufacturing processes available
• Select of manufacturing processes for particular applications relevant to metal and/or plastics materials
• Use mathematical knowledge and skills to calculate the mechanical properties in a range of manufacturing processes
• Apply statistical quality control principles to improve the quality of product and comment on a product attributes based on quality assessment

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

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, intermittant motion, inversion, the Grashof condition, linkages of more than four bars, practical considerations
• Quick return mechanisms
Textbooks

Norton, RL, Kinematics and Dynamics of Planar Machinery, Prentice-Hall.

References


HES2330 Thermodynamics

12.5 Credit Points  1 Semester  48 Hours  Hawthorn  Prerequisite: HET124, HM5112 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 (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Business, Bachelor of Engineering/Bachelor of Science (Biotechnology), 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 thermofluid 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 thermofluid 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, reheater, regeneration, plant efficiency.
Gas Turbine Cycles (16%): The gas turbine cycle, intercooling, reheating, heat regenerating.
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 height, manometry.
Fluids in Motion (8%): Lagrangian and Eulerian view points, 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 & Similarity (8%): Dimensions in equations, Buckingham Pi theorem, common dimensionless numbers, similarity and model analysis, pressure coefficient.
Flow in Conduits (16%): Stress stress distribution across a pipe section, laminar & turbulent flow in pipes, criteria for laminar and turbulent flow, resistance, body 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  60 Hours  Hawthorn  Prerequisite: HES150, HES1525 • Teaching methods: Laboratory Classes, Lecture, Web based presence • Assessment: Reports (50%) Demonstrator assessment (50%) Laboratory test (12%) and Written test (8%).
A subject in the Bachelor of Science (Biochemistry), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Science (Biotechnology)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Business, Bachelor of Science (Psychology)/Biochemistry).

Aims & Objectives

During the subject we aim:
• To build upon the first-year practical chemistry base.
• To extend investigative skills and elevate wet-bench analytical techniques to a high level.
• To learn to use analytical instrumentation.
• To prepare for industry-based learning.
Content
Laboratory practical experiments in quantitative analysis using volumetric titration, UV-visible spectrophotometry, atomic absorption spectroscopy, gas chromatography and high performance liquid chromatography.

Reading Materials
Cross, RF, Analytical Chemistry Practical Manual, Swinburne Press.
Bowler, IC, Atomic and Molecular Spectroscopy, (printed notes), Swinburne Press.
Cross, RF, Chromatography, (printed notes), Swinburne Press.

HES2515 Investigative Chemistry Prac 2
12.5 Credit Points • 1 Semester • 60 • Hawthorn • Prerequisite: HES1500 & HES1525 • Teaching methods: Laboratory Class and Lectures/Training in Professional Skills • Assessment: Reports 50% Demonstrator assessment 30% Written test 8% Laboratory test 12%
A subject in the Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Business, Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives
During the subject we aim:
- To develop an understanding of the principles of phase equilibria and their application to common methods of purification.
- To further develop basic organic chemistry knowledge.
- To interpret inorganic principles for main group and transition metal elements and compounds.
- To quantitatively interpret chemical information presented in a spreadsheet and on a graph.
- To extend students’ knowledge of thermodynamics to a mature view.

Thermodynamics:
- Revision of enthalpy, heat capacity and the Kirchhoff equation, the second law of thermodynamics, entropy, free energy and spontaneity.
- Projection of spontaneity predictions to alternative temperatures.
- Calculation of equilibrium constants from tabulated data.
- Chemical potentials.
- Available work.

Phase Equilibria:
- Chemical potentials, spontaneous diffusion and stable phases.
- The Gibbs Phase Rule, the lever rule, one and two component phase diagrams, fractional and steam distillation, solvent ex-fraction, melting point test for purity, fractional crystallisation and zone refining.

Inorganic Chemistry:
- Acidity and basicity.
- Strength of acids and bases.
- Carbonyl -substitution and condensation reactions.
- Wittig reaction.
- Applications to synthesis.

Computers in Chemistry:
- Common personal computer software packages, concentrating on Excel.
- Applications involving the simulation of chromatographic resolution and kinetics using Excel.

Reading Materials
Cross, RF, Analytical Chemistry Practical Manual, Swinburne Press.

HES2520 Chemistry 3
12.5 Credit Points • 1 Semester • 60 Hours • 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 the Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Business, Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives
During the subject we aim:
- To develop an understanding of the principles of phase equilibria and their application to common methods of purification.
- To further develop basic organic chemistry knowledge.
- To interpret inorganic principles for main group and transition metal elements and compounds.
- To quantitatively interpret chemical information presented in a spreadsheet and on a graph.
- To extend students’ knowledge of thermodynamics to a mature view.

Thermodynamics:
- Revision of enthalpy, heat capacity and the Kirchhoff equation, the second law of thermodynamics, entropy, free energy and spontaneity.
At the end of this subject students will be able to:

- Acquire and interpret data in the laboratory.
- Design protocols for biochemical assays.
- Transform and interpret kinetic data and make predictions based on a simple model of enzyme kinetics.
- Understand the concept of pH and calculate the pH of a weak acid or base of given concentration.
- Calculate the pH of a weak acid or base of given concentration and determine the concentration of all species present.

**Content**

- Structure, chemical properties and function of the main classes of biomolecules including monosaccharides, polysaccharides, amino acids, peptides and proteins, fatty acids, triacylglycerols and related lipids, nucleotides and nucleic acids.
- Protein architecture and its relationship to protein function.
- Enzyme kinetics, reaction mechanisms, methods for enzyme assay and analysis, inhibition of enzyme activity.
- Principles of bioenergetics, strategies of metabolism, types of metabolic reactions.
- Reactions of glycolysis, glycolysis, Krebs cycle and oxidative phosphorylation.
- Overview of nitrogen catabolism and lipid catabolism and their integration with carbohydrate catabolic pathways.
- Practical program to support the above theory including spectrophotometry, quantitative and qualitative analysis of carbohydrates and proteins, handling of enzymes and determination of their kinetic properties.
- Safety in the laboratory.

**Recommended reading**

- Lehninger Principles of Biochemistry, 3rd edn, Nelson and Cox, 2000
- There are many other excellent biochemistry texts in the library including those by Moran, Mathews, van Holde & Ahern, Biochemistry, 3rd edn, 2000.
- Bowater, IC, Atomic and Molecular Spectroscopy, (printed notes), Swinburne Press.
- Cross, RF, Cross Chromatography, (printed notes), Swinburne Press.

**Aims & Objectives**

This subject aims to:

- Introduce students to biochemical structures and the relationship of structure to function.
- To introduce students to biochemical structures and the relationship of structure to function.
- To provide an understanding of the structure, function and kinetic properties of enzymes and their role in metabolism in the living cell.
- To examine the main catabolic pathways of the cell and how they are integrated with other pathways within the cell.
- To establish an understanding of the quantitative aspects of biochemical analyses.
- To establish the importance of chemical safety and precautions in the biochemical laboratory.
- To develop basic practical biochemical skills for the handling and analysis of biomolecules.
- To develop report writing skills.

At the end of this subject students will be able to:

- Demonstrate an understanding of the properties of biomolecules and be able to predict behaviour of molecules from structures.
- Transform and interpret kinetic data and make predictions based on a simple model of enzyme kinetics.
- Design protocols for biochemical assays.
- Acquire and interpret data in the laboratory.

<table>
<thead>
<tr>
<th>Course Details</th>
<th>Subject Details</th>
<th>Aims &amp; Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HES2621 Introduction to Biochemistry</strong></td>
<td>12.5 Credit Points</td>
<td>1 Semester  60 Hours</td>
</tr>
<tr>
<td></td>
<td>Teaching methods: Lectures, Tutorials, Web based presence</td>
<td>Assessment: Assignments 5% 10%; examinations45%; Practical reports 30%; Practical exam 20%</td>
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<tr>
<td></td>
<td>A subject in the Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology/Biochemistry)</td>
<td>Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology/Biochemistry/Biochemistry)</td>
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<tr>
<td><strong>HES2626 Biochemistry of Genes and Proteins</strong></td>
<td>12.5 Credit Points</td>
<td>1 Semester  60 Hours</td>
</tr>
<tr>
<td></td>
<td>Teaching methods: Lectures, Tutorials, Web Based Subject Presence</td>
<td>Assessment: Written assignment 10% Final exam 50% Practical reports 25% Practical test 15%</td>
</tr>
<tr>
<td></td>
<td>A subject in the Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology/Biochemistry)</td>
<td>Bachelor of Science (Biotechnology/Biochemistry)</td>
</tr>
</tbody>
</table>
• An introduction to clinical genetics and genetic counselling, ethical considerations in biotechnology.
• An understanding of the applications of gene and protein analysis to gene discovery, disease prediction, detection and treatment, molecular medicine, gene therapy, the human genome project.
• Laboratory exercises that provide a greater understanding of gene and protein structure and function.

At the end of this subject, students will be able to:
• Demonstrate an understanding of the complexity of the genetic material, various mechanisms of gene regulation and the instability and mutations in DNA and their effects on the structure and function of proteins.
• Demonstrate an understanding of the need for and use of the above information in biotechnology, particularly in relation to gene discovery, genetic basis of diseases, disease diagnosis, new types of disease treatments, forensic science, agricultural and industrial biotechnology.
• Demonstrate an understanding of the linkage between the biochemical principles and the extension of these into developing new techniques for genetic analysis.
• Show an awareness of the need for critical thinking and the ethical, legal and social issues associated with some of the technology.
• Recognise the future trends in biotechnology.
• Recognise the opportunities for further study or employment in various fields utilising biotechnology, locally and abroad.
• Demonstrate hands-on practical skills in the above areas.
• Record scientific observations correctly, interpret these honestly and present the results in the form of formal laboratory reports.
• Work co-operatively.

**Content**

Overview of the structure of DNA and RNA, DNA replication, gene transcription, protein translation.

Gene structure and regulation of gene expression in prokaryotes in bacteria, using the lac operon of E. coli as an example.

Composition of the eukaryotic genomes:
• Gene structure, its origin/evolution, mechanism of intron splicing, processing of mRNAs, mutations in genes and their effects, particularly in relation to human genetics diseases.
• Variable repetitive DNA sequences, VNTRs, microsatellites, applications of these in DNA typing, with particular reference to forensic science.
• Human genetic diseases associated with dynamic trinucleotide repeats.
• Multigene families encoding tRNAs, rRNAs, mRNAs.

Rearrangements in and instability of eukaryotic genomes and the implications of these:
• Transposable genetic elements (transposons and retrotransposons), implications of their instability to gene function.
• Genetic recombinations in gene complexes encoding antibodies and their effects on the structure and function of proteins.
• Meiotic recombination, linkage studies and their significance to genetic studies.
• Faulty recombination and its implications to gene structure, function, genetics.
• A brief overview of gross chromosomal rearrangements and their effects, cancers.

Regulation of gene expression in eukaryotes:
• Promoters, enhancers and other regulatory sequences of eukaryotic genes.
• Various transcription factors, motifs involved in interactions of these with promoters.
• Genomic imprinting, DNA methylation.

Introduction to the laboratory applications of the above information wherever appropriate, e.g., techniques based on DNA structure and replication (e.g., DNA sequencing, hybridisations, PCR); design of various cloning vectors, DNA profiling in forensic and other areas, genetic diagnoses, drug design.

**Textbook**

**Other reading materials**
Lecture notes (provided via Blackboard)
Laboratory manual (to be purchased from the University bookshop)

**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 Health Science (Public and Environmental Health), Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Business, Bachelor of Science (Psychology/Biochemistry).

**Aims & Objectives**
During the subject we aim:
• To develop the basic concepts of microbiology.
• To develop the practical skills and techniques required in microbiological analysis.
• To prepare students for studies in advanced topics in microbiology and applications in biotechnology.

**Content**
• A survey of micro-organisms.
• Structure and function of bacterial cells.
• Microbial metabolism including photosynthesis.
• Nutrition and growth of bacteria, counting techniques.
• Control of microbial growth, sterilisation and disinfection.
• Microbial genetics.

**Reading Materials**

**HES2636 Microbes in the Environment**

**12.5 Credit Points • 1 Semester • 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 Health Science (Public and Environmental Health), Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Business, Bachelor of Science (Psychology/Biochemistry).

**Aims & Objectives**
During the subject we aim:
• To introduce the fundamental concepts involved in food microbiology and its importance to the food processing industry.
• To understand the role and importance of food microbiology in food safety and quality assurance issues.
• To gain the necessary laboratory skills to undertake final-year food-related research projects.

**Content**
• Role of micro-organisms in food spoilage.
• Food borne pathogens and toxins, control methods, food preservation methods.
• Viruses.
• Host-parasite relationships.
• Host responses to infection: the immune system.
• Clinical and diagnostic microbiology.
- Fermentation microbiology: manufacture of food, bioreactors.
- Related practical exercises.

Reading Materials

HES2700 Food Science
12.5 Credit Points • 1 Semester • 48 Hours per Week • Hawthorn • Prerequisite: HES1500E • Teaching methods: Lectures, Laboratory Practicals • Assessment: Assignments, Examinations, Lab Reports

A subject in the Bachelor of Health Science (Public and Environmental Health) and Bachelor of Science (Biotechnology/Biochemistry)

Aims & Objectives
During the subject we aim:
- To study organic chemistry relevant to food composition
- To study 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 develop an understanding of the instrumental techniques used in food analysis to determine compliance with the Food Standards Code.

Content
- Food Chemistry techniques used to determine carbohydrate, protein and lipid in foods. Determinants of the amount of micronutrients in food. Methods used for determining the water content of foods. Determination of the calorie or joule content of foods. Other manual and instrumental techniques used in food analysis to determine compliance with the Food Standards Code.
- Organic Chemistry. Molecules which play a major role in food composition
- Chemical food additives will be considered under the following headings - historical aspects, permitted compounds, reasons for use, function, advantages, disadvantages, breakdown pathways, toxicity testing, regulatory control. Classes of chemical additives to be considered will include - preservatives, antioxidants, flavouring compounds, sweetening agents, flavour enhancers, nutrients and emulsifiers.
- Natural hazards associated with food inc. natural MSG, Solanine, Mycotoxins, Seafood Toxocisis, Ciguatera.

Reading Materials

HES2705 Water Science
12.5 Credit Points • 1 Semester • 48 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) and Bachelor of Science (Biotechnology/Biochemistry)

Aims & Objectives
During the subject we aim:
- Study of the environmental impact of industrial and domestic pollution on natural water. Brief review of water treatment methods with emphasis on tertiary treatment.
- To study water chemistry in terms of sources of pollutants and their effects.
- To study the analysis of water for polluting material.
- To study swimming pool chemistry.
- To examine the processes of water treatment.
- To study the processes of liquid waste treatment and disposal.

Content
Study of the environmental impact of industrial and domestic pollution on natural water. Sources of pollutants, including introduction of grey water usage. Brief review of water treatment methods with emphasis on tertiary treatment.
- Use of portable test equipment for the evaluation of natural water purity: pH, 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 wastewater. Irrigation lay-outs.
- Site evaluation. Land assessment. Soil percolation tests. Soil characteristics.
- Maintenance of systems. Legislative and code requirements.
- Physical treatment processes for drinking water and water supply systems. Stormwater quality. Circulation and filtration plant for swimming pools and spas.

Reading Materials
HES1500 Practical Manual, Swinburne Press.

HES2710 Health and Environmental Law 1
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES1100 • Teaching methods: Lectures, Tutorials, Class Exercises • Assessment: Assignments 30%, Class presentations 10%, Examinations 60%

A subject in the Bachelor of Health Science (Public and Environmental Health)

Aims & Objectives
To develop an understanding of the processes of administration of legislation relating to public health and environment protection.

Content
- Tobacco Act, responsibilities and duties
- Environmental health powers and controls of the Local Government Act.
- Food Safety Legislation: Food Act Codes. Statutory requirements and obligations of the food industry including Food Safety Programs.
- Registration, warranties, due diligence defences. Evidentiary value of Codes. Food recall protocol.

Reading Materials
HES1500E Teaching methods: Lectures, Field Visits  Assessment: Assignments, Examinations, Tests

A subject in the Bachelor of Health Science (Public and Environmental Health) and Bachelor of Science (Biotechnology/Biochemistry)

Aims & Objectives
During the course we aim:
- To understand the history and concept of the built environment including noise, air, ventilation and waste disposal.
- To understand the principles of domestic construction and examine the health issues related to housing accommodation.
- To identify the potential environmental hazards of the arising from the built environment including noise, air, ventilation and waste disposal.
- To provide an understanding of selected sanitary engineering principles and the ways in which they can be employed to resolve particular problems.

HES2715 Built and Sustainable Communities
12.5 Credit Points • 1 Semester • 5 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
During the course we aim:
- To understand the history and concept of the built environment including the legislative and strategic control of urban environments.
- To understand the principles of domestic construction and examine the health issues related to housing accommodation.
- To identify the potential environmental hazards of the arising from the built environment including noise, air, ventilation and waste disposal.
- To provide an understanding of selected sanitary engineering principles and the ways in which they can be employed to resolve particular problems.
To examine the principles of ecologically sustainable development and the application to the built environment

Content
- History of the built environment, land use planning processes and strategies and their application to environmental health.
- Vibration/acoustics: theory and practice of vibration and noise control applied to equipment and plant including ventilation systems
- Codes of practice for noise emission and control. Minimising health risks associated with high levels of vibration and noise.
- Air quality, sources of exposure, pollutants of concern, monitoring and control, sick building syndrome
- Sustainable development, concept of ecological footprint

Reading Materials

HES2725 Food Safety

Aims & Objectives
During the course we aim:
- To develop the skills necessary to effectively monitor food safety programs against statutory and other requirements, and to institute legal proceedings if required.
- To understand the principles of Food Safety Program development and compliance assessment, particularly in relation to the retail sector of the food industry.
- To describe major public health pests pertinent to the food industry, including measures for prevention, detection and control.
- To understand food safety programs audit and quality assurance skills appropriate to 3rd party auditing requirements.

Content
- Food contamination: types of contamination, conditions for presence
- Food risk classification. Storage, thawing, and re-heating technique.
- Use of detergents and sanitisers. Cleaning schedules.
- Food Safety Program development/assessment in retail establishments.
- Food handling hygiene: personal hygiene, cross-contamination, safe/unsafe handling.
- Food premises fit-out guidelines: space, product flow, lighting, ventilation. Surfaces and equipment construction, design and installation, plan review.
- Food premises assessment: effective communication technique, assessment procedure, equipment requirements and use. Sampling and auditing procedure.
- Pest management: Pest vectors pertinent to the food industry. Detection, identification and control procedures. Integrated Pest Management strategies.

Reading Materials

HES2735 Communicable Disease Control

Aims & Objectives
During the subject we aim:
- To introduce the study of immunology and its relationship to the development of immunisation practices.
- To examine and understand Australian immunisation procedures.
- To study the nature, transmission and control of communicable diseases of public health importance, from a local and global perspective.
- To examine the principles of epidemiology, approaches, data sources and measurements. Surveillance and outbreak investigation principles.
- To develop an understanding for emerging infectious diseases
- To develop an understanding for risk assessment and management of communicable diseases

Content
- Nature and scope of communicable diseases of public health significance, including, transmission and control.
- Principles of infection control for skin penetration premises and beauty establishments and associated guidelines.
- Diseases spread by contact and aerosols inc. M ycobacterium marinum, Leptospira spp. Legionnaires Disease, Toxic Cyanobacteria, Pseudomonas aeruginosa. Tuberculosis
- Disease spread by ingestion, inc.: bacterial, protozoa, viruses eg: Cholera, Typhoid and Paratyphoid fevers, Shigella, E. coli (ETEC etc) Campylobacter, Salmonella, Clostridia, Cryptosporidia, Giardia, Entamoeba. Hepatitis, Rotavirus, Norwalk.
- Diseases spread by direct contact inc: Impetigo caused by S. aureus, S. pyogenes, S pneumoniae, Herpes. Pediculosis, Scabies

Reading Materials

HES2740 Environmental Health Technology

Aims & Objectives
During the course we aim:
- To provide students with an understanding of selected engineering principles and the ways in which they can be employed to resolve particular environmental problems.
- To introduce the student to liquid waste disposal theory and practice, standards of installation, application and regulatory control.

Content
- Mechanical engineering plant: principles and standards to be met by heating, ventilating, air-conditioning, refrigeration, thermal comfort, and sick buildings. Recognition and analysis of problems, reports and recommendations, maintenance of records.
At the completion of this subject students will:

- Know the planning and operational factors that impact on flying operations at the ATPL level.
- Be able to achieve examination credits for the CASA ATPL Human Factors exams.
- Appreciate the operational limits of both aircraft and human beings at the ATPL level.

Content

- Advanced aerodynamics: Terminology, aerodynamic forces, shock waves, performance and speed, performance and altitude

Airframe and Systems: Flight controls, landing gear, actuating systems, air conditioning and pressurisation, ice and rain protection, fuel systems, electrical systems.

Turbine Engines: Throttling, principles of operation, engine construction, turbo propellers, auxiliary power units, operational considerations, starting.

Engine Instruments: Displays, EPR gauge, torque meter, RPM indicator, temperature indicator, fuel consumption, total air temperature (TAT) gauge.

Flight Instrumentation Systems: Application of computers to aircraft, EFIS, FMS.


Warning and Recording Equipment: Ground proximity warning systems (GPWS), Traffic Collision Avoidance System (TCAS), Overspeed Warning System, Stall warning, Take-off warning system (TWI), Digital Flight Data Recorder (DFDR), Cockpit Voice Recorder (CVR), Master Warning Systems.

Human Performance and Limitations: Metabolism, respiratory system and blood circulation, the pressure cabin, human information processing, vision, hearing, equilibrium, integration of sensory inputs, spatial disorientation and illusions, memory, human behaviour, personality, skills, human error and reliability, cockpit management, leadership, communication, judgement and decision making, flying and health.

Textbook


References


Avionics Fundamentals, 1974, United Airlines.

HES2910 Human Factors and Performance

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES1910 or equivalent level of knowledge • Teaching methods: Classroom • Assesement: Examination 60% Assignment 30% Presentation 10%

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 continue the study of Aviation Human Factors, and, in particular, those aspects which apply to the operation of aircraft. At the completion of this subject the student will have an in-depth understanding of the range of human performance factors that apply to the safe day to day operation of aircraft and associated ground organisations.

Content
- Personality
- Human performance and limitations
- Effective teamwork and leadership
- Communication and assertiveness
- The Reason model
- Decision making/pilot judgement
- Attention, monitoring, sleep and fatigue counter measures
- Ergonomics and man-machine interface
- Managing Stress
- Management of aircraft automation
- Simulation
- CRM: Elements in CRM training, Evolution and overview of Contemporary CRM
- Regulatory Practice, Modality of CRM, Typology of CRM in Flight Operations Abinibi, Initial and Recurrent, CRM/LOFT, Organisational Resource Management
- LOSA, CRM Research and Evaluation.
- Cross cultural perspectives in CRM
- Basic Threat and Error Management Principles
- An in depth study of a General Aviation accident.

Textbooks

References

HES2915 Airline Planning & Operations

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Classroom based plus site visit to major airport • Assessment: Individual Assignment 20%, Experiential Component 40% Examination (2hrs) 40%

A subject in the Bachelor of Technology (Air Transportation Management) and Bachelor of Technology (Air Transportation Management)/Bachelor of Business.

Aims & Objectives
To facilitate an understanding of the functions, processes and relationships involved in planning and executing air route ground operations. To consider some of the complexities of planning, coordinating, and controlling a modern airline fleet in the context of operational and commercial environments.

At the completion of this subject, students will have developed an understanding of the planning and operational aspects of contemporary airlines. Through the use of a business simulation software package, students will have gained experiential knowledge of simulating a virtual airline.

Content
- Airline operational strategy and objectives
- Direction setting of airline operations
- Planning operations
- Route structure, route planning and route market analysis
- Fleet Planning
- Network Scheduling
- Operational Control
- Liaison, tasks, responsibilities, aircraft utilisation, Planning and Current day control, Port Co-ordination
- Crew Scheduling
- Technical and Flight Attendant Crewing - tours of duty, restrictions
- Maintenance Scheduling
- Maintenance release hours, line and hangar servicing
- Aircraft Ground Handling
- Ramp, Despatch, Gate/block functions, Ground servicing, Catering, Cabin cleaning, Refuelling, Passengers and baggage and Freight unloading/loading
- System Connectivity
- Reservations, scheduling, crewing and operations

The subject also uses an experiential approach by incorporating a software program in which students simulate an airline business. This business simulation runs concurrently with the delivery of theoretical content.

Textbook

References

HES2925 Air Transport Pilot Licence 1

12.5 Credit Points • 1 Semester • 6 Days over 3 Weeks • Hawthorn • Prerequisite: HES1920 • Teaching methods: Classroom • Assessment: Examination 70%; Assessed work 30%

A subject in the Bachelor of Technology (Aviation Management) and Bachelor of Technology (Air Transportation Management)/Bachelor of Business.

Aims & Objectives
To provide the student with knowledge of heavy jet flight planning and performance to a level required for operational situations encountered in the airline industry.

At the completion of this subject students will:
- Know the planning and operational factors that impact on flying operations at the ATPL level.
- Be able to accurately plan flying operations for the B727
- Value the safe and accurate planning of flying operations at the ATPL level.

Content
Choice of route and amount of reserve fuel: Selection of best route, weather, minimum fuel/time, engine and aircraft performance, payload, air traffic regulations, navigation aids, safety heights, fuel volume, temperature variation, alternates. Flight plans using various cruise control procedures. The use of aircraft performance data: Allowable loading and runway requirements for take off and landing. Use of aircraft performance data and meteorological data for optimum operation. Effect of failure of one or more power units. Flight progress charts. Long distance flight plans. In flight changes and emergency operations, PNR, ETP, 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 • 4 Hours per Week • Hawthorn • Prerequisite: Nil
- 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.

At the completion of this subject, students will have developed a fundamental knowledge of static equilibrium, aircraft structural members and materials and the method in which aircraft structures react load. Students will also understand the detrimental effects of corrosion and fatigue and how this is managed in aircraft fleets.

Content
- Structural loading: aerodynamic and inertia
- Load analysis
- Structurally determinate struts, ties, beams, shafts and simple frames
- 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
- Metallic corrosion
- Causes, time dependent, time related and time independent, common areas of corrosion in aircraft structures, methods of protection.

References
Middleton, R., Composite Materials in Aircraft Structures.
Anon, Aircraft Corrosion Control, EA-CC-1. IAP Inc.

HES2935 Aircraft Maintenance
12.5 Credit Points • 1 Semester • 2 Hours per Week plus 8 Hours practical • Hawthorn • Prerequisite: Nil • 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 the Bachelor of Technology (Aviation)/Bachelor of Business and 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.

At the completion of this subject, students will have developed an understanding of the planning and operational aspects of aircraft maintenance in an airline context. Students will have also achieved competency with respect to Schedule 8 Commercial Pilot Maintenance.

Content
- M maintenance Practices
- Regulations and M maintenance Philosophies
- M SG, HT, OC, CM, Reliability, SSI's, Review Board.
- M maintenance Practices
- Responsibilities, M R/B Document, CM R's, AU's, M M EL, CDL, PUS, SIR, CPCP, STC, ISC,
- Delegations, Approvals and Licences.
- Systems of M maintenance
- AMRD, maintenance work packs, Reliability M monitoring Program.
- M maintenance Control
- Organisational Arrangements, M maintenance Controller, M maintenance Control M annual.
- M maintenance Providers
- Log Books and M maintenance Releases
- A/C Flight and Technical Manual (Log)
- Discrepancies, Major Defects & PUS's
- Defect Categories, permissible unserviceabilities, defect analysis.
- M maintenance Costs
- Cost categories, direct and indirect operating costs, baseline cost, flight and cycle costs, labour and material costs, IATA system.
- Technical Organisations & Quality Assurance
- Systems of Safety and Compliance.
- Safety System Objectives, Safety Organisation Structure, Safety Management process, Compliance requirements.
- CASA approved Schedule 8 course
- Removal and installation of landing gear gears, repair of pneumatic tubes of landing gear, servicing of landing gear gears.
- Replacement of defective safety wiring or split pins.
- Replacement or refitting of a door.
- Replacement of a door or a side window (unpressurised aircraft).
- Replacement of seat belts, 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  3 hours per week  Hawthorn  Prerequisite: Nil

- 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. At the completion of this subject, students will have developed a fundamental knowledge of aerodynamics from both a qualitative and quantitative perspective with respect to aerodynamic forces and aircraft performance. Students will also have an appreciation of the aerodynamic factors impacting on operation of fixed wing transport aircraft.

**Content**

- Airspeed Measurement
- Atmosphere, incompressible flow, compressible flow and speed of sound, airspeed measurement at high speed.
- Aerodynamic Forces
- Dimensional analysis, lift and induced drag, boundary layer and total drag, high speed aerodynamics.
- Stability and Control.
- Static stability and control, dynamic stability and control, high speed flight limitations.
- Aircraft Performance.
- Powerplants, propellers and jets, cruise performance, climb and descent performance, take off performance, payload - range diagrams.

**Textbook**


**References**


Eshelby, M E, Aircraft Performance, Theory and Practice, Arnold, 1999


REFERENCES

- Eshelby, ME, Aircraft Performance, Theory and Practice, Arnold, 1999
- Hoerner, S, Fluid-Dynamic Drag.

**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 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**

During the course we aim:

- 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.
- M odels, line and staff, flat, multiple reporting, office, line maintenance, flying operations.
- Risk management.
- Finances, purchasing versus leasing, human response management, employment practices.
- Human resources.
- Issues in staffing 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, practices and processes.

References
CAO's 80 and 82, 100-104 series, CASA.
CARs, CASA.

HES2986 Aviation Regulation Environment and Operation
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: Classroom based • Assessment: Group applied research project (50%): Research Application 30%, Group Presentation of Group 20% Examination 2 hours (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 many facets of aviation and the facilities and services required to manage a complex but exciting industry. At the completion of this subject, students will be able to develop an understanding of some of the regulatory, environmental and operational frameworks within which aviation organisations exist.

Content
• Regulatory Framework
• Technical regulation
• Economic regulation
• Air Operator's Certificate
• Certification
• Environmental framework
• Safety and Risk Management
• Security in Aviation
• Emergency Management
• Operational Aspects
• Aircraft Evaluation and Selection
• Flight Simulation
• ETOPS/Flight time limitations
• Fuel Management
• Air Freight
• Industry and Employment

Textbook

References

HES2990 Airport Planning, Operation and Management
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil
• Teaching methods: Classroom • Assessment: Individual Assignment (35%) Individual Oral Presentation (25%) Examination (50%)
A subject in the Bachelor of Technology (Air Transportation Management), Bachelor of Technology (Air Transportation Management/Bachelor of Business).

Aims & Objectives
To provide the student with a good understanding of the principles and practices relating to airport development and management. Students are introduced to the airport industry, how airports are planned, operated and managed, how airports obtain revenue and where their costs lie. Airport design is discussed so that an appreciation of airport infrastructure and standards required is reached.
At the completion of this subject, students will have developed an understanding of airport design and operational issues, and aspects of ownership and commercialisation.

Content
• Introduction to the Airport Industry
• Passenger behaviour in the terminal
• Customer relations and marketing
• Management of small/undeveloped airports
• Ownership models
• Airport fees and charges
• Economic impact of airports
• Airport master planning
• Terminal layout
• Standard and busy rates
• Customs, immigration and quarantine
• Security
• Choice and location of Navigation Aids
• Environmental Impact
• Wildlife Hazard Management
• Overview of pavement design

Textbook

References

HES3021 Heat Transfer
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: M ost of 2nd year • Teaching methods: Lectures, Guest Lectures, Tutorials, Plant Visits and Laboratory • Assessment: Assignments, Examinations
A subject in the Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Business, and Bachelor of Engineering, (Biotechnology)/Bachelor of Science (Biotechnology).

Aims & Objectives
During the course we aim to develop competence in the application of heat transfer theory to the analysis of practical heat transfer problems, and design and selection of heat exchangers, and evaluation of heat exchanger performance.

Content
Review:
• The laws of conservation of mass and energy and their applications.
• The second law of thermodynamics.
• Differential equations and their applications in rate processes.
• M mechanisms of heat transfer, theory and applications.

Conduction:
Combined heat and mass transfer:

- Theories of interphase mass transfer: film theory, penetration theory, random phase equilibrium.

Interphase mass transfer:

- Fluid flow in convection; laminar and turbulent flow; boundary-layer theory.
- Concept of similarity; dimensional analysis.
- Prediction of heat-transfer coefficients in forced and natural convection, condensation and boiling heat transfer.

Heat exchangers: types and construction; film and overall coefficients; log-mean heat-transfer coefficient.

Convective mass transfer:

- Diffusion with chemical reaction.
- Unimolar transfer and equimolar counter-transfer.
- Fick's law; diffusion coefficient, steady-state diffusion in single-phase systems.
- Binary and multi-component diffusion.

Diffusion mass transfer:

- Unimolar and equimolar counter-transfer.
- Diffusion with chemical reaction.
- Transient diffusion.

Convective mass transfer:

- Unimolar and equimolar counter-transfer.
- Fluid flow in convection; laminar and turbulent flow; boundary-layer theory.

Intephase mass transfer:

- Phase equilibrium.
- Theories of interphase mass transfer: film theory, penetration theory, random surface renewal theory.
- Design of continuous differential contactors.
- Height of transfer unit and number of transfer units.

Combined heat and mass transfer:

- Heat-transfer coefficient.
- Fluid flow in convection; laminar and turbulent flow; boundary-layer theory.
- Concept of similarity; dimensional analysis.
- Prediction of heat-transfer coefficients in forced and natural convection, condensation and boiling heat transfer.

Heat exchangers: types and construction; film and overall coefficients; log-mean temperature difference; effectiveness-NTU method; fouling factor; pressure drop; optimum design of shell and tube heat exchangers.

Radiation:

- Nature of thermal radiation; black-body and real-body radiation; Stefan-Boltzman's equation; Planck's law of radiation.
- Radiation properties of surfaces: absorptivity and emissivity. Radiation exchange among surfaces in a non-participating medium; view factor.
- Gas radiation.
- Solar radiation.

Reading Materials


HES3025 Mass Transfer

12.5 Credit Points • 1 Semester • Hawthorn • Prerequisite: HES3021 • Teaching methods: Lectures, Guest Lectures, Tutorials, Plant Visits, and Laboratory • Assessment: Assignments, Examinations

A subject in the Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Business, Bachelor of Engineering (Biotechnology)/Bachelor of Science (Biotechnology).

Aims & Objectives

During the course we aim: To apply the principles of mass transfer and phase equilibrium to problems involving diffusion with or without chemical reactions, to separation processes, and to the design of equipment used in mass transfer operations.

Content

Diffusion mass transfer:


Unimolar transfer and equimolar counter-transfer.

Diffusion with chemical reaction.

Transient diffusion.

Convective mass transfer:

- Mass-transfer coefficient; film and overall coefficients.
- Fluid flow in convection; laminar and turbulent flow; boundary-layer theory.

Intephase mass transfer:

- Phase equilibrium.
- Theories of interphase mass transfer: film theory, penetration theory, random surface renewal theory.
- Design of continuous differential contactors.
- Height of transfer unit and number of transfer units.

Combined heat and mass transfer:

- Heat-transfer coefficient.
- Fluid flow in convection; laminar and turbulent flow; boundary-layer theory.
- Concept of similarity; dimensional analysis.
- Prediction of heat-transfer coefficients in forced and natural convection, condensation and boiling heat transfer.

Heat exchangers: types and construction; film and overall coefficients; log-mean temperature difference; effectiveness-NTU method; fouling factor; pressure drop; optimum design of shell and tube heat exchangers.

Radiation:

- Nature of thermal radiation; black-body and real-body radiation; Stefan-Boltzman's equation; Planck's law of radiation.
- Radiation properties of surfaces: absorptivity and emissivity. Radiation exchange among surfaces in a non-participating medium; view factor.
- Gas radiation.
- Solar radiation.

Reading Materials

Membrane separation processes: Classification of processes, micro-filtration, ultra-filtration.

**Reading Materials**

**HES3111 Urban Civil Design**

12.5 Credit Points - 1 Semester - 48 Hours - Hawthorn - Prerequisite: HES2340, HES2131 and HES2155 - Teaching methods: Lectures, Tutorials, Assignments, Field trips, Web-based subject presence (Blackboard) - Assessment: Examinations, Test, Assignments/Projects, Tests

A subject in the Bachelor of Engineering (Civil) and Bachelor of Engineering (Civil)/Bachelor of Business.

**Aims & Objectives**
During the course we aim to:

- Introduce 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 appreciation of 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**

**HES3112 Urban Water Resources**

12.5 Credit Points - 1 Semester - 48 Hours - Hawthorn - Prerequisite: Nil - Teaching methods: Lectures, Tutorials/Activities, Assignments/Quizzes, Field Trips, Web Based Subject Presence - Assessment: Examinations, Test, Assignments/Case Studies, Oral Presentation

A subject in the Bachelor of Engineering (Civil) and Bachelor of Engineering (Civil)/Bachelor of Business.

**Aims & Objectives**
During the subject we aim to:

- Introduce to students to a variety concepts and theories outlining:
  - wastewater and water treatment processes.
  - water quality testing standard procedures.
  - the components and interactions in urban hydrology.
  - methods in flood estimation.
  - the significance of incorporating environmentally sustainable principles to water resources 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 and field trips.

**Content**

Water quality, urban water resources, drainage and sewerage systems
- Water quality parameters and standard water testing equipments.
- Water treatment processes.
- Wastewater treatment processes and policies.
- Urban water supply schemes, sources of supply, general arrangements.
- Urban drainage design and modelling.

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.

**Reading Materials**
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 trusses to find member forces and deflections

**Steel Properties**
- Steel making process
- Hot rolled and cold formed steel
- Material specifications and properties

**Wind Loading on Structures in Accordance With AS/NZS 1170.2**
- Wind actions on buildings
- 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 48 Steel Structures Design Handbook, 1999. (To be purchased before week 3 of the semester)

**Recommended Reading**
- Hibbeler, RC, Structural Analysis, 4th edn, Prentice Hall.
- Australian Institute of Steel Construction (AISC), Design Capacity Tables for Structural Steel, Volume 1: Open Sections, 3rd edn.
- Australian Institute of Steel Construction (AISC), Economical Structural Steelwork, 4th edn. (To be provided to each student by the Australian Steel Institute - ASI).

**HES3150 Geotechnical Engineering**

12.5 Credit Points  |  1 Semester  |  60 Hours  | Hawthorn  | Prerequisite: HES1125, HES2120, HES2131, HES2136, HES2340  |  Teaching methods: Lectures (36 hrs), Tutorials (24 hrs)  |  Assessment: Oral Presentation (10%), Major Assignment (10%), Minor Assignment (5%), Examinations (60%), Class tests (15%).

A subject in the 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 AS2870 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.
References

HES3300 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 (Biotechnology), Bachelor of Engineering (Biotechnology/Bachelor of Business, Bachelor of Engineering (Civil)/Bachelor of Business, Bachelor of Engineering (Mechanical)/Bachelor of Business, Bachelor of Engineering (Biotechnology)/Bachelor of Science (Biotechnology).

Aims & Objectives
During the course we aim:
- 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.

Reading Materials
As suggested by the Swinburne academic supervisor to support the student's task environment.

HES3310 Control Engineering
12.5 Credit Points • 1 Semester • Full • Hawthorn • Prerequisite: All 1st year subjects, plus HES211 • Teaching methods: Web-based subject presence (Blackboard and detailed websites), Lectures, Tutorials, Laboratory, Assignments, Automated email • Assessment: Assignment (15%), Examination (70%), Labs (5%), Tests (10%)
A subject in the Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Biotechnology/Bachelor of Business, Bachelor of Engineering (Biotechnology)/Bachelor of Science (Biotechnology), Bachelor of Engineering (Mechanical), Bachelor of Engineering (Mechanical)/Bachelor of Business.

Aims & Objectives
During the course, we aim:
- To develop an understanding of the operational behaviour of a wide range of control systems.
- To develop the ability to determine a system's transfer function and performance characteristics using theoretically and experimentally derived data.
- To develop the ability to apply classical linear control theory in designing systems and improving steady state and dynamic performance.
- To 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:
Aims & Objectives
During the course we aim:

- To develop an understanding of the operational behaviour of a wide range of control systems.
- To develop the ability to determine a system's transfer function and performance characteristics using theoretically and experimentally derived data.
- To develop the ability to apply classical linear control theory in designing systems and improving steady state and dynamic performance.
- To 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: HET124
Teaching methods: Lectures (24 hrs), Tutorials (22 hrs), Laboratory (4 hrs), Class Tests (8 hrs) • Assessment: Pracs Class & Lab Report (20%), Tests (20%), Examination (60%)
A subject in the Bachelor of Engineering (Product Design), and an elective Bachelor of Engineering (Robotics & Mechatronics)

Aims & Objectives
During the course we aim:

- To develop an understanding of the operational behaviour of a wide range of control systems.
- To develop the ability to determine a system's transfer function and performance characteristics using theoretically and experimentally derived data.
- To develop the ability to apply classical linear control theory in designing systems and improving steady state and dynamic performance.
- To determine transfer functions from response-data for systems having a single input and output.

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, thermodynamics, 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, Bernoulli'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 HES2120 • Teaching methods: Web-based subject presence (Blackboard), Lectures (24 hrs), Tutorials (24 hrs), Assignments (50%), Examination (50%)
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 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%)
- Course aims
- Course structure
- Relationship with other subjects
- Design as an applied subject
- The role of analytical techniques in design
- Introduction to design modelling

Belts and chain drives (8%)
- Flat, vee, and toothed belts
- Roller and toothed chains

Clutches and brakes (8%)
- Disk, drum and band brakes
A general comprehension of the unique problems that humans bring to the workplace in order to develop an understanding of the nature and application of ergonomics.

During the course, we aim:

- To introduce the fundamental principles of ergonomics (human factors).
- To develop an understanding of the nature and application of ergonomics (human factors).
- Team skills through group projects.
- To achieve an overall awareness of human-factor issues as they apply in industrial settings.

After completing this subject the student will have developed:

- 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%)
- 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
- Slight 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 Reading

- Kroemer, KHE & 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 OH&S 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 stakeholders, 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

Web sources
Numerous Web-based sources of Sustainability, Environmental Management, Engineering Institution and Association and Community Risk information. As these are continuously changing, latest updates will be provided as appropriate. Typical mainstream sources include Federal and State government department of environment and department of Treasury web sites; Institution of Engineers Australia [IEAust] and the Association of Professional Engineers, Scientists and Managers Australia [APESMA] for Engineers: Dynamics, McGraw-Hill.

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 (Biotechnology), Bachelor of Science (Biochemistry)(Honours), Bachelor of Science (Biotechnology)/Bachelor of Business, Bachelor of Science (Psychology)/Biochemistry), and Bachelor of Science (Biotechnology/Biochemistry)(Honours)

Aims & Objectives
During the course we aim:
- 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.

Reading Materials
As suggested by the Swinburne academic supervisor to support the student’s task environment.

HES3680  Bioprocess Engineering Principles

12.5 Credit Points  • 1 Semester  • 60 Hours  • Hawthorn  • Prerequisite: HES3310  • Teaching methods: Lectures, Tutorials, Laboratory  • Assessment: Assignments, Examinations

A subject in the Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Business and Bachelor of Engineering (Biotechnology)/Bachelor of Science (Biotechnology).

Aims & Objectives
During the course we aim:
- To apply fundamental engineering principles such as material and energy balances, fluid dynamics and transport phenomena to analyse processes using biocatalysts.
- To develop an appreciation of the application of the same engineering principles to a variety of industrial bioprocessing problems.

Content
- Stoichiometry of microbial growth and product formation: Elemental balances, degree of reduction, yield coefficients.
To complete 48 weeks of full-time paid employment in an environmental health setting.

- To work as an environmental health trainee under the supervision of accredited environment health practitioners and be an effective member of a multidisciplinary team within the industry.
- To complete the placement period with an appropriate level of attained technical competence in environmental health practice as required by the University IBL assessment process.
- To develop and redefine verbal and written communication skills and personal qualities to an appropriate professional standard.

Content
Work requirements are established by the employer in consultation with environmental health staff of the University.

Reading Materials
As suggested by the academic and placement supervisors to support the student's progress and professional development.

HES4126 Structural Engineering
12.5 Credit Points • 1 Semester • 48 hours • Hawthorn • Prerequisite: HES1125, HES2120, HES2125, HES3121 • 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%)
A subject in the Bachelor of Engineering (Civil), and Bachelor of Engineering (Civil)/Bachelor of Business.

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
- Describe composite construction and design simple composite beams and slabs
- Describe tilt-up construction and identify critical stages and components of construction
- Design simple tilt-up panels considering the lifting and handling requirements
- Describe different forms of concrete deterioration and identify methods for rehabilitating and strengthening concrete structures
- Work effectively in small groups to design and implement a design software incorporating user-friendly interface, transparent design/analysis module and ready-to-use output.

Content
Design of 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
- Methods of assessing concrete properties
- 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, CIA 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
Standards Australia, HB 124-2000 Design of Concrete Masonry building
Standards Australia, AS 3570-2001 Masonry Structures.

HE54136 Transport Engineering
- 12.5 Credit Points • 1 Semester • 54 Hours • Hawthorn • Prerequisite: HES2131, HES2136, HES3111, HES3150 • Teaching methods: Lectures (36 hrs), Tutorials/site visit (8 hrs), Laboratories (6 hrs), Assignments (4 hrs) Web-based subject presence (Blackboard) • Assessment: Examination (60%), 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:
- 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 unsignalised intersections, including roundabouts, through an understanding of priority flows and the use of hand calculations and Sidra software.
- To recognise and apply the principles and objectives of safe intersection layout design using the appropriate standards and include all associated traffic control devices, drainage and lighting and produce a complete set of high standards plans.
- Develop understanding of the behaviour of road pavements, the factors considered in empirical and mechanistic designs and apply the gained knowledge in design different types of flexible pavements using charts and Circly software.
- Demonstrated ability to produce high quality reports.
- To independently organise a team and work cooperatively in a team environment to achieve specified objectives within time constraints.
- Develop knowledge of latest practices in design, materials and traffic management adopted locally and internationally.
- Demonstrated understanding of the impacts of different traffic management applications on traffic operation, social and natural environment and the use of 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.

Textbook
Subject notes posted on Blackboard

Recommended Reading
Underwood, RT, Road Engineering Practice, 1995.
http://www.irs.on.ca/index.htm
http://www.itsonline.com/index.htm
HES4146 Water & Environmental Engineering

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HES 2340 and HES3111 • 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

Australian Rainfall and Runoff, Institution of Engineers, Australia, 1987.

Department of sustainability and environment: water
http://www.snre.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 hrs), Laboratory (12 hrs) • Assessment: Assignments (40%), Examination (60%)

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 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 effector 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. Secondary fixtures, special fixtures designs. Design of gauges.
- Quality control and reliability (16%): Control charts for variable and attribute data, process capability, Pareto diagrams, acceptance sampling, incoming and final inspection, quality rating. Reliability of systems, modes of failure, mean time to failure.
- Computer laboratory (32%): Using parametric and CAD software for tooling design.

Reading Materials


HES4280 Manufacturing Technology 2

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Completion of Intermediate studies • Teaching methods: Lectures (40 hrs), Laboratory (4 hrs), Industry Visit (4 hrs) • 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.
- Analyse, improve and design metal and plastics components for particular applications.
- Use mathematical knowledge and skills to analyse forces and power required in metal forming and polymer processes.
- Demonstrate knowledge of plastic and composite material, manufacture and the characteristics of major plastic and composite products.
• Understand the deformation mechanics associated with slip line field in metal forming process.
• Understand the importance of economic factors when considering the application of a manufacturing process.

Content
• Metal forming processes (50%): Review of plasticity theory of metals, Von Mises and Tresca criterion, mathematical modelling of metal forming processes: extrusion, sheet forming, wire drawing, forging, process parameters and calculations. Slip line field theory and applications.
• 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, parison dimensions, swelling considerations. Film moulding: output die requirements, material output consideration, freeze line analysis.

Reading Materials
Textbook

Aims & Objectives
During the course we aim:
• To develop advanced mechanical design skills applied to more complex and 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.

Reading Materials
As suggested by the Swinburne academic supervisor to support the student's task environment.

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 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.
Heat Conduction Equation (10%): Review of differential equations, 1-D conduction, general conduction equation, boundary and initial values, solutions and methods, heat generation.
Steady Heat Conduction (8%): Heat conduction in plain walls, thermal contact resistance, resistance networks, heat conduction in cylinders and spheres, critical radius of insulation, finned surfaces.
Transient Heat Conduction (16%): Lumped system analysis, transient heat conduction in walls, cylinders, spheres, semi-infinite solids, multi-dimensional systems.
Numerical Methods in Heat Conduction (16%): Finite difference formulations, 1-D steady heat conduction, solution methods, 2-D steady conduction, transient heat conduction, controlling the numerical error.
Forced Convection (16%): Physical mechanisms of forced convection, velocity boundary layer, thermal boundary layer, flow over flat plates, flow across cylinders and spheres, flow in tubes.
Natural Convection (8%): Physical mechanisms of natural convection, natural convection over surfaces, natural convection in enclosures, natural convection from finned surfaces.
Heat Exchangers (8%): Types of heat exchangers, the overall heat transfer coefficient, analysis of heat exchangers, the Log-Mean-Temperature-Difference method, the effectiveness-NTU method

Textbook

References

Aims & Objectives
During the course we aim:
• To develop advanced mechanical design skills applied to more complex and diverse engineering system.
• Team skills through group projects.

At the completion of this subject, students should be able to:
• To develop an appreciation of system design principles in both engineering and nature.
• To develop the ability to estimate the risk and reliability of mechanical systems.
Subject Details

**Aims & Objectives**
During the subject we aim:
- To learn new and reinforce previously learnt experimental techniques, while doing experiments related to topics in the HES4510 lectures.
- To develop problem solving skills by attempting to identify compounds from experimental data and spectra.
- To do experiments without being given detailed instructions for all of the steps involved.
- To plan experiments to achieve stated goals and validate the results.

**Content**
- 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.

**Reading Materials**
**HES4510 Practical Manual, Swinburne Press**

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**HES4520 Advanced Chemistry 1**

12.5 Credit Points  
1 Semester  
48 Hours  
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 (Biochemistry/Chemistry), Bachelor of Science (Biotechnology/Biochemistry).

**Aims & Objectives**
During the subject we aim:
- To predict the NMR and MS spectra of organic compounds and deduce structural information from spectra.
- To study the general principles of surface chemistry, ion exchange and stereochemistry.
- To develop an appreciation for ethical and sustainable design in experimental research.

**Content**
- Nuclear Magnetic Resonance (NMR) and Mass Spectroscopy (MS):
  - Principles of NMR.
  - PMR chemical shifts, areas, and first order splitting patterns.
  - Analysis of PMR spectra.
  - Complications in PNMR spectra.
  - FT instrumentation (IR and NMR).
  - Analysis of CMR spectra.
  - Principles of MS.
  - MS instrumentation.
  - Interpretation of mass spectra.
Surface Chemistry:
- Basic principles of surface chemistry
- Surface tension and Young's equation
- Liquid surfaces and interfaces
- Surface tension measurement
- Adsorption at interfaces and contact angle measurement
- Applications to common household and industry examples.

Stereochemistry: To understand the relationship between structure and properties of organic molecules. Stereochemical representations, definitions of terms related to molecular geometry, configurational and conformational analysis. Stereochemical effects in organic reactions. Selectivity, prochirality, topicity, current topics.

Experimental Design: Common flaws in logic when designing experiments. Advanced understanding of the meaning of controls and blanks. Subject will be taught largely by example of experiments which have gone wrong and will emphasise the non-statistical approaches to experimental design.

Ion Exchange: Ion exchange and solvent extraction. Ion exchange types, the process, effects of pH and capacity. Applications: water softening, deionisation, Sirotherm, suppressed and single-column high performance ion chromatography.

Solvent extraction of drugs and related metals. Supercritical Fluid Extraction and Accelerated Solvent Extraction.

Reading Materials
Computers in Chemistry (printed notes), Swinburne Press.
Bowater, IC, NMR and MS (printed notes), Swinburne Press.
Harding, IH, Colloid Science (printed notes), Swinburne Press.

HES4525 Advanced Chemistry 2
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HES2520
Teaching methods: Lectures and Practical Laboratory  Assessment: Assignments, Examinations

Aims & Objectives
During the subject we aim to introduce students to important areas of chemistry which have significant, current industrial application and to developing areas in chemistry with substantial, new research and development (value-adding) potential.

Content
Molecular Modelling: Molecular modelling is the study of the geometry and properties of molecules by computer aided techniques. Molecular modelling is a rapidly expanding area of chemistry/biochemistry/biotechnology as property prediction can lead to the rational development of new compounds with specific properties. Molecular modelling is extensively used in the pharmaceutical industry in the development of new drugs. Several of the currently most profitable drugs have been developed by this method.

This course will concentrate on one aspect of the process of new drug design, the use of a protein as a basis for design, as this method has had the most commercial impact.

Topics covered include
- Locating a possible therapeutic target
- Protein Design
- Molecular Properties
- active sites
- ligand interactions/Interaction Sites/Grid
- biophores/pharmacophores
- ligand design

Colloid Chemistry:
- Characterisation of nanoparticles: particle size and surface charge.
- The nature and stability of dispersions, emulsions and foams.
- Coagulation and flocculation.
- Bio-colloids – liposomes, vesicles, bacteria and viruses – their physical properties, structure and 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.

Current Topics in Organic Chemistry:
Organic chemistry is a very diverse subject with many fascinating innovations which eventually impact on our lives taking place almost unrecognised. From the synthesis and production of huge and complex molecules to development of small biologically active molecules, from specialist polymers to pharmaceuticals. Topics will vary on a yearly basis but those likely to be covered include:
- new synthetic pathways
- nanotechnology
- green chemistry
- development of therapeutic agents
- specialist organic polymers
- catalysts in organic synthesis
- enzymes in organic synthesis
- natural products in organic synthesis

Separation Chemistry:
Separations in HPLC, reverse phase HPLC in depth, amino acid analyses, pre-column and post-column derivatisation, size exclusion chromatograph, peptide and protein separations.

Advanced Inorganic and Environmental Chemistry:

Reading Materials
The references for each topic will be advised by the lecturer concerned.

HES4621 Advanced Biochemistry
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HES2621, HES2626
Teaching methods: Lectures, Web Based Subject Presence  Assessment: Mid Semester Test (42%), Assignments (25%), End of Semester Exam (33%)

A subject in the Bachelor of Science (Biochemistry/Chemistry), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Arts (Media and Communications), Bachelor of Science (Biotechnology/Biochemistry)/Bachelor of Business, Bachelor of Science (Psychology/Biochemistry).

Aims & Objectives
- To present to students detailed examples of how biochemistry and molecular biology techniques are applied in the development of biotechnology.
- To introduce students to regulatory and ethical considerations that apply to biotechnological industries and developments.

Content
Content will include:
- Cell signalling/receptor structure and function. Major classes of ligands.
- Intracellular signal processing. Metabolic and cell cycle control.
- Protein purification, Affinity Chromatography
- Nucleic acid properties and function, gene expression and control
- Methods of DNA manipulation and analysis
- Selected methods in molecular biology
- Molecular genetics and mouse models of human disease
- Introductory Bioinformatics

Textbook
Selected reading on Library Counter Reserve and electronic reserve. Selected Web Resources

HES4626 Biotechnology
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: HES2621, HES2626
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.

At the end of this subject students will be able to:
- Describe particular applications of biotechnology.
- Be able to answer questions relating to biotechnology industry practices and standards.
- Be able to describe protocols for producing polyclonal and monoclonal antibody reagents.
- Be able to design an appropriate immunodiagnostic assay for a particular analyte.
- Be able to select an appropriate expression system for a particular protein product and be able to describe the requirements and operation of particular expression systems.
- Be able to describe and understand the requirements and applications of eukaryote cell culture.
- Be able to understand biotransformation as a process.

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 spectrosopy, MRI and other imaging methods.
- Contemporary techniques in biochemistry e.g. laser confocal microscopy, biochips, microarrays and combinatorial arrays, nanotechnology and molecular motors.
- Patenting and protection of ideas.

HES4641 Practical Biochemistry
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HES2621, HES2626 • Teaching methods: Practical classes, Web Based Subject Presence • Assessment: Written Practical Reports (100%)

A subject in the Bachelor of Science (Biochemistry)/Chemistry, Bachelor of Science (Biotechnology)/Biochemistry, Bachelor of Science (Biotechnology)/Biocarbon/Arts (Media and Communications), Bachelor of Science (Biotechnology)/Biochemistry/Bachelor of Business, Bachelor of Science (Psychology)/Biochemistry.

Aims & Objectives
The first aim is to have students become competent in the basic experimental techniques of biochemistry and molecular biology including use of vertical and flat-bed gel apparatus, spectrophotometers with data acquisition and analysis by computer, spectrophuorimetry, and various centrifuges including the ultracentrifuge. Students work in pairs with minimal supervision and are encouraged to solve their own problems of technique. The second aim is to have students become competent in data organisation, presentation and report writing.

At the end of this subject students will be able to:
- Analyse and assess particular separation processes
- Describe particular applications of biotechnology
- Be able to answer questions relating to biotechnology industry practices and standards
- Be able to answer questions and make predictions based on knowledge of immunological and immunochemical technology
- Be able to include DNA array technology applications in project design

Content
A number of experimental exercises, including sulphhydryl analysis, peptide sequencing, gel electrophoresis of proteins and nucleic acids, preparation and analysis of plasmid DNA, cell fractionation and enzyme assays. Instrumentation used include centrifuges, electrophoresis apparatus, spectrophotometer, spectrofluorimeter, image capture devices.

Reading Materials
A current Practical Manual must be purchased from the Bookshop. A selection of research papers are cited in the practical manual. Selected reading on Library Counter Reserve and electronic reserve. Selected web resources

HES4646 Biotechnology Research Project
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HES2621, HES2626 and HES4641 • Teaching methods: Supervised Practical Research Project, Supervised Practical Research Project • Assessment: Written report (joint report) (40%), Seminar presentation (20%), Laboratory Work Book (individual) Supervisor/Demonstrator Assessment - Technical competence demonstrated by the student (10%), Understanding the project and contribution of ideas (10%), Contribution to the work of the project/ diligence/ enthusiasm and team skills (10%)

A subject in the Bachelor of Science (Biochemistry)/Chemistry, Bachelor of Science (Biotechnology)/Biochemistry, Bachelor of Science (Biotechnology)/Biocarbon/Arts (Media and Communications), Bachelor of Science (Biotechnology)/Biochemistry/Bachelor of Business, Bachelor of Science (Psychology)/Biochemistry.

Aims & Objectives
- To develop enquiry skills in an unstructured environment
- To develop techniques to solve practical problems
- To develop problem solving skills
- To develop independence in experimental design and interpretation
- To develop research skills
- To present the results of research to peers using multimedia presentations

At the end of this subject students will have developed laboratory based enquiry skills in a relatively unstructured environment, using the techniques acquired in first semester (HES4641) to solve a problem or achieve a set aim. Students are expected to develop independence in experimental design and interpretation. The aims include the development of report organisation and seminar presentation using PowerPoint or web-based software.

Content
Laboratory-based biochemical research project. Techniques used range across those acquired in the 1st semester subject HES4641 Practical Biochemistry including gel electrophoresis, spectrophotometry, spectrofluorimetry, centrifugation and ultracentrifugation, column chromatography, PCR and molecular biology techniques. Projects may use DNA manipulation or analysis, protein purification and analysis, enzyme analysis, or a combination of these and other techniques common to chemistry, biochemistry and microbiology.

Reading Materials
Various research publications and reprints provided or given as references.

HES4700 Research Skills
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HES5102 • 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.

Reading Materials

HES4705 Research Project
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil
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.

Reading Materials
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
During the course we aim:
• To introduce the concepts and strategies of health planning and promotion.
• To examine the social and cultural factors involved in health planning and promotion.
• To understand the education techniques available in health planning and promotion.
• To review current public health policies.

Content
• A review of the key concepts and strategies in community health, early identification, treatment, disease prevention and health promotion strategies.
• Social, cultural and psychological factors involved in health promotion and disease prevention behaviours.
• Health promotion programs. Opportunities, responsibilities for health educators.
• Multimedia health promotion strategies and techniques.
• Instructional techniques and communication skills for health educators, Needs Assessment Techniques (incorporates Category Two Workplace training and Assessor training).
• Program evaluation strategies, performance indicators.
• Public Health Plans.
• Examination and review of local, national and international health promotion and planning policies and programs.

Reading Materials

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), Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Business, and Bachelor of Engineering (Biotechnology)/Bachelor of Science (Biotechnology).

Aims & Objectives
During the course we aim:
• To 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.
• Nature, sources, transport, monitoring and removal of pollutants, overview of Melbourne’s sewage and stormwater systems, environment protection in Victoria, industrial waste (trade waste, prescribed waste, priority waste) treatment and disposal.
• 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 dispersal of pollutants (air, water, and land).

Reading Materials
Manahan, SE. Hazardous Waste, Chemistry, Toxicology & Treatment, Chelsea Lewis, 1990.

HES4725 Occupational Health and Safety
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
Teaching methods: Lectures, Demonstrations, Fieldwork • Assessment: Assignments, Examinations
A subject in the Bachelor of Health Science (Public and Environmental Health).

Aims & Objectives
During the course we aim:
• To create an awareness of the types and nature of occupational hazards prevailing in particular industries.
• To develop an understanding of the specific effects these hazards have on human health.
• To study the legal requirements on employers to create a safe working environment.
• To understand the principles of safe work practices, and the rationale of safety codes.

Content
• Workplace hazards. Accident prevention and work-related injuries.
• Employer responsibility, duty of care, responsibility for reasonable precautions.
• Occupational noise and vibration exposure.
• Heat and ventilation. Measurement of dusts and fumes.
• Radiation: ionising and non-ionising.
• Electrical power and electrical appliances.
• Toxic substances: mechanisms of action and pathogenic effects.
- Routes of absorption of toxic substances.
- Evaluation and control measures.
- Safety technology.
- Machine safety, Hazard identification.
- Fire and explosion.
- Chemical safety in the workplace.
- Handling, hazard identification.

**Reading Materials**


**HES4730 Food Safety 2**

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HES2700, HES2636, HES2725 • Teaching methods: Lectures, Class and Field Exercises • Assessment: Assignments, Examinations, Tests

A subject in the Bachelor of Health Science (Public and Environmental Health).

**Aims & Objectives**

During the course we aim:

- To further develop the knowledge of food science gained in earlier subjects.
- To examine the role and functions of food regulating bodies in Australia.
- To develop food audit and quality assurance skills in the student appropriate to food auditor accreditation requirements.

**Content**

- A detailed examination of food law and policies in Australia. The role and function of the Australian New Zealand Food Authority (ANZFA). Food standards and code development. The Food Standards Code. The role of the environmental health officer in food safety regulation and supervision.
- Food technology: a detailed study primarily production and concept of co-regulation of food manufacturing and processes, highlighting activities and practices that may prevent or cause health hazards, spoilage or contamination.
- HACCP Plan development and assessment - food manufacturing industry.
- Quality: terminology and definitions.
- Auditing skills. Audit types and stages. Audit reports. The role and responsibilities of the food safety auditor (incorporates accredited Quality Society of Australasia auditor training).

**Reading Materials**


**HES4740 Environmental Control**

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Field Visits, Soil Laboratory Exercises • Assessment: Assignments, Examinations, Tests

A subject in the Bachelor of Health Science (Public and Environmental Health).

**Aims & Objectives**

During the course we aim:

- To examine the processes of water treatment.
- To study the processes of solid waste treatment and disposal.
- To study reticulated sewage treatment and disposal technologies.
- To establish land use planning processes and strategies and their application to environmental health management.
- To examine health issues related to housing and accommodation.

**Content**

- Solid waste treatment and disposal. Litter control.
- Primary, secondary and tertiary sewage treatment processes in reticulated urban systems. Recycling technologies, sustainable development and cleaner production.
- Soil classification systems, laboratory and field identification and classification. Soil permeability. Percolation and application to on-site sewerage systems.
- Introduction to land use planning. Structure and process of planning in Victoria including neighbourhood and regional planning.
- Planning scheme surveys including environmental impact assessments.
- Health issues related to accommodation. Statutory controls, Prescribed accommodation.

**Reading Materials**


**HES4900 AirTransport Pilot Licence 3**

12.5 Credit Points • 1 Semester • 3 Hours per Week plus additional 1.5 hours tuition per week is generally required to allow the student to successfully the 2 associated Civil Aviation Safety Authority (CASA) Air Transport Pilot Licence (ATPL) exam. • Hawthorn • Prerequisite: HES 1905 Commercial Pilot Licence. All seven, CASA ATPL theory examination credits are required for the student to sit the CASA ATPL theory exams. • Teaching methods: Classroom • Assessment: Examination 70% • Assessed work 30%. Candidates must in addition have achieved CASA CPL 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 provide the student with an extensive understanding of the purpose, operation and limitations of navigation systems and methods and an ability to take into account the importance of the dynamic atmosphere to flight operations up to Airline Transport Pilot Licence standard.

At the completion of this subject students will:

- Know the environmental and navigation factors that impact on flying operations at the ATPL level.
- Be able to safely and accurately plan and monitor navigation activities at the ATPL level, under a broad range of environmental conditions.
- Be able to achieve examination credits for the CASA ATPL Navigation and M eteoro exams.
- Value the safe and accurate planning and monitoring of navigation activities at the ATPL level, under a broad range of environmental conditions.

**Content**

Global Navigation:


High Altitude Meteorology:

Structure of the atmosphere, pressure temperature and density, humidity, clouds and its formation, precipitation, thunderstorms, wind and pressure, local winds, mountain effects, micro bursts, variation of winds with height, measurement of visibility, fog, other causes of reduced visibility, 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.

**References**


To develop further understanding of aviation human factors with emphasis on

Aims & Objectives

To reinforce and increase the students basic understanding of flight rules and procedures up to Airline Transport Pilot Licence standard. Additionally the student will learn the flight rules and procedures applicable to IFR flight.

At the completion of this subject students will:

- Know the legal and procedural factors that impact on flying operations at the ATPL and Command Instrument Rating levels.
- Be able to safely and legally conduct flying operations at the ATPL and Command Instrument Rating levels.
- Be able to achieve examination credits for the CASA IREX exam and the ATPL Flight Rules and Airlaw exam.
- Value the safe and legal conduct of flying operations at the ATPL and Command Instrument rating levels.

Content

Flight Rules and Law:
- Aircraft Nationality and Registration, Airworthiness of aircraft, Personnel Licensing.

Instrument Flight Rules:
- Documentation, flight planning, operational requirements, Meteorological considerations, radio navigation aids, fixing position, departure and approach procedures, circling and missed approach procedures, pilot qualifications and recency, privileges and limitations.

Textbook


References

Civil Aviation Safety Authority or equivalent of: Aeronautical Information Publication, Civil Aviation Orders, Civil Aviation Regulations, Departure and Approach Procedure Charts, Enroute Charts, Terminal Area Charts.


Avionics Fundamentals, 1974, United Airlines.


Civil Aviation Safety Authority, Civil Aviation Orders.

Civil Aviation Safety Authority, Aeronautical Information Publication.

Civil Aviation Safety Authority, ATPL Syllabus.

HES4905 Air Transport Pilot Licence 4*

12.5 Credit Points • 1 Semester • 3 Hours per Week plus an additional 1.5 hours is generally required to allow the student to successfully sit the 2 associated Civil Aviation Safety Authority (CASA) Air Transport Pilots Licence. • Hawthorn • Prerequisite: HES 1905 Commercial Pilot Licence, HES 2910 Commercial Pilot Licence. All seven, CASA CPL theory examination credits are required for the student to sit the CASA ATPL theory exams. • 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 flight rules and procedures up to Airline Transport Pilot Licence standard. Additionally the student will learn the flight rules and procedures applicable to IFR flight.

At the completion of this subject students will:

- Know the legal and procedural factors that impact on flying operations at the ATPL and Command Instrument Rating levels.
- Be able to safely and legally conduct flying operations at the ATPL and Command Instrument Rating levels.
- Be able to achieve examination credits for the CASA IREX exam and the ATPL Flight Rules and Airlaw exam.
- Value the safe and legal conduct of flying operations at the ATPL and Command Instrument rating levels.

Content

Flight Rules and the law:
- Aircraft Nationality and Registration, Airworthiness of aircraft, Personnel Licensing.

Instrument Flight Rules:
- Documentation, flight planning, operational requirements, Meteorological considerations, radio navigation aids, fixing position, departure and approach procedures, circling and missed approach procedures, pilot qualifications and recency, privileges and limitations.

Textbook


References

Civil Aviation Safety Authority or equivalent of: Aeronautical Information Publication, Civil Aviation Orders, Civil Aviation Regulations, Departure and Approach Procedure Charts, Enroute Charts, Terminal Area Charts.


Avionics Fundamentals, 1974, United Airlines.


Civil Aviation Safety Authority, Civil Aviation Orders.

Civil Aviation Safety Authority, Aeronautical Information Publication.

Civil Aviation Safety Authority, ATPL Syllabus.

HES4915 CRM & Safety Management Systems

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HES2910 (desired but not mandatory) • Teaching methods: Classroom • Assessment: Examination 60% 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


Hayward, B) & Lowe, AR (eds), Applied Aviation Psychology: Achievement, Change and Challenge, Avebury Aviation, Aldershot, UK, 1996.


Content

Safety Management System:
- Overview: What is it?
- Why an integrated approach
- Definitions and terms
- Safety management v quality management
- Cost-benefit analysis - developing the business case for ISMS

Legal Responsibilities

Elements of a Safety Management System:
- Management commitment
- Policies and objectives
- Organisational structure

Role of the Safety Officer:
- Setting up a Safety Committee
- Hazard and risk management
- Hazard identification
- Risk analysis and defences
- Reporting systems
- Safety education and training
- Audit and assessment
- Documentation

Evaluating and maintaining ISMS:
- Need to evaluate
- What to evaluate
- When to evaluate
- How to evaluate

Case studies

References

Safety Management Systems - What's in it for You, CASA, 2002
Safety Management Systems - Getting Started, CASA, 2002
Safety Management Training, AC119-165(0), CASA, 2002
Safety Management System for Commercial Operations, CAA(UK), CAP 712
Introduction to Safety Management Systems (TP13739), Transport Canada
Safety System Handbook, Federal Aviation Administration

Links to the CAA (UK), Transport Canada and FAA sites can be found on the CASA website.

HES4960 Aviation Project

12.5 Credit Points  1 Semester  4 Hours per Week  Hawthorn
Prerequisite: HES4950

Aims & Objectives

To provide students with the opportunity to conduct a major private research exercise in the field of aviation and presentation to a group forum for critical appraisal.

At the completion of this subject, students will have developed an ability to develop a project requirement, undertake a literary review, formulate discussions and conclusions and present the project findings in a professional manner.

Students will have also developed skills in project time management and if appropriate budget management.

Content

Major private research exercise in the field of aviation and presentation to a group forum for critical appraisal. The research undertaking may be conducted individually or in groups of two or three. Team project work is encouraged and larger group sizes are possible if warranted by the scope of the project. Smaller groups may undertake research on topics that are a subset of a larger topic.

Emphasis will be placed on topics which are supported by industry and lead to innovative studies.

References


HES4980 Aviation Facilities Management and Contemporary Issues

Aims & Objectives

- To provide a detailed understanding of the requirements for managing aviation and similar business facilities.
- To alert students to the wider range of contemporary issues that impinge on the running of a successful aviation business.

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.
• M marketing.

**Textbook**

**References**
Smith, Michael, *T. Aircraft Noise, Civil Aviation Safety Authority.
Anon, *ASSP Manual*, CASA.

**HES4981 Aviation Business Management**

21.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil

- Teaching methods: Classroom Based • Assessment: Group 3 part case study approach 45%: M Marketing/ Electronic Analysis 15% Financial Analysis 15% Service/ Performance Analysis 15%. Examination (4hr) 55%

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 foundation management and business skills applied to aviation.
- To prepare students for both broad based and highly focused business careers.
- To introduce the multi-disciplinary nature of management and the aviation business.

At the completion of this subject, students will have developed an understanding of business strategies and the various marketing, economic and financial influences on these strategies. An emphasis on business results measured by performance, service and quality is a focus of the subject.

**Content**
- Business strategy, objectives and resources
- Human resources and employee relations, and Technological resources in aviation
- M marketing and Economics
- M arkt analysis, capacity and yield management
- Branding and advertising
- M arkt tools, reservations and travel agents
- Economic factors affecting supply and demand for travel
- Economic concepts
- Financial Management
- Introductory accounting and budgets
- Financial statements
- Cost categorisation
- Direct and Indirect costs
- Service and Performance Management
- Service delivery
- Quality, value and organisational response

- **Textbook**

**References**
Clark, P., *CA Os 80 and 82, 100-104 series*, CASA.CARs, CASA, 2001.

**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 an elective in the Bachelor of Technology (Aviation)/Bachelor of Business; and Bachelor of Technology (Air Transportation Management)/Bachelor of Business.

**Aims & Objectives**
To equip both Aviation and Air Transportation Management graduates with the skills to operate effectively in an International Civil Aviation Organisation (ICAO) model airspace. At the completion of this subject students will have developed an understanding of the development and application of airspace management and air traffic services principles and practices. They should be able to relate this to airline and airport operations understand the relevance to an aviation career.

**Content**
The subjects studied in detail in this subject will be drawn from the following:
- History of ICAO – how it was formed and why.
- The establishment of airspace based on ICAO recommendations
- Aviation documentation
- The provision of Air Traffic Services (ATS)
- ATS related Air safety Incidents, Runway Safety
- Navigation changes, Privatisation and Aviation Cost Recovery
- ATS Flow Management practices
- M ethods of measuring ATS performance
- M ethods of dealing with airspace and airport congestion
- Aircraft performance
- ATC issues in airport planning
- Impact of aircraft noise
- ATC Automation, Human Factors
- ATS Consolidation, TAAATS (The Australian Advanced Air Traffic System)
- The impact of FANS (Future Air Navigation Systems) or CNS/ATM on ATS

**Textbooks**
There is no text required for the course

**References**
HES5005  Process Plant Design

12.5 Credit Points  • 1 Semester  • 60 Hours  • Hawthorn  • Prerequisite: Substantial Completion of 3rd Year  Teaching methods: Lectures, Tutorials  • Assessment: Assignments, Examinations

A subject in the Bachelor of Engineering (Biotechnology) and Bachelor of Engineering (Biotechnology)/Bachelor of Science (Biotechnology).

Aims & Objectives

• To develop the ability to apply the principles of material balance, energy balance, reaction kinetics, reactor engineering, separation technology and process design to environmental engineering problems.
• To develop an understanding of the common engineering principles for pollution control and prevention.
• To develop an appreciation of environmental assessment techniques and environmental management issues.

Content

• Water quality engineering: Water supply systems, water quality, design of water treatment processes.
• Wastewater engineering: Wastewater sources and characteristics, design of physical, chemical and biological treatment processes.
• Air quality engineering: Air pollutants, air quality issues, design of physical, chemical and biological air emissions control processes.
• Solid and hazardous waste management: Collection and disposal of refuse, integrated solid waste management, hazardous and radioactive waste management.
• Noise pollution: Measurement of sound, noise abatement and control.
• Global and local environmental issues: Ozone depletion, atmospheric warming, biodiversity, renewable resources, social issues, impact of population and quality of life.
• Environmental impact assessment: Risk assessment, legislation and regulations.
• Pollution prevention: Cleaner production, waste minimisation, life cycle analysis, environmental ethics.
• Demand management strategies: Economic controls.
• Occupational health and safety: Legislation, community education and programs.

Reading Materials

Grady, CPL Jnr & Lim, HC, Biological Wastewater Treatment, Marcel Dekker, 1980.
Aims & Objectives

- 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.
- To develop the ability to plan and execute an innovative project.
- 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.

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 research and development, experimental work, computer analysis, industry liaison and business skills. Students are expected to conduct literature and state-of-the-art surveys, formulate and define problems, generate and select solutions, and analyse and prepare designs. Where appropriate, students will build and test their design.

Projects are undertaken under the close supervision of a staff member who meets regularly with the students to discuss and assure progress. Total student time spent on the project is expected to be a minimum of 160 hours.

Reading Materials


Communication sections from:


Further references as recommended by the supervisor to support the student's project.

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 (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Science (Biotechnology), 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.

HES5175 Cost Engineering

12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: HES2125, HES2135, HES3110, HES3121 • 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. A hard copy of all course material is progressively issued, together with a weekly summary of material discussed in the previous week's lectures and tutorials, including worked examples of all assignments. • 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 M anagement, 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, NFW), ROR using DCF techniques, and Benefit Cost analysis, cash and investment flows, inflation and escalation, foreign exchange and hedging.
- Measure basic quantities using AS 1181 - 1982 M ethod 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.

Swinburne University of Technology | Undergraduate Course Handbook 2005
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

Reading Materials

All course material is currently provided as handouts.
To complete some assignments the student will be required to locate, read and extract specific information from a technical paper published by one of the professional engineering organisations (eg Institution of Engineers Australia).
Books for general reading covering the construction of specific major projects are identified in the course.

HES5190 Infrastructure Design Project

12.5 Credit Points • 1 Semester • 48 hours • Hawthorn • Prerequisite: Completed year three and substantially completed year four of the Civil Engineering degree program, including HES4136 and HES4146 – Teaching methods: Lectures (24 hrs), Tutorials/Workshops/site visit (10 hrs), Laboratories (6 hrs), Assignments and consultations (8 hrs), 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

Reading Materials

References as recommended by the teaching team for the current year’s design project.

HES5191 Infrastructure Deterioration and Assessment

12.5 Credit Points • 1 Semester • 48 hours • Hawthorn • Prerequisite: Completed year three and substantially completed year four of the Civil Engineering degree program, including HES4136 and HES4146 – Teaching methods: Lectures (24 hrs), Tutorials/Workshops/site visit (10 hrs), Laboratories (6 hrs), Assignments and consultations (8 hrs), Web-based subject presence (Blackboard) – Assessment: Examinations (60%), 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 associated with the use of 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 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 that reach 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 specific 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-laser profiler, non-destructive testing, Accelerated load Testing, etc.
- Performance Indicators used locally and internationally to assess the functional and structural performance of road pavement. International roughness index, Pavement Serviceability Index, Pavement Serviceability rating, Structural Condition Index, Structural Number, Pavement Condition Index
- Performance/deterioration Modelling, modelling techniques, typical initiation and progression models for rutting, cracking, potholimg and roughness, HDW-4 aggregate and incremental models; ARRB TR models

Drainage and Sewer Systems
- Types of materials used and their deterioration mechanisms
- Problems: structural (manholes, pipeline), deterioration, pipe deficiency, joint leaks, soil condition, infiltration, inflow and hydraulic capacity.
- Condition monitoring technologies - indirect and direct
- Rehabilitation methods - non-structural, semi-structural and structural
- Parameters used in modelling pipes deterioration/breakage, modelling techniques and available models

Water supply systems
- Pipes and valves, Types of materials used, plastic, concrete and cast iron, deterioration mechanisms, blowout holes, cracking, splitting etc.
- Problems, corrosion, low pressure, quality of water, soil movement, 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 RCCP
- Evaluation and performance indicators: pressure, flow, head loss test, leak detection survey, field tests
- 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
- M odelling, parameters considered and available bridge deterioration models, deterioration models under different loading and environmental conditions

Textbook
Subject notes posted on Blackboard

Recommended Reading

References

Subject notes posted on Blackboard

Recommended Reading

References

Recommended Reading

References
To examine techniques for the management of civil engineering 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 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.

Demonstrated 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 criticise 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, supportability, and design for whole life; environmental effects; condition assessment, condition indices and needs analysis; performance and deterioration modelling and failure analysis; life-cycle cost and analysis; maintenance and rehabilitation practices; project-level and network-level concepts; prioritisation and optimisation, etc.

As engineers, students will be required to focus on infrastructure as an integrated system, to accurately assess infrastructure needs, assess the risks in the different possible actions to meet the needs of the system and adopt or make the proper decisions that aim at optimising the system’s performance and its environmental impacts (including social). 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

Reading Materials


Improved Surface Drainage of Pavements: http://books.nap.edu/books/nchp16/html/R1.html


R1.html

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
- M manufacturing environment
- M manufacturing operations
- Concurrent engineering
- M manufacturing decisions
- Decisions and uncertainty
- Planning and design issues
- Introduction to types of facility layout
- M aterial resources planning
- M aterial 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
HE55250  Robot System Design

12.5 Credit Points  1 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)  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 analyze and synthesize 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
- Multitile 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

Reading Materials


HE55290  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, Tutorials: 10x2 hour, Laboratory: 2x2 hour, Assignments, Web-based subject presence (Blackboard)  Assessment: Assignments, Examinations

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 the 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 advance robotic technology and Non-destructive testing techniques in modern manufacturing practice.
  - the use of satellite for navigation (GPS) and its application in industrial robots.
  - the interaction between manufacturing, material and properties in the context of economically and environmentally sustainable technology.
- 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 technology: laser cutting, hardening glazing and cladding, micro and nano machining, Laser applications and process parameters
- High energy processing, high power laser
- Thermal spray technology: theory, practices and coatings
- Surface engineering: plasma nitriding, nitrocarburising, duplex coatings

Additional materials will be recommended in lectures and tutorials.
• Load bearing capacity, Hertzian stress calculation
  Robotic technology:
  • Human Computer Interaction
  • Visual Data Analysis
  • Robotic navigation and use of satellite positioning data
  • Intelligent robotics

Reading Materials

Invited lecturers advise the reference for each lecture.

HES5310 Machine Dynamics 2
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: HES2310 • Teaching methods: Lectures (36 hrs), Tutorials (18 hrs), Web-based subject presence (Blackboard), Laboratory: Static and Dynamic balancing (duration 2hrs); Cam analysis (duration 2hrs); Vibration analysis, modes and frequencies in multi degrees of freedom (duration 2hrs) • 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 viable 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
• Centroids, slip velocity, examples of analytical solutions for velocity analysis
• Acceleration: Graphical acceleration analysis
• Examples of analytical solutions for acceleration analysis
• Acceleration of any point on a linkage

Mechanics of Machinery (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 trade-offs and ratios
• Free and forced vibration of systems (20%)
• Vibration of continuous system: beam and torsion analysis

Textbooks

References

HES5320 Solid Mechanics
12.5 Credit Points • 1 Semester • 60 Hours • Hawthorn • Prerequisite: HES2120 • Teaching methods: Lectures, Tutorials, Laboratory, Assignments, Web-based subject presence (Blackboard) • Assessment: Assignments, Examinations, Laboratory Practical Test, Tests
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 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 (20%)
• Plane stress equilibrium equations in terms of Cartesian and cylindrical co-ordinates, 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 leading and boundary conditions, axi-symmetrical thin shells, local bending stresses in thin shells, bending in cylindrical tanks.

Buckling Instability (8%)
• Revision of buckling characteristics for real struts, eccentric loading of slender columns, empirical formulae for design
• Compression and shear buckling of thin plates
• Local buckling

Finite element analysis (20%)
• Revision of principle of the finite element method, for beams and solids, modelling techniques, examples of advanced finite element analysis

Experimental stress analysis (10%)
• Strain gauge applications, dimensional 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 hrs), Tutorials (20 hrs), Web-based subject presence (Blackboard).
Laboratory: Determination of Lift and Drag forces (duration 2hrs), Performance of turbo machinery (Pump/axial flow fan) (duration 2hrs).
Assignments • Assessment: Tests (15%), Assignments (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 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
• Qualitative description of the laminar and turbulent boundary layer
• Quantitative relations for the laminar and turbulent boundary layer
• Boundary layer control
Compressible Flow (20%)
• Wave propagation in compressible fluids
• Mach number relationships
• Normal shock waves
• Isentropic compressible flow through a duct with varying area
• Compressible flow in a pipe with friction
Flow Measurements (8%)
• Instruments for the measurement of velocity
• Pressure and flow rate
• Measurement in compressible flow
Advanced Turbomachinery (18%)
• Propeller theory
• Axial flow pumps

• Radial flow machines
• Specific speed
• Suction limitations
• Turbines
• Viscous effects
Computational Fluid Dynamics (16%)
• Finite difference equations
• Discretisation techniques
• Viscosity variations
• Incompressible and compressible flows
• Unsteady flow modelling
• Introduction to CFD computer packages
• CFD modelling project
• Computer-based pipe network analysis and design

Textbooks

HES5350 Product Design
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HES3350 •
Teaching methods: Web-based subject presence (Blackboard), Lectures (24 hrs), Tutorials (24 hrs), Design Projects • Assessment: Assignments, Examinations, Project(s)
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.
• 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.

**Reading Materials**


**HES5380 Engineering Management 2**

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); the BSc(Computer Science & Software Engineering); BEng(Communications & Internet Technologies); and the BME (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 (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Science (Biotechnology), Bachelor of Engineering (Civil), Bachelor of Engineering (Mechanical), Bachelor of Engineering (Robotics and Mechatronics), Bachelor of Engineering (Robotics and 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 elements 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, task, functions and characteristics required of an effective project manager.
- Assess the merits of alternative project organizations and select an appropriate organisation for a specific project.
- Plan a project including the creation of a statement of work, a work breakdown structure and an appropriate set of supporting work packages.
- Create a network diagram to represent a project and the logical inter-relationship of activities within a project.
- Apply appropriate network techniques such as PERT and CPM.
- Assess risk inherent within a project based on both critical paths within the project and time variation within project activities.
- Crash a project when shortened completion deadlines are required.
- Allocate resources to project work packages.
- Schedule work packages.
- Apply resource loading and resource levelling techniques for optimal outcomes within a project.
- Recognise the practices for project budgeting and cost estimation.
- Develop an appropriate project cost accounting system and measures of project performance.
- Explain the role and nature of accounting and distinguish between finance and accounting.
- Create and evaluate measures and reports of financial position for a business enterprise.
- Create and evaluate measures and reports of financial performance via P&L accounts.
- Identify and explain the nature of limited liability companies and their accounting rules.
- Create and evaluate measures and reports of cash flows via Cash Flow statements.
- Analyse and interpret financial statements via major categories of ratios.
- Analyse cost-volume-profit and margins for financial and business decision.
- Deduce full unit cost in both single and multi product/service environments.
- Use a budget to provide a means of exercising control over a business.
- Explain and apply investment appraisal methods to decide on an investment opportunity.

**Content**

Engineering project management (40%)
- Project initiation-acceptance-definition.
- Project analysis-planning-scheduling-control.
- WBS-work packages-budgeting-costing-contracts.
- Contract planning, control, documentation, specifications, cost accounting systems, subcontracts.
- Engineering project manager roles, characteristics, traits, ethics.
- Accounting for engineers (20%).
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 (75%):
- 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 4P's 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**

**Aims & Objectives**

To gain the skills required to perform scientific research that will make a contribution to the understanding of a particular area of science, and to be able to present the work both in the written format, and as an oral presentation.

**Content**
The content of the research project will depend on the project being undertaken.

**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

**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
- Cell Culture
- Expression Systems
- Epidemiology of Enteric Viruses
- Bioremediation
- Bioinformatics
- Honours Report Writing
- Multimedia Presentation
- Industrial Enzyme Technology

**Reading Materials**
To be notified by the lecturers concerned.

**HES5580 Biotechnology/ Biochemistry Honours Project**

70 Credit Points  •  2 Semesters  •  10 Hours per Week Minimum  •  Hawthorn  •  Prerequisite: Acceptance into Honours Course  •  Teaching methods: Project Supervision  •  Assessment: Honours report, Oral presentation

**Aims & Objectives**

To gain the skills required to perform scientific research that will make a contribution to the understanding of a particular area of science, and to be able to present the work both in the written format and as an oral presentation.

**Content**
The content of the research project will depend on the project being undertaken.

**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

**Aims & Objectives**

To provide an understanding of the philosophy and terminology concerning the idea of risk.
- To provide an understanding of the nature of human perception and experience of risk.
- To recognise situations where potential loss occurs and how humans respond to these situations.
- To understand the general principles and practical techniques of risk identification, assessment, analysis and control.

**Content**
Risk terminology and system modelling:
- Nature and origin of uncertainty.
- Historical overview of risk, phenomenology of risk and application of the scientific method.
- Risk measurement, risk diagrams and analysis of risk related data; recording of data.
• Concepts of causation; objectivity and subjectivity related to risk occurrence.
• Types of risk: voluntary and involuntary.

Human perception of risk:
• Human response to uncertainty and risk, terminology and concepts.
• Social cognition, perception; personal and social attribution with regard to risk; attitudes and attitude change; motivation; theory of cognitive dissonance.

Risk analysis and use of modelling
• Application of risk estimation, psychological, energy damage and generalised time sequence models to occurrence investigation.
Risk estimation and loss rate concept:
• Sources of risk data - probability, failure and reliability.
Fault tree and event trees analysis:
• Techniques and applications.
Failure modes and effects analysis and HAZOPS (Hazard and Operability Studies).

Priority Planning Matrices.

Reading Materials
Selected papers and course notes.
Viner, D, Accident Analysis and Risk Control, VJ R Delphi, Melbourne, 1994.

HET103 Photons 1
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, 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 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
Hecht, E, Optics, Addison Wesley, 1989.

Recommended Reading
• 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 by layer.
• Compare and contrast static versus dynamic routing, routed protocols versus routing protocols, and distance vector versus link state routing.
• 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 and routing protocols, IGPs and EIGPs, and RIP and IGRP.
• Apply Access Control Lists to a Router.

Content
• Networks and Layers, Networking Devices.
• IP Addressing, ARP & RARP.
• Media and Design, Topology, Structured Cabling.
• Electricity and Electronics.
• Network Management.
• OSI Model, Layers 1–7.
• WANs.
• Routing, Using the Router, Router Components.
• Router Startup & Setup, Router Configuration.
• IOS.
• TCP/IP.
• IP Addressing.
• Routing Protocols.
• Access Control Lists (ACLs).

Reading Materials

HET105 Professional Skills - Telecommunications
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Labs and Tutorials • Assessment: Assignments, Examinations, Journal, Project (50%): EDA tools, Intro to schematic capture, Intro to electronic components and printed circuit board manufacture. PCB layout.

Aims & Objectives
• To improve students’ communications skills for their future role as professional engineers.
• To improve the student’s ability to gather and use information.
• To develop and improve teamwork skills, particularly team organisation, negotiation and decision-making.

Project component:
• Learn the basics of Schematic Capture and PCB layout
• Design and construct a simple telecommunications device.

Content
Communications and professional skills (50%):
• What is engineering and what do engineers do?
• History of engineering.
• The culture of the engineering profession and ethical responsibilities.
• Design problem definition and solution.
• The design process.
• The role of communications in engineering.
• Oral communication skills and formal technical report writing.
• Teamwork and team management skills.
• Engineers and the environment.

Reading Materials

HET113 The Internet and World Wide Web 1
12.5 Credit Points • 1 Semester • Average of 2.5 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lecture, Laboratory-based Exercises and Practical Work • Assessment: Assignments, Test and 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 introduce the Internet, World Wide Web and associated local and wide-area network issues.

Content
• What is the Internet and how does it work?
• How the World Wide Web operates across the Internet.
• HTML and WYSIWYG web authoring tools.
• CSS and XML.
• Internet tools: Telnet, FTP etc.
• How web browsers work.
• Bandwidth issues and relevant trade-offs.
• Graphics files: size, download times and formats.
• Copyright on the Internet (source code, images, designs etc., use of other work, sampling).
• Website security and intranets.
• Web search technologies and strategies.
• Email.
• Online synchronous and asynchronous communications.

Reading Materials

HET120 Interactive Games Structures
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Lecture, seminar and tutorial based learning with ongoing practical experience through assignments, research exercises and set tasks. • Assessment: Assignments

A subject in the Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
• To introduce students to the fundamental ideas behind both non-electronic and electronic games;
• To develop a vocabulary to critically analyse games and game structures;
• To explore game narrative and development within an interactive storytelling environment, and
• To explore concepts of interactivity and player immersion.

Content
This subject introduces students to concepts of game-play in both non-electronic and electronic formats. Students will look at the mechanics of writing, storyboarding and developing a work of interactive fiction. Topics will include:
• History of games
• Issues of gameplay
• Game criticism
• Narrative in games
• Experiences and experience-centred game-play models
• Social issues of interactivity and game-play
• Game culture
• Genre studies

Reading Materials
Weekly journal readings

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 Science (Computer Science & Software Engineering), Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Biotechnology), Bachelor of Business, Bachelor of Engineering (Biomedical Engineering), 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 (Mechanical), Bachelor of Engineering (Mechanical)/ Bachelor of Business; Bachelor of Engineering (Product Design), Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics) / 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 (Photonics), Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Psychology/Psychophysics), Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Technology (Air Transportation Management), Bachelor of Technology (Air Transportation Management) / Bachelor of Business, Bachelor of Technology (Aviation), and Bachelor of Technology (Aviation) / Bachelor of Business.

Aims & Objectives
HET123 introduces the functionality of Web page programming to achieve greater interactivity of websites and the development of data-driven websites. Several different technologies for Web page programming will be explored, and associated issues examined.

Content
Content:
• Website design and usability principles
• Basic programming concepts
• HTML and forms
• DHTML concepts
• Web authoring software (Dreamweaver)
• Basic database structure and design, including SQL
• Document object model
• Client-side Web scripting (JavaScript)
• Server-side Web scripting (ASP)
• Unix basics
• NT server basics
• Web security issues

Reading Materials

HET124 Energy and Motion
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn
Prerequisite: Nil
Teaching methods: Lectures, Tutorials and Practical Work • Assessment: Examinations, Pracs, Tutorials

A subject in the Bachelor of Engineering (Biomedical Engineering), Bachelor of Engineering (Biotechnology), Bachelor of Engineering (Biotechnology)/Bachelor of Business, Bachelor of Engineering (Biotechnology)/Bachelor of Science (Biotechnology), Bachelor of Engineering (Civil), Bachelor of Engineering (Civil)/Bachelor of Business, 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 (Mechanical), Bachelor of Engineering (Mechanical)/ Bachelor of Business; Bachelor of Engineering (Product Design), Bachelor of Engineering (Robotics & Mechatronics), Bachelor of Engineering (Robotics & Mechatronics) / 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 (Photonics), Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Psychology/Psychophysics), Bachelor of Science (Research and Development) / Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Technology (Air Transportation Management), Bachelor of Technology (Air Transportation Management) / Bachelor of Business, Bachelor of Technology (Aviation), and Bachelor of Technology (Aviation) / Bachelor of Business.

Aims & Objectives
To provide a coherent and balanced account of energy and motion, emphasising their applications and importance in an engineering context.

Content
• Linear mechanics: 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.

Reading Materials
Serway, R.A., Principles of Physics, Saunders, 3rd edn, 2002

HET125 Physics of Games
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn
Prerequisite: Nil
Corequisites: HM5123 - Teaching methods: Laboratory and lecture based tuition with continual practical experience through exercises and set tasks.
Assessment: Major Assignment, Hurdle Tasks, Practical Examination

A subject in the Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Computer Science and Software Engineering).

Aims & Objectives
To provide an introduction to the practical application of physics concepts within computer and videogames through gameplay analysis and game and simulation design.

By completing this course students will be able to distinguish accurate modelling of in-game physics from inaccurate models. Students will also be able to perform basic calculations for modelling objects in motion.

Content
This subject involves an introduction to the application of physics in computer and videogames focusing on the areas of: (i) real-time physics modelling, (ii) physics of sound, and (iii) physics of 3D computer graphics. By playing and analysing games and simulations, students develop an understanding of the physics they adopt.

(i) Real-Time Physics Modelling
• Newton’s Laws of Motion (e.g., Asteroids, Spacewar, Lunar Lander)
• Coordinate systems and vectors (e.g., Missile Command, Pac Man, Civilization III)
• Forward and inverse kinematics (e.g., Doom III)
• Projectile Motion (e.g., Sydney 2000, Raster Blaster, 3D Pinball)
• Centre of Mass and Momentum of Inertia (e.g., Transformers Armada)
• Momentum (e.g., Marble Madness, Real Pool, Pong)
• Rotational Motion (e.g., Prop Cycle, camera movement in Tomb Raider III, Jaku Daxter, Tee Off Golf)
• Force and Gravitation (e.g., Grand Prix Challenge, Lunar Lander, Doom II, Gravitar).
- Oscillatory Motion (e.g., Colin M’Crae Rally, [plus cameras within games use damping])
- Collisions (e.g., Marble Madness, Havok Physics Engine games such as Max Payne 2 and Unreal Tournament 2003)
- Particle Systems (e.g., Fantavision for PS2)
- Biomechanics of Character Animation (e.g., Quake 2, Sydney 2000)

(ii) Physics of Sound
- Wave motion and Wavesforms (e.g. Vib Ribbon, [plus water within games])
- Wave frequency, velocity, amplitude, period (e.g. Rez, M usic 2000)
- Wave Superposition and Interference (e.g., Vib Ribbon, M usic 2000)
- Wave Reflection and Transmission (e.g. Quake, Unreal Tournament, Half-Life)
- Doppler Effect and Attenuation (e.g. Quake, Unreal Tournament, Half-Life)

(i) Physics of 3D Computer Graphics
- Viewing in 3D, view frustum, clipping planes, focal length, depth of field (e.g., Colin M’Crae Rally)
- Lighting in 3D, source types, colour, decay and fall-off (e.g., Doom III, Rayman 2)
- Shading, types of shading (faceted, smooth, specular), image mapping (e.g., Starblade [flat], Ridge Racer [gouraud], Metal Gear Solid 2 [specular])
- Surface reflection and refraction (e.g., fire and water within games like Doom and Prince of Persia)

Reading Materials
Eberly, DH, Game Physics, Morgan Kaufmann, 2003.

HET128 Physics 2
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: HET118 and either HET119 or HET124 • Teaching methods: Lectures and Tutorials • Assessment: 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 Science (Research and Development) (Bachelor of Engineering (Electronic & Computer Systems), Bachelor of Science (Photonics), Bachelor of Science (Photonics), Bachelor of Engineering (Telecommunications & Internet Technologies).

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.
- Any 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.

Reading Materials

HET133 Human Physiology
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET102 • Teaching methods: Lectures and Laboratories • Assessment: Examinations, Pracs
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

Reading Materials

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.

Reading Materials
Reddick, R & King, E, The Online Student, Harcourt Brace, Texas, 1997.

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 in Business (Business), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Business, Bachelor of Engineering (Mechanical), Bachelor of Engineering in Business/Bachelor of Business, Bachelor of Engineering in Product Design, Bachelor of Engineering in Robotics & Mechatronics, Bachelor of Engineering in Robotics & Mechatronics/Bachelor of Science in Computer Science & Software Engineering, Bachelor of Engineering in Telecommunications & Internet Technologies, Bachelor of Engineering in Telecommunications & Internet Technologies/Bachelor of Science in Computer Science & Software Engineering, Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering in Telecommunications & Internet Technologies, Bachelor of Science in Biomedical Sciences, Bachelor of Science in Biomedical Sciences/Bachelor of Science in Engineering (Electronics & Computer Systems), Bachelor of Science in Engineering (Electronics & Computer Systems)/Bachelor of Science in Engineering (Electronics & Computer Systems), Bachelor of Science in Engineering (Electronics & Computer Systems)/Bachelor of Science in Engineering (Electronics & Computer Systems), Bachelor of Science in Engineering (Electronics & Computer Systems)/Bachelor of Science in Engineering (Electronics & 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, Kirchhoff’s laws series and parallel circuits, 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.

Reading Materials

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, Projects

A subject in the Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering in Robotics & Mechatronics, Bachelor of Engineering in Robotics & Mechatronics/Bachelor of Applied Science in Computer Science & Software Engineering, Bachelor of Engineering in Telecommunications & Internet Technologies, Bachelor of Multimedia (Networks & Computing)/Bachelor of Engineering in Telecommunications & Internet Technologies, Bachelor of Science in Biomedical Sciences/Bachelor of Engineering in Electronics & Computer Systems, Bachelor of Science in Engineering (Electronics & Computer Systems), Bachelor of Science in Engineering (Electronics & Computer Systems), Bachelor of Science in Engineering (Electronics & Computer Systems)/Bachelor of Science in Engineering (Electronics & Computer Systems).

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
• M ap and Tabulation Methods
• Technology M apping for Gate Arrays
• Hazard-free Design

Introduction to CMOS Logic Circuits
• Combinatorial Components
• Adders/Subtractors
• Logic and Arithmetic Units
• Decoders/Selectors
• Buses
• Priority Encoders
• M agitude Comparators
• Shifters and Rotators
• M ultiplexers

Programmable Logic Devices
• Read Only Memory
• Programmable Logic Arrays (PLAs)
Upon completion of this unit, students should be able to:

- basic concept of optoelectronics, and an introduction to photonic devices.

**Aims & Objectives**

A subject in the Bachelor of Science (Photonics), Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies).

**Content**

- Describe the importance of laser technology in R&D laser applications,
- Describe the physical principles underlying the various types of laser systems,
- Determine the conditions required for lasing action,
- Describe (in terms of the various absorption and emission processes) the various interactions of light and matter,
- Discuss the concept of coherence for both coherent and non-coherent light sources.
- Describe and interpret interference and diffraction patterns.
- Describe the basic operating principles of holography and produce a practical hologram.

**Textbook**


**Recommended Reading**


**HET203 Photonics 2**

12.5 Credit Points 1 Semester 5 Hours per Week Hawthorn Prerequisite: HET103 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 the fundamental principles underlying the operation of lasers, and to highlight some applications of laser systems in industry and research.

Upon completion of this unit, students should be able to:

- Describe the various interactions of light and matter.
- Determine the conditions required for lasing action.
- Describe the physical principles underlying the various types of laser systems.
- Describe the importance of laser technology in R&D laser applications, especially in optical telecommunications.

**Content**

- Interaction of Radiation with Matter.
- Lineshapes.
- Gain.
- Optical Cavities.
- Three and Four Level lasers.
- Efficiency.
- Threshold Operation.
- Laser Oscillations.
- Laser Application.

**Textbook**


**Recommended Reading**


**HET205 Introduction to Modern Optics**

12.5 Credit Points 1 Semester 5 Hours per Week Hawthorn Prerequisite: HET103 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**


**HET204 Photonics 3**

12.5 Credit Points 1 Semester 5 Hours per Week Hawthorn Prerequisite: HET103 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 aims of this subject are to provide students with a solid understanding of basic concept of optoelectronics, and an introduction to photonic devices.

Upon completion of this unit, students should be able to:

- Calculate characteristic physical parameters for various optical devices (e.g. coated optics, amplitude modulators, phase modulators, harmonic generation crystals etc.) based on their underlying operating principles.
- Select and characterise appropriate photonic transducers (sources/detectors) based on bandwidth, sensitivity and noise performance characteristics.
• 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.
• Bound states.
• Harmonic oscillator.
• Angular momentum.
• Spin wavefunctions.
• The hydrogen atom.

Special Relativity:
• Historical context.
• Einstein’s postulates.
• Lorentz transformations.
• Relativistic kinematics.
• Relativistic dynamics.
• Force, energy, momentum.
• Transformation of electromagnetic fields.

Atomic Physics/Laser Spectroscopy:
• Absorption.
• Induced and spontaneous emission of light.
• Spectroscopic notation.
• Transition probabilities.
• Spectral profiles.
• Linewidth.
• Broadening mechanisms.
• Absorption and fluorescence spectroscopy.
• Non-linear spectroscopy.
• Ultrafast spectroscopy.

Textbooks

Recommended Reading

HET207 Modelling & Simulation Projects
12.5 Credit Points · 1 Semester · 5 Hours per Week · Hawthorn · Prerequisite: Nil
- Teaching methods: Introductory Lectures, Tutorials, Workshops · Assessment: Assignments, Project(s)

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 expose students to a number of computer modelling/simulation software packages (symbolic mathematics, data analysis, data acquisition etc.) and to explore complex problems in engineering and physics contexts via structured simulation projects. Additionally, students will also manage a major, open-ended team project, which will encourage the creative application and extension of the core material.

Upon completion of this unit, students should be able to:
• Use several common simulation software packages, and to select and apply the appropriate package to solve several science and engineering problems.
• Manage personnel and technical resources in an open-ended team project.
• Communicate project milestones and progress at weekly meetings, and present a research seminar upon project completion.

Content
• Statistics and the modelling process.
• Exploration of a selection of engineering and scientific problems (both theoretical and experimental) using a number of different modelling and simulation software packages (e.g. Mathemtica, MatLab, LabView etc.).
• A major team project (building on experience gained in the fundamental modelling and simulation problems from the first section of the subject).

Recommended Reading

HET208 3D Modelling and Animation
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.
• Particle and space warps.
• Rendering and post effects.
• Network rendering and management.
• The business of 3D.

Reading Materials

HET209 Fibre Optics Communication & Optical Instrumentation
12.5 Credit Points · 1 Semester · 5 Hours per Week · Hawthorn · Prerequisite: HET417
- Teaching methods: Lectures, Tutorials, 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.
Introduction to Discrete Devices: Diode, VI Characteristics, Lumped Linear Analog Electronics:

To develop a basic understanding of discrete electronic components, such as transistors, large and small signal models.

Amplifiers: Input and Output Impedance, Loading Effects, Voltage Gain, Current Gain, Power Gain, Frequency.

Response Classifications, Bode Diagrams.


Filters: Second Order Active Filters, LP, HP, BP Filter Examples.


Non-Linear Op-Amp Applications: Clipping and Clamping Circuits, Precision Diode, Peak Detector, Comparators.

Digital Electronics:

- Combinational Logic.
- SSI & MSI Building Blocks: Adders, Subtractors, ALU's, Multiplexers, Demultiplexers, Encoders, Decoders.
- Sequential Logic (Latches and Flip-Flops), MSI Building Blocks (Counters, Registers, Shift Registers).
- Logic Levels and Compatibility.
- Three-State and Open Collector Outputs.
- Programmable Devices: ROMs, PLAs, PALs.

The Design of a CPU as a Major Application Example.

**Textbooks**


**References**


**HET210 Electronics**

12.5 Credit Points, 1 Semester, 5.5 Hours per Week - Hawthorn - Prerequisite: HET182 & HUM112 + 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 (Electronics & Computer Systems) / Bachelor of Business, 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 (Electronics & Computer Systems) / Bachelor of Engineering (Robotics & Mechatronics) / Bachelor of Applied 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:

- Introduction to Discrete Devices: Diode, VI Characteristics, Lumped Linear Models.

**HET213 User Experience Design**

12.5 Credit Points, 1 Semester, 5.5 Hours per Week - Hawthorn - Prerequisite: Nil + Teaching methods: Lectures, Tutorials, Online Delivery + Assessment: Assignments, Tests, Tutorials, Examination

A subject in the Bachelor of Multimedia suite of programs.

**Aims & Objectives**

HET213 introduces the concept of experience design and its importance in the networked economy. In the era of eCommerce and eBusiness, companies often overlook the importance of the customer experience. Launch deadlines and million-dollar marketing campaigns can take precedence over fundamentals like navigation, search, usability and the needs of the real user. In order to succeed in the online market, the experience that customers have on the website must be recognised and improved. The understanding & skills gained in this subject will help students to design effective user environments for multimedia applications.

**Content**

- Introduction to the User Experience
- Understanding the Business
- Effective Branding
- Understanding the User
- Effective Information Architecture
- User Interface Design
- Prototyping and Documentation
- Usability Testing
- M odels of Communication
- M odels of Learning
- Designing for Learning
- M thods of Evaluation


Textbooks
Lecture handouts containing relevant course material. There is no prescribed textbook for this subject.

References

HET214 Circuits and Electronics I
12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: HET212 and HET192
Teaching methods: Lectures, Tutorials and Laboratory Reports • Assessment: Assignments, Examinations, Lab Reports

A subject in the Bachelor of Engineering (Biomedical Engineering), Bachelor of Electrical 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 Applied Computer Science (Computer Science & Engineering), Bachelor of Engineering (Telecommunications & Internet Technologies), 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 (Computer Science & Software Engineering)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Photonics), Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies), Bachelor of Science (Research & Development)/Bachelor of Engineering (Electronics & Computer Systems).

Aims & Objectives

- To develop circuit analysis skills which form the foundation of later electronic and computer engineering subjects, including electronics, controls, fields and power systems.
- Introduce the students to basics of discrete electronic components, such as diodes and transistors and their characteristics and applications.

Content

- Review of circuit analysis techniques.
- Network theorems.
- Response of first-order RC and RL circuits.
- Sinusoidal analysis.
- Multi-transistor amplifiers

Textbooks
Alexander, CK & Sadiku, M NO, Fundamentals of Electric Circuits, 2nd edn, M Crawl-Hill, 2004

HET219 Neurological Monitoring
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET102 and HET148 or HET202
Teaching methods: Lectures and Laboratory Work • Assessment: Computer-Based Tests, Examinations, Labs

A subject in the Bachelor of Arts (Psychology/Psychophysiology) and Bachelor of Science (Psychology/Psychophysiology).

Aims & Objectives

- To provide an understanding of the techniques available for recording brain and other electrical activity measures from the body, and to interpret the recorded information obtained from electrical activity measures.

Content

- Electrophysiological recording techniques, including EEG, ENG, EMG, EOG, and ECG.
- International 10-20 system, electrodes and recording arrangements, spontaneous EEG, origins of the EEG, and the evoked potential, event-related potentials, recording and analysis techniques.
- Neurological clinical tests: application of EEGs, evoked potentials, integrity of pathways (sensory and motor), lesion and stimulation studies.
- Measures of cognitive function: applications of ERP techniques to attention and cognition.
- Advanced instrumentation.
- Computer-based recording techniques.
- Advanced statistical analysis: experimental methodology and design.
- EEG and EMG apping techniques.
- A methodological issues associated with the use of electrophysiological techniques.
- Other measurements of neurological function: eye movements.
- Functional and structural brain imaging.

Textbooks

HET222 Digital Video and Audio
12.5 Credit Points • 1 Semester • 4.25 Hours per Week (on average) • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, Laboratory Sessions • Assessment: Assignments, Computer-Based Tests, Discussion Threads, Labs

A subject in the Bachelor of Multimedia Suite of programs.

Aims & Objectives

HET222 introduces the concept of non-linear video and audio editing using digital video and audio technology. It will equip students with the basic skills required to capture and edit video and audio material, and to master a variety of formats, including video cassette, 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
- Internet video
- Digital audio theory & physics of sound
- Audio recording and playback
- Random access / non-destructive editing
- Digital signal processing
- Audio file formats and compression
- Internet audio
- Digital audio disk and tape media

Reading Materials
Lecture handouts containing relevant course material. There is no prescribed textbook for this subject.

HET224 Computer Communications and LAN’s

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: Nil
- 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 Test, Assignments, Laboratory Work and Written Final Exam

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), 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 Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Science (Photonics), and Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies).

Aims & Objectives
The student should be able to:
- Understand and describe the techniques and technologies of modern Internet Protocol (IP) based LAN and computer communications.
- Analyse IP addressing and subnetting.
- Select and implement physical media.
- Make informed design choices for implementing such LANs.

Content
Computing Basics
The OSI Model
Local Area Networks
- Layer 1: Electronics & Signals
- Layer 1: Media, Connections & Collisions
- Layer 2: Concepts
- Layer 2: Technologies
Design & Documentation
Structured Cabling Project
- Layer 3: Routing & Addressing
- Layer 3: Protocols

- Layer 4: The Transport Layer
- Layer 5: The Session Layer
- Layer 6: The Presentation Layer
- Layer 7: The Application Layer

Reading Materials
Cisco Networking Academy Program Online Curriculum Cisco-Semester-1 (all modules)

HET225 Electrical Machines

12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: HET182 and HMS213 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.
- EM F 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.
- EM F 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 waveshapes 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.

Reading Materials

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.

Reading Materials

HET227 Neurophysiology
12.5 Credit Points  1 Semester  4 Hours per Week  Hawthorn  Prerequisite: HET133 and either HET148 or HET182  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, 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.
- Neurourology: Introduction to interactions between nervous system and hormones, effects on metabolism and arousal, hypothalamic-pituitary interactions and axis, hypothalamic-pituitary-adrenal axis, control and homeostasis.

Reading Materials

HET230 Cardiovascular Biophysics
12.5 Credit Points  1 Semester  4.5 Hours per Week  Hawthorn  Prerequisite: HET240  Teaching methods: Practicals 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 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.

Reading Materials

HET231 Perception and Motor Systems
12.5 Credit Points  1 Semester  4 Hours per Week  Hawthorn  Prerequisite: HET227 and HET219  Teaching methods: Lectures, Laboratory Work and Online/ Flexible Delivery  - Assessment: Assignments, Pracs
A subject in the 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.
- Motor system: peripheral effectors, muscle spindle, feedback, cortical regions, cerebellum, subcortical regions, motor pathways, control of movement, disorders of movement, Parkinson's disease, chorea.
- Early historical developments in neuroscience.
- The development of notions of cortical localisation of function.
- Cortical mapping of motor and sensory function.
- Cortical plasticity, sensory remapping and phantom limb phenomena.
- cerebellar function.
- Perception including optical and other illusions.
- Human performance.
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.
  - M odulation.
  - 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.

Reading Materials


HET240  Cellular Biophysics

12.5 Credit Points  •  1 Semester  •  5 Hours per Week  •  Hawthorn  •  Prerequisite: HET133 and either 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

- M embrane 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, Ussing flux ratio equation ‘pore’ hypothesis.
- Properties of electrodes: Measurement of intracellular potentials; electrode processes; half cell potentials – overpotentials, high impedance, microelectrodes, recording arrangements. Electrical and volume conduction properties of nerves; cable model.
• Experimental techniques: voltage clamping and patch clamping, Hodgkin-Huxley model. The action potential: strength-duration curves, neuropathies.
• Pre-and post-synaptic processes: inhibitors and agonists; statistical analysis of meps; receptors and neurotransmitters: types and mode of operation; inhibitory and excitatory neurons, integrative functions of soma.
• Muscle: length tension relationships, Hill equation, ultrastructure, excitation-contraction coupling, sliding filament theory, metabolic aspects, E-C coupling in smooth muscle, pathophysiology of muscle, electromyography; Cellular basis of muscle fatigue. Performance consideration; metabolism and energetics.

**Reading Materials**

**HET260 Renal and Respiratory Biophysics**

12.5 Credit Points • 1 Semester • 4.5 Hours per Week • Hawthorn • Prerequisite: 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**
Respiratory System:
• Structure and function.
• Lung volumes and dead space.
• Diffusion.
• Blood flow.
• Ventilation perfusion inequality.
• Gas transport.
• Bohr and Haldane effects.
• Acid/base balance.
• Respiratory mechanics.
• Control of respiration.
• Lung function testing and lung diseases.
• Obstruction.
• Restriction.
• Flow/volume curves.
• Diffusion capacity.
• Compliance.
• Body plethysmography.

Respiratory Instrumentation:
• Exercise biophysics: respiratory changes associated with exercise.
• Anaesthesia: agents and their administration.
• Monitoring, physiological effects of anaesthesia.

Sleep Monitoring:
• Monitoring the respiratory processes associated with sleep, and disorders of sleep.
• Neonatal monitoring.
• Basic EEG.

Renal Biophysics:
• Vasculature.
• The juxtaglomerular apparatus.
• Kidney function tests.
• Countercurrent multiplication.
• Control of kidney function.

• Renal pathophysiology.
• The artificial kidney.

**Reading Materials**
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, Imd, Pidp ppd SSS Sendmail
- Bridges, routers, and gateways
- NAT, firewalls
- TcpDump and other tools

Reading Materials
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

Reading Materials
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: HET310 + 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 Engineering (Electronics & Computer Systems)\{Bachelor of Arts, Bachelor of Engineering (Electronics & Computer Systems)\}Bachelor of Business.

Note: This subject will be replaced by HET308 Circuits and Electronics 2 in 2006.

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
- BJ T: 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 PS/PICE.
- MOSFETs: models, biasing, DC and AC analysis and applications.
- Power Electronics
- Devices: Diodes, BJ T, SCRs, Triacs, GTOs, BJ Ts and MOSFETs.
- Applications: Controlled rectification, inversion and pulse width modulation, switch mode power supplies and heat sinks.

Reading Materials

HET312  Control and Automation

12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: HET212 and either HM 5213 or HM 5211 + 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 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 (Electronics & Computer Systems)\}Bachelor of Business, Bachelor of Science (Robotics & Mechatronics) and 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-planes and Bode diagrams.
- An introduction to state variable analysis.
- Application of specialist computer packages such as Matlab.

Feedback of Control Systems:
- Basic concepts of negative and its advantages.
- Analysis of feedback control systems using specialized techniques, root locus diagrams and frequency response analysis.
- Steady state performance using the final value theorem.
- Basic compensation techniques using 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.

Reading Materials

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 (LF, MF, HF and beyond)
- Digital voice: PCM and the concept of time division multiplexing
- Computer network connections for LANs and WANs with a data link layer emphasis
HET314 Communications Principles

12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: HET312 (Effective semester 1, 2004.) • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Tests, Examinations, Pracs

A subject in the Bachelor of Engineering (Telecommunications and Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), Bachelor of Science (Research and Development)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Technology (Electronics & Computer Systems)/Bachelor of Business, Bachelor of Engineering (Biomedical Engineering), Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Multimedia (Network and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Science (Photonics), and Bachelor of Science (Photonics)/Bachelor of Engineering (Telecommunications & Internet Technologies)

Aims & Objectives
• The student should become familiar with common terminology, concepts, equipment and techniques of signal processing for communications.
• The student should be able to explain, justify, analyse and critically evaluate common signal processing concepts and methods.
• The student should be able to analyse the performance of various modulation methods for analogue and digital transmission, evaluate the effect of noise on signal reception and assemble signal processing modules to implement communications systems.

Content
• Analogue signals, spectral (fourier) analysis, bandwidth, ideal and real filters, transfer functions, amplitude and phase response, energy and power spectra.
• Analogue modulation and demodulation: amplitude, frequency, phase.
• Noise and its effects in analogue communication systems.
• Receivers.
• Commercial broadcasting: radio and television.
• Pulse modulation.
• Sampling theorem.
• Pulse amplitude modulation, time division and frequency division multiplexing, pulse code modulation.
• Digital signals: digital line codes, modulation and demodulation of ASK, PSK, FSK, DPSK, QAM, OQPSK.
• Noise and its effects in digital communication systems, BER, analysis of digital modulation schemes.

Reading Materials

HET315 Communications Information Theory

12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: HET314 and HM5214 • Teaching methods: Lectures, Tutorials and Laboratory Work • Assessment: Assignments, Examinations, Lab Reports, Tutorial Tests

A subject in the Bachelor of Engineering (Telecommunications and 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 Technology (Electronics & Computer Systems), Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Multimedia (Network and Computing)/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 (de 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: HM5214 • 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.
• EM radiation and EM compatibility, shielding and noise reduction techniques.
• Electromagnetic safety and standards.

Reading Materials
HET320  Psychophysiological Project

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

Aims & Objectives
To provide hands-on development with Flash and database integration to produce rich media dynamic 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.

Reading Materials
Archontakis, P et. al., Flash 5 Dynamic Content Studio, Friends of Ed, 2001

HET325  Principles of Game Design

Aims & Objectives
- To develop an understanding of the design and development of multimedia games
- To introduce a range of game principles and methodologies
- To explore notions of narrative, storyboard, character and visual literacy particular to game playing milieux
- To introduce students to game programming fundamentals

Content
Principles of Game Design introduces students to the fundamentals of designing electronic games. Students apply previously developed skills to the design and implementation of a game of their choice through various projects. Students will be introduced to programming and basic interactive design for multimedia games during the semester through laboratory-based assignment work.

- Game rules and play mechanics
- Development and evaluation of game concepts
- Game theory
- Assessment and selection of game platforms
- Visual literacy and communication
- Learning curves, game addiction and longevity
- Spatial and Interface design
- Artificial Intelligence, Avatars and control schemes
- User-testing and User Analysis
- Audio design
- The Business of gaming

Reading Materials

HET329  Digital Signal and Image Processing

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.
HET336  Network Engineering

12.5 Credit Points  1 Semester  5.5 Hours per Week (average)  • Hawthorn  • Prerequisite: HET215  • Teaching methods: Lectures, Tutorials and Laboratory Work  • Assessment: Assignments, Examinations, Pracs

A subject in the Bachelor of Engineering (Electronics and Computer Systems), Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Applied Science (Computer Science & Software Engineering), BEng (Telecommunications & Internet Technologies) and BMultimedia (Networks & Computing)/BEng (Telecommunications & Internet Technologies).

Aims & Objectives

The student should be able to analyse the performance of various telecommunication networks subject to stochastic traffic, by applying relevant queuing theory, and design networks using graph and queuing theory.

Content

• Introduction to networks and their design; Types of networks, design issues, design support data, design tools.
• Review of random processes: The Poisson process; proof of Poisson distribution; properties of Poisson distribution: normalisation, mean, variance, time to first event; sums of Poisson processes; memoryless processes.
• Link models for circuit switching.
• Telephone traffic: call initiation, length of calls, traffic and the Erlang: Erlang Loss function, blocking probability, carried traffic, lost traffic, grade of service, time congestion vs call congestion, PASTA, truncating efficiency, validity of the Erlang loss function, The Engset model, state distribution, time congestion, call congestion, properties of the Engset model. Circuit switched link dimensioning.
• Link models for packet switching: The M/M/1 queue, queue length distribution, mean queue length, mean delay, Little’s formula; M/M/1 queue with finite buffer; state-dependent queues: M/M/2; M/M/¥.
• Packet switched link dimensioning.
• M odeling networks as graphs: terminology, representation of networks, computational complexity.
• Graph algorithms.
• Trees: shortest paths, single commodity network flows.
• Centralised network design.
• Problem definition, terminal assignment, concentrator location.
• Routing and flow control routing procedures, flow deviation algorithm.
• Network layer protocols, analysis of sliding window flow control.
• Network reliability, tree networks, mesh networks.

Reading Materials


HET332  Interactive Multimedia

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 Multimedia (Business Marketing), Bachelor of Multimedia (Media Studies), Bachelor of Multimedia (Multimedia Software Development), Bachelor of Multimedia (Networks & Computing), and the Bachelor of Multimedia.

Aims & Objectives

To extend multimedia development and production skills to a professional level.

Content

• Thorough understanding of the strengths of different authoring environments.
• Basic understanding of software and programming issues in multimedia.
• Advanced scripting techniques for web-based multimedia.
• Advanced scripting techniques for CDROM multimedia development.
• Understanding programming standards, naming conventions and syntax.
• Working with predefined and custom objects.
• Debugging in different authoring environments.
• Developing game concepts.
• Packaging your software.

Reading Materials

be involved in considering the practical partitioning of a system between software, mechanical and electrical/electronic components.

- To further develop team skills in cooperation, coordination and scheduling of time and resources.

**Content**

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. (analog and digital).
- Real time constraints in programming embedded systems.
- The use of multitasking and event driven programming.
- The use of CAE Tools in Electronic Design.

**Reading Materials**


**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.

**Reading Materials**

Perry, D., VHDL, McGraw Hill.

Armstrong, J. & Gary, F., Structured Logic Design with VHDL, Prentice Hall.

Bhasker, J., A VHDL Primer, Prentice Hall.


IEEE Design & Test of Computer Systems.


**HET400 Industry-Based Learning**

50 Credit Points • 1 Semester • No formal classes. Students are expected to work full-time (or equivalent hours equal to 38 hours per week for 24 weeks) in their industry placement position and to attend a pre-IBL information session plus a post-IBL debriefing session. • External Venue • Prerequisite: HET300. See also eligibility requirements at the IBL website http://www.swin.edu.au/bsee/ibl •

Teaching methods: Mentoring, Industry Practice, Industry Supervision, Academic Supervision, Assessment of a Written IBL Report • Assessment: IBL is assessed on a Pass/Fail basis in regard to the written IBL report and feedback from the employer.

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 (Networks & Computing), Bachelor of Science (Computer Science & Software Engineering)/Bachelor of Engineering (Telecommunications & Internet Technologies), 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 Engineering), Bachelor of Engineering Electronics & Computer Systems, Bachelor of Science (Photonics), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Photonics) / Bachelor of Engineering (Telecommunications & Internet Technologies).

**Aims & Objectives**

Industry-Based Learning within the School of Biophysical Sciences and Electrical Engineering offers co-curricula work experience in a trainee-professional position for eligible students undertaking studies towards the undergraduate degree and associated double degree programs.

The objectives of IBL are:

- To provide students with an opportunity to consolidate the attributes developed in the undergraduate course, by challenging and developing their understandings, abilities and attitudes through experiential learning, in order to develop competence towards the professional level;
- To complete at least 24 weeks of full-time paid employment in an appropriate industrial setting related to the undergraduate course;
- 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 each semester via a written IBL Report;
- To communicate professionally in written and oral forms;
- To establish and refine personal and professional 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, opportunities and threats in employment work groups, industrial relations and the student's intended career path;
- To reflect and build an awareness of on one's own strengths and weaknesses, likes and dislikes, and opportunities and threats;
- To understand and apply quality control and assurance techniques; and
- To establish contacts and networks that may lead to employment.

**Content**

The employer in consultation with the IBL Academic Coordinator establishes work requirements.

**HET401 Multimedia Project 1**

12.5 Credit Points • 1 Semester • Variable depending on project: typically an average of 1 hour per week • Hawthorn • Prerequisite: HET212 (or corequisite), requires successful previous completion of 175 CP of subjects (75 CP in the case of 175 CP) • Assessment: IBL is assessed on a Pass/Fail basis in regard to the written IBL report and feedback from the employer.

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 useability testing and the development of some form of deliverable.

The Bachelor of Multimedia course coordinator maintains a list of possible projects. Projects are normally drawn from this list, although projects outside this list may be possible.

The projects involve group work. The ability to work effectively as part of a team is an important attribute in the multimedia industry, and will be a consideration in the assessment of projects. It is expected that wherever possible each project group will be liaising with an external client. Where necessary, and at the discretion of the course coordinator, an external project adviser may be appointed.

Reading Materials

**HET402 Multimedia Project 2**
12.5 Credit Points  • 1 Semester  •  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 useability testing and the development of some form of deliverable.

The Bachelor of Multimedia course coordinator maintains a list of possible projects. Projects are normally drawn from this list, although projects outside this list may be possible.

The projects involve group work. The ability to work effectively as part of a team is an important attribute in the multimedia industry, and will be a consideration in the assessment of projects. It is expected that wherever possible each project group will be liaising with an external client. Where necessary, and at the discretion of the course coordinator, an external project adviser may be appointed.

Reading Materials

**HET405 Research & Development Placement (Project 4)**
50 Credit Points  •  Minimum 14 Weeks  •  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 300 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 convener.

While projects will be of a substantial scientific research nature, they will generally be expected to include the development of hardware and/or software systems.

The Personal Development and Leadership program will be provided via Blackboard to develop leadership attributes and professional skills and an understanding of the organisational dynamics of change at the strategic, operational and technical/research levels.

**HET406 Multimedia Data Processing**
12.5 Credit Points  •  1 Semester  •  5.5 Hours  •  Hawthorn  •  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.
- Arithmetic coding, generating a binary code.
- Integer implementation.
- Applications to image compression.
- Vector quantization.
- Differential coding.
- Transform coding (discrete cosine transform) and application to Image compression (JPEG).
- Video and audio compression.

**Reading Materials**
Examples of biocompatible materials: woven fabrics, PMMA, ceramics, fibres, metals. Electrode materials.

Power sources for implantable medical devices: packaging, battery life, and power density.

Cell-cell adhesion, CAMs, adhesion to non-living materials.

Methods of static and dynamic testing of bone, skin, muscle, arteries etc.

Physical properties of biological materials: visco-elastic properties.

Fabrication methods including excimer laser.

Laser scanning confocal microscopy: multiphoton imaging, nanotechnology.

General aspects of image display.

Biomedical imaging: image reconstructions from projections, diagnostic ultrasound, Doppler ultrasound, projection radiography, magnetic resonance imaging (MRI), spatially localised spectroscopy, radionuclide imaging, gamma scintigraphy, emission computed tomography, miscellaneous imaging modalities.

Aims & Objectives
To introduce an overview of the technologies that are essential for multimedia systems.

Content
• Overview of the human senses, particularly vision and hearing
• Colour theory and systems for colour representation
• Audio concepts: amplitude, loudness, frequency, pitch, phase, overtones, harmonics.
• Overview of analog and digital signals
• Sampling - digitizing analog signals, quantization
• Analog video and audio signals
• Image capture technology
• Audio capture technology
• Digital video and audio
• Digital image manipulation
• Digital audio manipulation
• MIDI technology.
• Image compression techniques
• Video compression techniques
• Audio compression techniques
• Introduction to and evolution of computer architecture.
• Internal and external computer interfaces and bus standards
• Data storage technologies.
• Video display technologies
• Audio reproduction technologies
• Virtual reality technology: visual, audio, haptic

Reading Materials
Online resources.

HET408 Biomedical Imaging and Emerging Technologies
12.5 Credit Points • 1 Semester • Average Weekly Contact of 3.8 Hours • Hawthorn • Prerequisite: HET128 and HM 5213 • 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, radionuclide imaging, gamma scintigraphy, emission computed tomography, miscellaneous imaging modalities.
• General aspects of image display.
• Laser scanning 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.

Reading Materials

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.

Reading Materials


Students should be aware that resource materials (texts and laboratory materials) required for this subject may cost up to $200.

HET412 Networking and Online Games

12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET104 or HIT2120; HIT1051 and HIT1052 VCE Maths A (any assumed) • Teaching methods: Lectures plus laboratory-based project work • Assessment: Assignments, Examination

A subject in the Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Computer Science and Software Engineering).

Note: this subject will be offered from 2008.

Aims & Objectives

This subject will provide students with exposure to, and understanding of, IP-based networking fundamentals as they pertain to interactive, multiplayer online computer games. The focus will be on how the Internet’s technical capabilities enable a variety of client-server and client-client communication models, and how the Internet’s performance limitations impact on a game developers ability to support seamless interactive and immersive experiences for their players. Students will end up with a deep appreciation for the engineering trade-offs inherent in using wide-area and local-area IP networks for multiplayer immersive environments, covering at least the First Person Shooter (FPS), Massively Multiplayer Online Role Playing Game (M MORPG), and Real Time Strategy (RTS) genres.

Content

The subject will review IP networking fundamentals, cover concepts of unicast UDP/IP and TCP/IP communication, and use high level examples of existing multiplayer online games to discuss ISP considerations (predicting traffic loads from gamers) and game developer considerations (e.g. lag compensation, dealing with packet loss, etc). Basic review of “The Internet”, IP addressing schemes, IP routing, hierarchy of service providers, evolution of multiplayer games as a driver for online service deployment (esp. broadband)• History1: early networked games (e.g. “DOOM” broadcasting on Ethernet, DoomZ improving network utilization, networked space warfare games of the “tums happen every X hours”, etc);• History2: putting “games” into a broader context of “immersive environments” and distributed simulation environments (e.g. US military and DARPA funded work in the 1990s);• Network transport - how the choice of UDP versus TCP depends on game style (interactivity);• Where does Lag and packet loss come from and why are they important? Network congestion in ISP networks and, abstractly, in home routers;• Importance of Lag compensation techniques across different game styles;• Current research on traffic lag, jitter and loss sensitivity in players;• Broadband access - how the different technologies (e.g. Cable, ADSL, wireless) affect consumer experience in online games;• Where do players come from? Topological distributions of game players and the implications for optimal location and distribution of servers on the network;• Traffic patterns and their impact on the underlying IP network (e.g. packet size distributions, packets per second, impact on jitter, correlation of client-server traffic, burstiness);• Future directions (emerging technologies that may affect how ISPs offer or deploy services in support of interactive multiplayer games, IP service quality, impact of NAPT/NAT on end to end transparency and client-client communication models, relationship to peer-to-peer communications models, etc).

Reading Materials

Online Resources

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 (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 (Electronics & Computer Systems, Bachelor of Science (Photons), 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:• Modes 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.;• Modes 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 wideband and line sources, electroluminescence);• Lasers light sources (including lasing mechanism, laser resonant cavities, mode structure, laser types);• Light detectors (including thermal & quantum detectors);• Detector circuits.;• Modulation of light.
Connect and set up a small LAN/WAN.
Configure and understand the operation of routers
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

Reading Materials

HET419 Physiological Modelling

12.5 Credit Points  1 Semester  6 Hours per Week  Hawthorn  Prerequisite: HET128 or HM 5213 - Teaching methods: Lectures, Practicals 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.
• Computer packages for solutions of ordinary differential equations. The MATLAB package and SIMULINK software.
• 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.
• Neural modelling, neural networks.

Reading Materials

HET424 I Physiological Modelling

12.5 Credit Points  1 Semester  5 Hours per Week  Hawthorn  Prerequisite: HET128 or either HET118 or HET124 - Teaching methods: Lectures and Practicals • 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 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.
• Understand protocols used with routers such as PPP
• Understand the concept of LAN switching and virtual LANs.
• Understand technologies such as frame relay, ISDN.
• Understand the concept of classless routing.
• Understand and configure Network Address Translation

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:
• Classless Routing
• Scaling IP Addresses
• LAN switching, VLANs, LAN design.
• Routing Protocols
• WANs and LAN design.
• PPP, ISDN, frame relay.

Reading Materials

HET425 Nucleonics and Spectroscopy

12.5 Credit Points  1 Semester  5 Hours per Week  Hawthorn  Prerequisite: HET122 and either HET118 or HET124 - Teaching methods: Lectures and Practicals • Assessment: Assignments, Examinations, Practicals
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
Nucleonics:
• Theory
• Historical perspectives.
• Safety.
• Background to practicals.
• Detector technology.
Applications:
• Medical (including PET, radiotherapy, X-rays, radiotherapy).
• Material science.
• Reactors.
• Domestic applications (including smoke detectors).
• Radiation doses.
Spectroscopy:
• Effects of oscillating fields on materials.
• Absorption, dispersion.
• Scattering and reflection of radiation.
• Molecular rotation and vibration.
• Electron interactions.
• Optical activity.
• X-rays.
• Lasers.
• Mossbauer.
Seven practicals:
- Beta particle absorption.
- Factors affecting radiation measurement.
- Gamma ray spectroscopy.
- High purity germanium detectors.
- Neutron activation analysis.
- Silicon surface barrier detector.
- Time coincidence measurements.

Reading Materials
- 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.
- Corequisites: Nil • 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.

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, kinaesthetic role plays and assessments • Assessment: Online Tests, Assignments and Laboratory Work and Witten 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 (Photonics), and Bachelor of Science (Photonics)/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:
- Perform a basic router configuration.
- Flowchart and explain the sources for IOS software; load CISCO IOS software from flash, a TFTP server, and ROM.
- 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, IGP, and EGP, and RIP and IGRP, add RIP and IGRP to the router configuration.
- Apply Access Control Lists to a Router.

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.
- Access Control Lists (ACLs)

Reading Materials

HET433 Multimedia Interfaces
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET212 • Teaching methods: Lecture and tutorial based tuition with continual practical experience through assignments, research exercises and set tasks.
A subject in the Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Computer Science and Software Engineering).

Note: this subject will be offered from 2008.

Aims & Objectives
- To develop an understanding of the design and development of multimedia interfaces;
- To introduce a range of interface design principles and methodologies;
- To explore the theory of interface structure, composition and utilisation;
- To introduce students to human factors in interface design, and
- To explore the implementation of game design and gameplay principles within non-games interfaces.

Content
Multimedia Interfaces introduces students to the fundamentals of designing interfaces for interactive multimedia, with particular emphasis on accessible, ubiquitous, engaging and immersive interfaces. Students will examine a range of interface methodologies and practices through research and practical study.

Topics will include:
- History of interface design
- Interactive interface design techniques
- Human factors in interface design
- Interface design for different platforms and applications
- Cognition and mental models in interface design
- Creating immersive interfaces
- Using game design principles for non-game interface design

Reading Materials
- Selected journal articles

HET435 Games & Interactivity Project 2
12.5 Credit Points • 1 Semester • Variable depending on project • Typically 18 hours per week • Hawthorn • Prerequisite: HET3158 • Teaching methods: Regular contact with supervisor and project team sessions • Assessment: Project development and satisfactory completion, report and presentation.
A subject in the Bachelor of Multimedia (Games and Interactivity) / Bachelor of Science (Computer Science and Software Engineering).

Note: this subject will be offered from 2008

Aims & Objectives
This project subject is one of a pair of two ‘capstone’ subjects, HET3158 and HET403, intended to integrate and develop the skills and knowledge acquired/ refined during the course. This subject covers the final project production and completion stages.

The IT objectives of the subject include carrying out the final developmental, implementation, testing and deployment stages of a software system in a medium size team (about 6 members), and applying a range of knowledge and skills gained throughout the course – especially in Software Engineering, Programming, Data Communications, Database and Multi-User/Multi-Platform Technologies.

The Multimedia objectives of the subject including enabling the student to acquire practical experience in multimedia aspects of the design and development of
games and/or interactive environments or interfaces, synthesising skills learnt in other multimedia coursework subjects and successfully executing a major project in a team environment.

**Content**
- Project execution
- Useability testing
- The development of an approved form of multimedia deliverable plus a final project report and presentation

Lectures will cover such topics as:
- studio and production processes
- proprietary applications versus custom programming solutions
- visual presentation and marketing
- games project management
- quality assurance
- studio management and production

**Reading Materials**
TBA

**HET436 Broadband Multimedia Networks**
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET336 • 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 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.

**Reading Materials**

**HET452 Wireless Communications**
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET314, HET313 and HET336 • Teaching methods: Lecture, Laboratory and Assignment • Assessment: Assignments, Examinations, Projects
A subject in the Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering), BEng Telecommunications & Internet Technologies) and BMultimedia (Networks & Computing)/BEng (Telecommunications & Internet Technologies).

**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, DPSK, QPSK, OQPSK, Pi/4QPSK), constant envelope modulation (FSK, MFSK, GMFSK), QAM, CDMA (DS-SS).
- Multimedia access systems and cellular standards: GSM, CDMA, WCDMA and capacity comparisons.

**Reading Materials**

**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, Projects
A subject in the 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 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.

**Reading Materials**

**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 convener.

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.

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 (Optoelectronics 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, Q-switching and mode locking.
- Examples of lasers, optical pumping systems.
- Gaussian beam characteristics and propagation.
- Resonant optical cavities, mode volume and mode selection techniques.

Reading Materials

HET504 Quantum Mechanics A
12.5 Credit Points • 1.5 Semesters • 40 Hours • Hawthorn • Prerequisite: Nil
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

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.

Origins of quantum theory:
- Blackbody radiation.
- Photoelectric effect.
- The Bohr atom.
- de Broglie hypothesis.
- Wave-particle duality.
Elementary quantum mechanics:
- Wave mechanics.
- Wave packets.
- Uncertainty relations.
- Probability interpretation.
- Schrödinger equation.
Simple systems:
- Particle in a box.
- Barrier penetration.
- Tunnelling.
- Bound states.
- Harmonic oscillator.
Multiparticle systems:
- Symmetry.
- Bosons, fermions.
- Pauli exclusion principle.
Angular momentum:
- Central potentials, spherical harmonics.
- Spin, magnetic moment.
Hydrogen atom:
- Radial equation.
- Spectra.

Reading Materials

HET505 Advanced Optical Imaging Theory
12.5 Credit Points • 1.5 Semesters • 40 Contact Hours • Hawthorn • Prerequisite: Nil
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.

Reading Materials

HET506 Modern Optics
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 (Optoelectronics and Lasers) Honours.

Aims & Objectives
This subject aims to provide a solid understanding of basic concepts in modern optics and an introduction of fundamental principles of optical design.

Content
- Principles of wave optics.
- Introduction to Fourier optics.
- Introduction to optical engineering.
- Lenses and aberrations.
- Optical instruments.
- Detectors.
- Spatial light modulators.
- Lasers.
- Linear system transforms.
- Diffraction and interference.
- Holography.
- Signal processing.
- Fibre optics.

**Reading Materials**


**HET507 Atomic and Molecular Spectroscopy & Non-linear**

12.5 Credit Points  1.5 Semesters  40 Hours  Hawthorn  Prerequisite: Nil

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:

**Spectroscopy**

- One-electron atoms.
- Schrödinger equation, bound states, energy eigenfunctions.
- Transition rates, Einstein co-efficients, selection rules.
- Fine structure, hyperfine structure.
- Stark shift, Zeeman shift, isotope shift.

Beyond one-electron atoms:

- Schrödinger equation for two-electron atoms, Pauli exclusion principle.
- Central field approximation, selection rules.

**Molecular structure:**

- Diatomic molecules.
- Rotational and vibrational states.
- Electronic and nuclear spins.

**Spectroscopic properties:**

- Natural linewidth, doppler broadening, collisional broadening.
- Homogeneous and inhomogeneous broadening, power broadening.
- Saturation, optical pumping.

**Laser spectroscopic methods:**

- Raman spectroscopy, time-resolved spectroscopy, coherence spectroscopy.
- Molecular beams, collisions.

**Non-linear spectroscopy:**

- Hole burning, Lamb dip, saturation spectroscopy.
- Polarisation spectroscopy, multiphoton spectroscopy.

**Laser trapping and cooling:**

- Radiation pressure, optical dipole force, magnetic and optical traps.
- Sub-doppler cooling, atom optics, evaporative cooling.
- Bose-Einstein condensation.

**Non-linear optics:**

- Anisotropic polarisability of atoms and molecules: susceptibility tensor.
- Crystallographic and optic axes of crystalline optical materials.
- Second harmonic generation.
- Phase matching: types I and II.
- Index matching in uniaxial crystals.
- Critical and non-critical phase matching.
- Optical parametric oscillators, signal and idler beams.
- Non-linear effects in optical fibres.
- Harmonic generation, four wave mixing, N.L. refraction.
- Stimulated inelastic scattering (Raman and Brillouin).
- Self-phase modulation.

**Reading Materials**


**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 (Optoelectronics 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, M ach-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.
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Reading Materials

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 (Optoelectronics 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.

Reading Materials

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: Assignment(s) 10%, Final Examination 90%
A subject in the Bachelor of Science (Optoelectronics 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 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.
• Image illumination.
• Image recording.
• Accuracy and spatial resolution.

Modern flow measurement applications using LDA and PIV.

Reading Materials
Van de Hulst, HC, Light Scattering Small Particles, Dover, NY, 1981.

HET511 Honours Research Project
50 Credit Points • 2 Semesters • 12 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 (Optoelectronics 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.

Reading Materials
To be advised.

HET512 Research Methods
0 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 (Optoelectronics 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 (eg. Maple, Mathematica).

Reading Materials
To be advised.
HET513  Design of DSP Architectures

12.5 Credit Points • 1 Semester • 5.5 Hours per Week (average) • Hawthorn • Prerequisite: HET229 • 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

Elementary principles:
• Wave packets, wave function, Schrödinger equation.
• Operators, eigenfunctions, and eigenvalues.
• Transformations, symmetries, conservation principles, parity.
Semi-classical approximation:
• Classical limit of quantum mechanics.

HET515  Advanced Embedded Systems

12.5 Credit Points • 1 Semester • 5.5 Hours per Week • Hawthorn • Prerequisite: HET222 and HET378 • Teaching methods: Lectures (36 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 2007.

Aims & Objectives

To expose students to techniques and methodology in embedded system design. Students will develop hands-on experience in design, simulation and implementation using EDA tools. Upon satisfactory completion of this 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

HET517 RF Electronics Design
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET202 & HET308 • Teaching methods: Lectures and Laboratories • Assessment: Assignments, Examinations, Labs
A subject in the Bachelor of Engineering (Electronics and Computer Systems) / Bachelor of Science (Computer Science and Software Engineering). 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
• Introduction to RF Design
• Devices and Models
• Matching Networks
• Frequency Selective Circuits
• Small Signal Amplifiers
• Power Amplifiers
• Oscillators
• Modulation/Demodulation
• Mixers Phase-Locked Loop PLL
• Mix Signal ADC & DAC

Recommended Reference Texts

Reference Texts
See lecture notes for further references.

HET527 Sleep and Attention
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HET226 or HET219 • Teaching methods: Lectures, Tutorials, Laboratories and Seminars • Assessment: Assignments, Examinations
A subject in the Bachelor of Science (Psychology/Psychophysiology).
Aims & Objectives
An understanding of the physiological and behavioural process underlying normal sleep, attention and disorders of these states.

Content
• Sleep, consciousness and coma: stages of sleep, desynchronisation of EEG activity, functional models of sleep, sleep monitoring, sleep disorders.
• Attention: mechanisms, neuropsychology, models, assessment of attention, disorders of attention.

Reading Materials
Hobson, J, Sleep, Scientific American Library, New York, 1995

HET528 Higher Cortical Functions
12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HET231 or HET226 • Teaching methods: Lectures, Tutorials and Seminars • Assessment: Assignments, Class Presentations, Examinations
A subject in the Bachelor of Arts (Psychology/Psychophysicsiology) 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
• Motivation: mechanisms of eating and drinking behaviours, intracranial self-stimulation studies, nonhomeostatic behaviours.
• Memory: neuronal plasticity, psychophysiological studies and models, memory pathology and neuropsychology, connectionist models.
• Speech and language: psychophysiological models, brain laterality and language processes, disorders of speech and language.

Reading Materials

HET550 Design and Development Project 1
12.5 Credit Points • 1 Semester • Variable depending upon project: Typically an average of 1 Hour per Week • Hawthorn • Prerequisite: Completion of 287.5 Credit Points of the Degree 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 Engineering (Telecommunications & 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 Arts, 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 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 HET556.

Students are expected to select a project from a list prepared by academic staff, or students may suggest their own topic based on an individual interest or arising from their period of Industry-Based Learning.

The project may be university or industry based. It may take various forms in which technology, research and development, experimental work, computer analysis, industry liaison and business acumen vary in relative significance. It is expected that the project will involve a substantial software development component. Students are expected to conduct literature surveys, to investigate probable solutions, prepare designs, analyse, and where appropriate, implement and test designed products and processes.

Reading Materials
As recommended by the supervisor to support the student’s project.

HET551 Design and Development Project 1

12.5 Credit Points • 1 Semester • Variable depending upon project: Typically an average of 1 Hour per Week • Hawthorn • Prerequisite: Completion of 287.5 Credit Points of the Degree 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)

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 constraints. This includes planning a project with other students and working as a team with a team leader.
• Constructing and testing hardware and/or writing and commissioning software.
• Planning and delivering a short technical lecture.
• Writing a comprehensive thesis to detail all initial research, literature survey and the work performed.
• The personal rewards in completing a complex engineering task.

Content
Students are expected to work on group projects in a typical group size of three (although other group sizes will be considered). The project itself must be continued and completed in HET557.

Students are expected to select a project from a list prepared by academic staff, or students may suggest their own topic based on an individual interest or arising from their period of Industry-Based Learning.

The project may be university or industry based. It may take various forms in which technology, research and development, experimental work, computer analysis, industry liaison and business acumen vary in relative significance. It is expected that the project will involve a substantial software development component. Students are expected to conduct literature surveys, to investigate probable solutions, prepare designs, analyse, and where appropriate, implement and test designed products and processes.

Reading Materials
As recommended by the supervisor to support the student’s project.

HET552 Design and Development Project 2

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)

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 • Teaching methods: Staff Supervision • Assessment: The assessment of 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 Convener.

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 and Mechatronics).

Aims & Objectives
• To develop skills in planning and completing a major project in robotics, mechatronics and software development.
• To develop skills in preparing a major project report.
• To apply knowledge acquired during the course.
• To develop an individual ability to pursue an engineering objective.
• To prepare and present a professional seminar on the project.
Content
Students are expected to have selected a project during Final Year Project 1. The project may be university- or industry-based. It may take various forms in which technology, research and development, experimental work, computer analysis, industry liaison and business acumen vary in relative significance. It is expected that the project will involve a substantial software development component.

Students are expected to investigate probable solutions, prepare designs, analyse, and where appropriate, implement and test designed products and processes.

Reading Materials
As recommended by the supervisor to support the student's project.

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.

Reading Materials
As recommended by the supervisor to support the student's project.

HET559  Power Electronics
12.5 Credit Points  • 1 Semester  •  5.5 Hours per Week  •  Hawthorn  •  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 circuits in the fields of AC and DC drives, power generation and transmission and energy conservation.

Content
• Introduction.
• A revision of power semiconductor devices in the transistor, thyristor and hybrid families.
• Driver and trigger circuits for power devices.
• Protection of power semiconductor devices.
• A revision of the principle of pulse width modulation and its advantages.
• Switched mode power supplies.
• Machine drives.
• A detailed study of modern AC and DC variable speed electrical machine drives.
• Calculation of component ratings, power factor, utilisation factor, retrieval of energy etc. for a given application.
• Principle of regenerative braking.
• Application and implementation of closed loop control to machine drives.
• Power generation and transmission.
• A review of alternators and power systems.
• The application of power electronics modern alternator field control and in transmission of power, including DC transmission.
• The superposition of information transmission on power lines.
• Energy conservation.
• Solar energy and other sources of energy.
• Battery technology as applied to the storage of electrical energy.
• The application of semiconductor inverters including uninterruptible power supplies to battery sources.

Reading Materials
Leonhard, W., Control of Electrical Drives, Springer-Verlag, 1985.

HET601  Research and Development Project 6
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 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 convener.

While projects will involve substantial scientific research, they are generally expected to include the need to develop hardware or software systems. A regular seminar series, featuring key internal and external researchers, may be offered. These seminars could cover specific research topics or aspects of research project management and generic research skill development.

HET631  Abnormal Psychophysiology
12.5 Credit Points  • 1 Semester  •  5 Hours per Week  •  Hawthorn  •  Prerequisite: HET527 or HET528  •  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.

Reading Materials
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 • Assessment: 50% Essay and 50% Examination
A subject in the Bachelor of Science in Psychology/Psychophysiology (Honours).

Aims & Objectives
Neurophilosophy is a course designed for students that critically evaluates the case for mental states being comprehensible in terms of the physical states of a material system.

Content
Starting from a brief introduction to the philosophy of science and epistemology the current status of neurobiological theories of mind is examined in the context of the “hard” problems of the brain: what type of evidence is sufficient to establish a neurobiological basis for the psychological categories of memory, emotion, consciousness and free will.

Recommended Reading:

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 BSc (Psychology/Psychophysiology)(Honours), 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

Reading Materials
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 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 focussed on the individual’s needs where possible, but generic topics will also be covered to increase the breadth of knowledge of state-of-the-art techniques in biomedical science. By writing a detailed technical report on a provided topic the student will be able to demonstrate mastery of the topic, as well as ability to search the literature and make critical judgment of the relevance of the sourced material. Students may be required to visit other institutions and laboratories to gain a full understanding of the discipline area and available technologies. Their cognet 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.

Reading Materials
As required by the individual topics and lectures.

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: Projects

A subject in the Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Engineering (Electronics & Computer Systems)/Bachelor of Business, Bachelor of Science (Computer Science and Software Engineering)/Bachelor of Engineering (Telecommunications and Internet Technologies), and Bachelor of Engineering (Telecommunications and Internet Technologies).

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.
• Reflected on personal strengths and weaknesses, and developed a better understanding of themselves as learners and individuals moving into an engineering career.

Content
Students will work in groups of 2 or 3 throughout the semester to complete an approved engineering project.

The style of projects possible varies widely, from a multi-team design office approach to a large multifaceted infrastructure problem, to the design and construction of individual machines or electronic devices to meet a specific specialised need.

All projects, however, are assessed using the same range of structures, with strong emphasis on the ability to communicate effectively in written and oral forms not only the final outcome of the project, but also to be able to identify and reflect upon the design process and the associated teamwork issues encountered during the semester.

Reading Materials
There are no prescribed texts, though the early lectures will introduce students to a wide range of information resources available through the library, and the procedures for accessing that information. A dedicated engineering librarian is also available to assist students in accessing and interpreting both print and digital information.

HFTV000 Industry Based Learning Placement
37.5 Credit Points • 24 Weeks • Prahran • 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 Faculty of Design in cooperation with employers.

HFTV101 Film & Television Technology Intensive
25 Credit Points • 3 weeks • 35 Hours • Prahran • 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.

A subject in the Bachelor of Film and Television

Aims & Objectives
A flexible delivery, quick turn around course designed to ensure students have a thorough understanding of fundamental industry standard technical requirements when entering the Bachelor of Film and Television with advanced standing and/or at mid-year entry.

Content
The course will focus on the content delivery outlined in HFTV111 FG TV Technology 1. It will address the video production process from three distinct but intersecting perspectives. Elements and Principles 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 Mangement. Technology Methods will provide students with a comprehensive, practical introduction to industry standard production equipment, computing systems, networks and software packages and delivery formats. Production Outcome provides an opportunity for students to consolidate these skill sets in a practice-based production outcome. This subject will focus specifically on linear film and digital video production outcomes. • 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.
HFTV112 Film & Television Technology Production 1

25 Credit Points • 12 weeks • 4 Hours per Week • Prahran • Prerequisite: Nil •
• Teaching methods: Production studio, 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 instil the importance of working within industry guidelines and practice.

Content
Technology Production 1 will focus specifically on both traditional and digital film and video production outcomes. It will provide a theoretical guide to the principles of film and television production and will address areas such as Pre-Visualisation and Production Pathways. It will provide students with a comprehensive and practical introduction to industry standard production equipment and delivery formats. It will also provide an opportunity for students to consolidate these principles and techniques in a practice-based production outcome.

• Introduction to Production Protocols
• Concepts in Visual Language and Realisation
• Introduction to Pre-Visualisation
• Production principles and techniques including Lighting and Cinematography
• Sound Recording and Production Pathways
• Introduction to Production Equipment
• Practical experience in both traditional and digital filmmaking techniques

Reading Materials
Eisenstein, S. 1947. The Film Sense, San Diego: Harvest Books
Eisenstein, S. 1949. The Film Form: Essays in Film Theory, San Diego: Harvest Books
Oxford University Press
Reading Materials
Eisenstein, S. 1949. The Film Form: Essays in Film Theory, San Diego: Harvest Books

Teaching methods: Production studio, 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 instill the practice of storytelling and ideas development as a fundamental component of the creative/filmmaking process.
• To instill the writing process as a fundamental and ongoing part of the students’ creative practice.
• To explore the role of the Writer and Director within the filmmaking and digital imaging production process.
• To increase cinema appreciation, encourage dialogue and social interaction and generate an active film culture within the school. This screening is intended to expose students to an eclectic range of content, genres, formats and styles.
Aims & Objectives

- To ensure a thorough understanding of the fundamental principles, post production techniques and practices of the Film, Television and Digital imaging industries.
- To instill the importance of working within post production industry guidelines and practice.

Content

Technology Post Production 1 will focus specifically on both traditional and digital film and video production outcomes. It will provide a theoretical guide to the principles of film and television practice and will address areas such as: Post Production Pathways, Video compression and Production Management. It will provide students with a comprehensive and practical introduction to industry standard computing systems, networks and software packages and delivery formats. It will also provide an opportunity for students to consolidate these principles and techniques in a practice-based post production outcome.

- Introduction to Post Production Protocols.
- Production principles and techniques including Directing and Editing.
- Introduction to Post Production Equipment.
- Introduction to Digital Video compression.
- Practical experience in both traditional and digital Post Production techniques.

Reading Materials


Aims & Objectives

- To consolidate the skills and techniques developed in Film and Television Technology - Production 1.

Content

Technology Production 2 focuses specifically on traditional documentary techniques. It provides a theoretical guide to the principles of documentary practice and covers areas such as Production Management, Interview techniques, and research and preproduction for documentary production. This subject provides students with a comprehensive and practical introduction to industry standard production equipment and delivery formats. It also provides an opportunity for students to consolidate these principles and techniques in a practice-based production outcome.

- Introduction to the principles of documentary.
- Introduction to camera techniques for documentary production.
- Introduction to writing documentary.
- Introduction to directing documentary.

Reading Materials


Aims & Objectives

- To instill the practice of storytelling and ideas development as a fundamental component of the creative/filmmaking process.
- To explore the fundamentals of industry standard documentary processes and documentation for a range of genres and formats.
- To explore the role of the Writer and Director within the filmmaking and digital imaging production process.
- To increase cinema appreciation, encourage dialogue and social interaction and generate an active film culture within the school.

Reading Materials


HFTV122 Film & Television Language and Communication 2

12.5 Credit Points - 12 Weeks - 3 Hours per Week - Prahran - Prerequisite: HFTV112 - Teaching methods: Seminar based tuition with continual practical experience through exercises and set tasks. - Assessment: Projects will be appraised progressively.

Aims & Objectives

- To consolidate the skills and techniques developed in Film and Television Language and Communication 1.

Content

Language and Communication 2 consolidates the skills and techniques developed in HFTV112 - Film & Television Language 1. This subject investigates the process of new project development, scripting for documentary, animation and interactive productions. It provides students with a deeper understanding of the director’s role within the production process and students are introduced to areas such as directing for animation, documentary and interactive productions. This subject also includes compulsory weekly screening, which aims to increase the students’ appreciation of cinema, to encourage dialogue and social interaction and to generate an active film culture within the school. This screening continues to expose students to an eclectic range of content, genres, formats and styles.

Reading Materials

HFTV231 Film & Television Technology 3

25 Credit Points • 12 weeks • 9 Hours per Week • Prahran • Prerequisite: HFTV121 • Teaching methods: Production studio, laboratory and seminar based button with combinial 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 thorough understanding of the fundamental principles, production techniques and practices of the Film, Television and Digital imaging industries.
• To further consolidate the skills and techniques developed in the previous Technology subjects.

Content
Technology 3 focuses specifically on the areas of Special Effects and disc based authoring. It provides a theoretical guide to the principles of film and television practice and covers areas such as colour theory, distributed media and digital visual effects and animation. This subject gives students 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 environment.

Advanced compositing for Special Effects
• Shooting for BlueScreen and Keying techniques
• Introduction to 3D Animation
• Advanced life drawing for animation

Reading Materials

De Liance, P. & Ely, M. 2000. DVD Production, TBA
Fleming, B. 1998. 3D Compositing Workshop, John Wiley
LaBarge, R. 2001. DVD Authoring and Production, TBA
Pyeon, C. 2001. Digital Video and HD TV Algorithms and Interfaces, TBA

HFTV232 Film & Television Project Series 1

12.5 Credit Points • 12 weeks • 4 Hours per Week • Prahran • Prerequisite: Successful completion of HFTV112 / HFTV122 • 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. 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
Aims & Objectives
- To extend the production skills and practices developed in Semesters One and Two.
- To develop expertise within specific production areas.
- To continue to prepare 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 Special Effects, Editing and other production areas as appropriate. Students with interests in particular production areas will be encouraged to follow individual pathways in a supportive production environment. Industry professionals will be invited to provide specialist training within chosen fields of expertise. This subject may also provide the opportunity for industry based production attachments.

Reading Materials
- Dimaria, J. 2002. High Score: The Illustrated History of Electronic Games, Osbourne

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 Televisi
- Game Prototype development
- Introduction to Broadband technologies

Reading Materials

Subject Details
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 Special Effects, Editing and other production areas as appropriate. Students with interests in particular production areas will be encouraged to follow individual pathways in a supportive production environment. Industry professionals will be invited to provide specialist training within chosen fields of expertise. This subject may also provide the opportunity for industry based production attachments.

Reading Materials
- Dimaria, J. 2002. High Score: The Illustrated History of Electronic Games, Osbourne

HFTV241 Film & Television Technology 4
12.5 Credit Points • 12 weeks • 6 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. 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 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 Special Effects, Editing and other production areas as appropriate. Students with interests in particular production areas will be encouraged to follow individual pathways in a supportive production environment. Industry professionals will be invited to provide specialist training within chosen fields of expertise. This subject may also provide the opportunity for industry based production attachments.

Reading Materials
- Dimaria, J. 2002. High Score: The Illustrated History of Electronic Games, Osbourne

HFTV242 Film & Television Project Series 2
25 Credit Points • 12 weeks • 7 Hours per Week • Prahran • Prerequisite: Successful completion of HFTV241 • 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 Semesters One and Two.
- To further consolidate the post-production skills developed in Semesters One and Two.
- 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.
**Reading Materials**


TBA Curran, S. Motion Graphics: Graphic Design for Broadcast and Film

Hall, P. 2000. Pause: 59 Minutes of Motion Graphics

Speiermann & Ginger, Stop Stealing Sheep & Find Out How Type Works, Adobe Press

Tufte, E. Envisioning Information, Chesite: Graphics


Reading Materials


Reading Materials


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 assessed progressively. Assessment criteria will depend upon project content as all areas of activity consist mainly of practical exercises.

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.

Reading Materials


**HFTV244 Title Design**

12.5 Credit Points • 12 weeks • 4 Hours per Week • Prahran • Prerequisite: Nil • Teaching methods: Screenings, Production Studio, Laboratory and seminar based tuition with continual practical experience through exercises and set tasks. • Assessment: Projects will be appraised progressively.

Aims & Objectives

To introduce the Title Sequence as a specific production component with particular narrative and design considerations and requirements.

To provide a thorough knowledge of the history and creative development of the Title Sequence.

To provide an understanding of the role the Designer within the filmmaking and digital imaging production process.

To consolidate and further explore Motion Graphic Design, Typography and Animation techniques within the context of screen based delivery.

Content

This subject focuses on the history and the role of the Title Sequence within a range of genres and delivery formats including narrative film, documentary, animation and interactive productions. Students are to develop a greater understanding of typography and its various functions within a title design.

Students are expected to create a number of title sequences using both traditional and digital techniques. Students are to collaborate with one another in the role of Title Designer on at least one HFTV242 &TV Project Series 2 production

**Reading Materials**

TBA, 2000. 72dpi, Die Gestalten Verlag


TBA Curran, S. Motion Graphics: Graphic Design for Broadcast and Film

Hall, P. 2000. Pause: 59 Minutes of Motion Graphics

Speiermann & Ginger, Stop Stealing Sheep & Find Out How Type Works, Adobe Press


Bellantoni, J, Type in Motion.


Tuft, E. Envisioning Information, Chesite: Graphics


**HFTV351 Film & Television Project Research Series 3**

12.5 Credit Points • 12 weeks • 4 Hours per Week • Prahran • Prerequisite: Successful completion of Film & 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.

Aims & Objectives

A subject in the Bachelor of Film and Television

To foster 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 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.

Reading Materials

Lauri, B. 1990. The Art of Human-Computer Interface Design, Addison-Wesley Publishing


**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.
Subject Details

**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 in accordance with industry practice. Students will experience the production process from beginning to end, including casting, crewing, scheduling, shooting, directing, sound recording, art direction, editing, sound design and digital integration. Students will be encouraged to assist one another in the production process and to pursue areas of specific technical and/or creative research within the context of the subject outcome requirements.

**Reading Materials**


**HFTV362 Film & televisionGroup 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 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. 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.

**Reading Materials**


**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 (Hons).

**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.

**Reading Materials**


Lenker, J. 2002. Train of Thoughts: designing the effective web experience, New Riders


**HFTV472 Film & Television Individual Research Project H1**

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 process 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.

Reading Materials
Studio 7.5, Navigation for the Internet and other Digital Media, AVA Publishing SA 2002

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 (Hons).

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.

Reading Materials
Studio 7.5, Navigation for the Internet and other Digital Media, AVA Publishing SA 2002

HFTV481 Film & Television Technology H2
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 research. • Assessment: Major assignment, Hurdle Tasks and practical examination.
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 to support the production outcome of HFTV482 - F&TV Individual Research Project H2.

Reading Materials
Lender, J. 2002. Train of Thoughts: designing the effective web experience, New Riders

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&TV 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 again 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 processes and to pursue areas of specific technical and/or creative research within the context of the subject outcome requirements.

Reading Materials
Studio 7.5, Navigation for the Internet and other Digital Media, AVA Publishing SA 2002

HFTV483 Film & Television Group Research Project H2
12.5 Credit Points • 12 weeks • 3 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 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.

**Reading Materials**

**HIT0004 Careers in the Curriculum**
0 Credit Points • 1 Semester • 1 Hour per Week • Hawthorn • Prerequisite: Nil • Teaching methods: Class • Assessment: Assignments

A subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Software Engineering, Bachelor of Science (Computing), Bachelor of Multimedia (Multimedia Software Development), Bachelor of Information Systems and Bachelor of Information Systems/Bachelor of Business

**Aims & Objectives**
To introduce career planning and career management skills to students.

**Content**
- Self Awareness: Identification of employment-related skills, interests and values.
- Opportunity Awareness: Research and understand significant aspects of work such as the range of jobs available, further training options.
- Job Hunting: Develop and implement skills in resumes and cover letter writing, interviews, networking and Assessment Centre participation.

**Reading Materials**

**HIT1003 I.T. Transition Program**
Compulsory Pass • 1 Semester • 15 Hours per Semester • Hawthorn • Prerequisite: Nil • Teaching methods: Lectures, tutorials, discussion, reflection.

**Aims & Objectives**
- To provide a set of basic skills for success in the study of information technology at the tertiary level.
- To develop communication skills, both written and verbal, individual and within teams.
- To enhance understanding of personal learning styles and provide strategies to maximise own learning.
- To reduce the number of students whose progress is less than satisfactory.
- To establish study groups and links between students and faculty staff.

**Content**
- Strategies to maximise learning at University.
- Study plans and goal setting.
- Strategies for groupwork.
- Problem solving and critical thinking exercises.
- Communication guidelines - verbal, written and electronic.
- Study techniques and examination preparation.

**HIT1015 Computer Systems**
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: Nil • 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 Multimedia (Multimedia Software Development), and Bachelor of Software Engineering.

**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.

**Reading Materials**

**HIT1025 Introduction to Information Systems**
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lecture, Laboratory • Assessment: Assignments, Examinations

A subject in the Bachelor of Information Systems, Bachelor of Information Systems / Bachelor of Business and Bachelor of Information Technology.

Note: This subject is available to BBus, BIS and BIT students only.

**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.

**Reading Materials**

**HIT1031 Introduction to Software Engineering**
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1051 • Teaching methods: Lectures (2 Hours per Week), Tutorials (1 Hour per Week) • 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 & Internet Technologies)/Bachelor of Science (Computer Science & 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 Engineering (Robotics & Mechatronics), Bachelor of Science (Computer Science & Software Engineering)/Bachelor of Engineering (Robotics & Mechatronics).

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.

Reading Materials

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 and Software Engineering), Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science and Software Engineering), Bachelor of Information Systems, Bachelor of Multimedia (Multimedia Software Development), Bachelor of Software Engineering, Bachelor of Science (Photronics), Bachelor of Science (Photronics)/Bachelor of Engineering (Telecommunications & Internet Technologies) and the Bachelor of Multimedia (Networks and Computing).

Aims & Objectives
- To explain basic concepts of object-oriented analysis.
- To produce simple object-oriented designs from a written specification.
- To write object-oriented programs using J ava.
- To demonstrate understanding of the main features of the software development process in an object-oriented framework.
- To co-operatively develop and criticize object-oriented designs.

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

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 & 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 Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies), Bachelor of Software Engineering Bachelor of Science (Photronics), Bachelor of Science (Photronics)/Bachelor of Engineering (Telecommunications & Internet Technologies) and the Bachelor of Multimedia (Networks and Computing).

Aims & Objectives
- To extend and strengthen basic concepts of object-oriented programming using J ava.
- To study GUI software development using J ava.

Content
- Intermediate programming.
- The dynamic model.
- J ava language and J ava system.
- Graphical User Interface programming in J ava.
- Exceptions.
- Files and streams.
- Design principles and introduction to patterns.

Reading Materials

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 (2 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.
- THEM: document structure, images, links, maps, tables, frames, forms.
- Protocols and server technology: HTTP, TCP/IP, MIME, URIs, CGI, server technology.
300 | Subject Details

- JavaScript: syntax, DOM, forms processing, common tasks.
- Style sheets: fundamentals, CSS formatting, CSS positioning, standards.
- 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**

**Aims & Objectives**
- To introduce students to the basic programming knowledge that can be utilised in a business and organisational programming environment.
- To give students the skills to be able to create and maintain small business software applications using structured event-driven object-based programming environment.

**Content**
- Introduction to programming fundamentals/event-driven/object-based programming concepts, user interface, objects properties and events.
- Structured programming constructs of sequence, condition and iteration.
- Variables, data types, arithmetic operations, general sub-procedures and functions, l-dim variable arrays, structures, array list collections, text files, selected string and date functions, testing strategies and debugging techniques.

**Textbook**

**References**

**HIT1109 Software Development 1A**
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
- Teaching methods: Lecture, Tutorial, Laboratory • Assessment: Assignments, Tests, Examinations
A subject in the Bachelor of Information Technology and available as an elective in the Bachelor of Information Systems/Bachelor of Business.

**Aims & Objectives**
- To extend and strengthen basic concepts of object-oriented programming using Java.
- To study GUI software development using Java.

**Content**
- Input-output.
- Event-driven programs.
- Introduction to class libraries.
- Use of an OOP notation.

**Textbook**

**References**

**HIT1112 Software Development 2A**
12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: HIT1111 • Teaching methods: Lectures (2 Hours per Week), Laboratory/Tutorial (2 Hours per Week) • Assessment: Assignments, Examination
A subject in the Bachelor of Information Technology and Bachelor of Software Engineering. Note: this subject is only available to BIT and BSE students.

**Aims & Objectives**
- Intermediate programming.
- The dynamic model.
- Java language and Java system.
- Graphical User Interface programming using Java.
- Exceptions.
- Files and streams.
- Design principles and introduction to patterns.

**Reading Materials**

**HIT2005 Information Technology Infrastructure**
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT1025 • Teaching methods: Lecture, Laboratories • Assessment: Assignments, Group Work, Presentations, 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.

**Reading Materials**
HIT2006 Business Computing

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1025 • Teaching methods: Lecture, Tutorial, Laboratory • Assessment: Assignment, Examination, Presentation, Test

A subject in the Bachelor of Information Systems, Bachelor of Information Systems / Bachelor of Business and Bachelor of Information Technology.

Aims & Objectives
- To develop students' understanding of how information technology is used to solve business problems.
- To understand how different types of information systems are used within an organisation.
- To see how information technology may be used for competitive advantage by an organisation.
- To extend students' problem-solving skills with user tools software, particularly Excel.

Content
- Electronic commerce.
- Information systems, with an emphasis on decision support systems.
- Problem-solving.
- IT as a strategic resource.
- Systems development with an emphasis on end-user computing.
- Human Computer Interaction.
- International systems.
- Security.
- Advanced Excel.

Reading Materials
Qz, E., Management Information Systems, 3rd edn, Thomson (Course Technology), 2002.

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, Test

A subject in the Bachelor of Information Systems, Bachelor of Information Systems/Bachelor of Business, and Bachelor of Information Technology.

Aims & Objectives
- To give 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.

Reading Materials

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 Engineering (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.

Reading Materials

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 (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 fundamental 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.
- Goals 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, Keystone Level Model).
• Evaluation with users: Usability testing, interviews, questionnaires, ethics of user testing.
• Experimental design and data analysis.

Reading Materials


HIT2056 Software Project Management

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT1031 • 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 concepts and techniques required to direct and control the development of medium- to large-scale software, including project management, quality assurance, software process improvement and software metrics.
• To broaden students' understanding of possible software development paradigms.

Content

• Software Project Management, including costing, scheduling and risk management.
• Introduction to Software Quality Assurance.
• Introduction to Software Process Improvement.
• Introduction to Software Metrics.

Textbook


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: On-line tests, 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.

Reading Materials

Manuals or texts referring to Microsoft Windows, Word, Excel and Visual Basic for Applications.

HIT2080 Introduction to Programming

12.5 Credit Points • 1 Semester • 48 Hours • Hawthorn • Prerequisite: Nil • Teaching methods: Lecture, Laboratory (2 Hrs per Week Each) • Assessment: Assignments, Examinations

A subject in the Bachelor of Engineering (Biomedical Engineering), Bachelor of Engineering (Electrical & Electronic Engineering), Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Biomedical Sciences), Bachelor of Science (Medical Biophysics & Instrumentation), and Bachelor of Science (Psychology/Psychophysiology).

Note: This course is only available to students in engineering and non-IT courses.

Aims & Objectives

• To introduce imperative programming principles.
• To introduce the C programming language.

Content

• Algorithmic approach to problem-solving.
• Program design methodology.
• C basics.
• The simple data types (int, float, etc.).
• Control of flow.
• Arrays.
• Functions.
• C string handling with standard libraries.
• Elementary data structures and data types.
• Sequential file I/O.
• Pre-processor commands.

Reading Materials


HIT2092 Advanced Web Technologies

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT1091 or HET113; and HIT1051 or HIT109 • 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: IIS, PW S.
• Active Server Pages (ASP): programming ASP, database connectivity, e-commerce concepts.
• Introduction to CGI Programming/Perl.
• Introduction to PHP.

Textbook


Course notes.

References

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.

Reading Materials

HIT2110 Programming in VB.NET
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HIT1069 or HIT2051 or equivalent introductory programming subject. Teaching methods: Lecture, Laboratory. Assessment: Labs, Assignments, Tests, 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.

Reading Materials

HIT2114 Operating Systems (Linux)
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1052 and HIT2015. Preclusions: HIT2082. Teaching methods: Lecture (2 Hours per Week), Tutorials, 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.

Reading Materials
Aims & Objectives
By the end of the subject students should be able to:

- Demonstrate understanding of computational models of mental faculties.
- Design simple intelligent software.

Content
- Introduction
- Intelligent Agents
- Reasoning
- The predicate calculus
- Induction
- Fuzzy logic
- Uniformed and informed research
- Knowledge presentation
- Expert systems
- Evolutionary computing
- Artificial Neural Networks
- Learning
- Machine vision
- Natural languages processing
- Philosophical problem of Artificial Intelligence

Reading Materials

HIT3007 Business Computing Applications
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT2006 • 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 describe 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 assess 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 and the related strategies in business context.
- To design, implement and manipulate files using electronic spreadsheet, DBMS software and MIS application.
- To demonstrate mastery of an Executive Information System / MIS package by developing an EIS model.

Content
- Relationship and distinction between different types of application systems within the business environment, with major emphasis on computer-based information systems.
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 environments.

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.

Reading Materials

HIT3034 Information Systems Project

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT3017 and HIT3049 or HIT1031) • 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.

Reading Materials

HIT3037 Programming in J ava

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Substantial programming experience. Available to BSc(IT) students only • 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 J ava.

Content
- Introduction and comparison to C/C++.
- J ava language.
- Exceptions, streams and IO.
- Applets and applications.
- Events, event handling and AWT/Swing.
- Graphics, and images/animation/multimedia.

Reading Materials

HIT3041 Advanced Web Development

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1052 • Prerequisites: HIT1091 and HIT2092 • Teaching methods: Lectures (2 Hrs per Week), Laboratory (2 Hr per Week) • Assessment: Assignments, Examination

A subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Robotics & Mechatronics) / Bachelor of Science (Computer Science & Software Engineering), Bachelor of Software Engineering, Graduate Diploma of Information Technology (Internet Software Development).

Aims & Objectives
To introduce the technologies, concepts and techniques associated with the development of World Wide Web systems.

Content
- Introduction to the World Wide Web: definition, history and fundamental concepts.
- HTML: document structure, images, links, image maps, tables, frames.
- Protocols and server technology: HTTP, MIME, URIs.
- J avaScript: syntax, DOM, forms processing, common tasks.
- Style sheets: CSS formatting, CSS positioning.
- DHTML: dynamic techniques.
- Web design and usability: principles of navigation, usability, style guides.
- CGI programming: CGI concepts, forms, programming with Perl.
- XML: syntax, DTDs, XSL.
- ASP and VB Script: fundamental purpose and operation.

Textbook
Reding, E., Vodnik, S., HTML Illustrated Complete, 2nd edn, ITP, 2001

References

HIT3044 Professional Issues in Information Technology

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Available to final year students only • Teaching methods: Lecture/Workshop (2 Hours per Week), Tutorial (1 Hour per Week) • Assessment: Debate, Attendance, Examinations

A subject in the 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 Information Systems / Bachelor of Business, Bachelor of Multimedia (Multimedia Software Development) and Bachelor of Software Engineering.

Aims & Objectives
- To introduce and review codes of ethics and codes of conduct governing the behaviour of software engineering professionals.
- To provide a broad understanding of the impact of information technology on humanity and the environment.
• To explore the importance of knowing one’s belief system and values when confronting issues at the workplace and what it means to take social responsibility.
• To monitor one’s own personal development.

Content
A variety of topics are included that involve social, legal and ethical aspects of computing in the human context.
• Ethical issues in the workplace, in work-teams and with clients.
• Moral values in the light of generation, culture, heritage and technology.
• Implications of technology, globally and in the Australian context.
• Implications of specialist areas such as artificial intelligence.
• Computer abuse, crime detection.
• Legal issues in the IT profession.
• Community, global and environmental responsibility.
• Professional ethical codes and personal responsibility.

Recommended Text

HIT3047 Real-Time Programming
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT2014 and (HIT2253 or 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 Science (Computing), Bachelor of Engineering (Robotics and Mechatronics) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Telecommunication and Internet Technologies) / Bachelor of Science (Computer Science and Software Engineering) and Bachelor of Software Engineering.

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.

Reading Materials

HIT3049 Systems Analysis & Modelling
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT2016 and HIT2025 • 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.

Reading Materials

HIT3054 C++ for Java Programmers
12.5 Credit Points • 1 Semester • 40 Hours • Hawthorn • Prerequisite: HIT1052 • Preclusions: HIT2053, HIT2054, HIT3072 • 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 learning 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.

Content
• C++ as a hybrid programming language: structure of C++ programs, compilation process.
• Data types: control structures, functions, looping.
• 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.

Reading Materials
Budd, T., C++ for Java Programmers, Addison Wesley, 1999.
HIT3055  Software Maintenance Project

12.5 Credit Points · 1 Semester · 36 Hours per Week · Hawthorn · Prerequisite: HIT2056 and (HIT3054 or HIT3072) · Teaching methods: Lectures, Group Work, Laboratories · Assessment: Assignments, Group Work, Presentations

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.

Reading Materials

HIT3057  Software Testing and Reliability

12.5 Credit Points · 1 Semester · 36 Hours · Hawthorn · Prerequisite: HIT2056 and (HIT1210 or HIT1211) · Teaching methods: Lecture (2 Hours per Week), Tutorial/Workshop (1 Hour per Week) · Assessment: Assignments, Examinations

A subject in the Bachelor of Software Engineering.

Aims & Objectives
To provide students with the concepts and methodologies of software testing and reliability.

Content
Selection of test cases.
- Program instrumentation.
- Data flow analysis.
- Domain testing strategy.
- Mutation analysis.
- Basics of reliability theory.
- Reliability modelling.

Reading Materials

HIT3058  Software Engineering Project

12.5 Credit Points per Semester · 2 Semesters · 48 Hours over 2 Semesters · Hawthorn · Prerequisite: HIT1052 and (HIT3054 or HIT3072 or HIT2056) · Teaching methods: Lectures (2 Hours per Week), Regular Contact with Supervisor and Project Team Sessions (2 Hours per Week) · Assessment: Product Developed, Documentation Produced, Project Management

A subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Robotics & Mechatronics) / Bachelor of Science (Computer Science and Software Engineering), Bachelor of Engineering (Telecommunications & Internet Technologies)/Bachelor of Science (Computer Science & Software Engineering).

Aims & Objectives
- To develop a software system in a medium-size team (about 6 members).
- To apply the range of knowledge and skills gained throughout the course, especially in software engineering, programming, data communications, database and multi-user/multi-platform technologies.

Content
- Initiation, specification, design, implementation, testing and deployment of a large software system development, requiring students to function as members of a sizable team (where possible, these projects will be for industry clients).
- Theoretical material will encompass the tools that will be required for the software development.

Reading Materials

HIT3061  Software Team Project

12.5 Credit Points · 1 Semester · 36 Hours · Hawthorn · Prerequisite: HIT1052 and HIT2016 · Teaching methods: Lectures, Group Meetings and Consultation with Project Supervisor · Assessment: Assignments

A subject in the Bachelor of Science (Computing).

Aims & Objectives
- To teach students how to apply software engineering principles to the development and successful implementation of a major piece of software which satisfies user needs.
- To give students an understanding of how to work effectively and efficiently in a team.

Content
Students work as a team (typically 4-6 individuals) to develop a software product for a nominated client. Where possible, clients are external to the university. Each group is supervised closely by a member of staff who acts as a project manager. Three milestones must be satisfied. Teams are required to produce a formal management plan and software requirements document that are in accordance with currently accepted software engineering principles and practice. These requirements involve analysis of project requirements, project design and development. The final milestone involves a formal oral presentation of the completed software at which the user is present.

Reading Materials
Relevant textbooks on software engineering, HCI and computer programming and scripting languages.

HIT3063  UNIX Systems Programming

12.5 Credit Points · 1 Semester · 48 Hours · Hawthorn · Prerequisite: HIT2044 and (HIT3072 or HIT3054). Requires approval of Program Manager · Assessment: Assignments, Examinations

A subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Computing), Bachelor of Science (Information Technology), Bachelor of Software Engineering.

Aims & Objectives
- To study the advanced use of the UNIX system by a consideration of a selection of the system calls.
- To study the development of network-aware software.

Content
- Low-level I/O.
- File system access and manipulation; time under UNIX.
- Process control.
- Accessing user information.
- Signals and interrupts.
- Interprocess communication and networking.
- Remote procedure calls (RPC) and distributed computing environment (DCE) services.
- I/O to terminals and device control.

Reading Materials
**HIT3072  C++ for Programmers**

12.5 Credit Points  • 1 Semester  • 40 Hours  • Hawthorn  • Prerequisite: HIT1025 or HIT2110  • Precussions: HIT2053, HIT2054, HIT3054  • Teaching methods: Lectures (2 Hrs per Session), Laboratory (1 Hr per Session)  • Assessment: Laboratory Test, Assignment, Examination

A subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Computing), Bachelor of Science (Information Technology), Bachelor of Science (Mathematics and Computer Science), Bachelor of Engineering (Robotics) Bachelor of Science (Computer Science and 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 Engineering (Telecommunications and Internet Technologies), Bachelor of Multimedia (Networks and Computing), Bachelor of Multimedia (Networks and Computing)/Bachelor of Engineering (Telecommunications and Internet Technologies) and the Bachelor of Software Engineering, and an elective in the Bachelor of Engineering (Robotics & Mechatronics).

Note: Previous subject title: Introduction to C++

**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, scoping.
- Composite data types, pointers, references.
- C strings, C++ strings, namespace, uses of 'const'.
- 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.

**Reading Materials**


**HIT3077  Introduction to ERP Systems**

12.5 Credit Points  • 1 Semester  • 36 Hours  • Hawthorn  • Prerequisite: HIT1025, or HIT2046 and HIT2016 or HIT6016  • Teaching methods: Lectures, Tutorials • Assessment: Assignments, Examinations

**Aims & Objectives**

- To understand why processes are important in organizations.
- To gain a clear understanding of the organizational processes and transaction processing systems found in traditionally-structured organizations.
- To learn to document business processes.
- To understand the need for controls in information systems.
- To understand the concept of business process (re)engineering (BPR).
- To understand how enterprise software can support organizational processes.
- To understand how electronic commerce has the potential to change organizational processes.

**Content**

- Introduction to Business Processes
- Documenting Business Processes for ERP Systems
- E-Business and Business Processes
- Controlling Information and ERP Systems: Process Controls and IT Governance
- Order to Cash Processes
- Purchase to Pay Processes
- Integrated Production Process
- Business Reporting Process
- Implementing ERP systems
- Benefits from ERP systems
- Future Developments

**Reading Materials**


**HIT3078  Knowledge Management**

12.5 Credit Points  • 1 Semester  • 36 Hours  • Hawthorn  • Prerequisite: Students must be in the final year of their degree  • Teaching methods: Lectures and tutorials involving exercises in personal and group knowledge management and review of selected case studies  • Assessment: Assignments, Examinations

**Aims & Objectives**

By the end of the subject, students should be able to:

- Describe the nature of knowledge and the way in which it is created
- Describe a set of knowledge management (KM) processes.
- Identify and describe the main 3 strands of opinion on the nature and scope of KM
- Describe some recent examples of the application of KM principles and the degree to which successful outcomes were achieved;
- Describe ways in which computer-based information systems (CBISs) may facilitate KM practice and the critical importance of this contribution
- Apply principles learnt to personal and group knowledge management

**Content**

The following issues are explored:

- The nature of knowledge, knowledge creation and KM processes
- The socio-technical context of KM: i.e. social, technical and business-oriented views of KM
- Kinds of knowledge and their interaction
- The organisational context of KM
- Guidelines for undertaking personal and (to some extent) group knowledge management
- The contribution of IT to KM practice
- Review of some published case studies

**Textbook**

Goff, T. and Jones, T., 2003, Introduction to Knowledge Management in Business, Burlington MA, Butterworth Heinemann

**References**

A number of relevant journals are available in electronic form via the Swinburne library home page. These include:

- Communications of the ACM
- Decision Sciences
HIT3087  Advanced Java

12.5 Credit Points  • 1 Semester  • 36 Hours  • Hawthorn  • Prerequisite: HIT1052  • Prerequisite: 75% in HIT1052  • Prerequisite: HIT2053  • Teaching methods: Lectures (2 hrs per week), Laboratory (2 hrs per week)  • Assessment: Assignments, Examinations

A subject in the Bachelor of Science (Computer Science and Software Engineering), Bachelor of Science (Information Technology), and the Bachelor of Software Engineering.

Aims & Objectives
To develop skills in advanced Java programming, including the use of J ava Foundation Classes and writing Java Beans.

Content
• The Swing API.
• Specialised dialogs: J Color Chooser, J File Chooser, J Option Pane, etc.
• Model-based components: J Tree, J Table, etc.
• Image display.
• Threads.
• Serialisation.
• J ava Beans.
• Introduction to RMI.

Reading Materials

HIT3084  E-Commerce: A Business Perspective

12.5 Credit Points  • 1 Semester  • 36 Hours  • Hawthorn  • Prerequisite: HIT2006 or equivalent  • Teaching methods: Lecture (2 hrs per week), Laboratory (1 hr 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.

Textbook

References

Swinburne University of Technology | Undergraduate Course Handbook 2005
Aims & Objectives
To facilitate a pragmatic hands-on study by students of the selection and use of the agile software development methods.

Content
Modules selected from a collection covering important issues in agile software development methods, such as:
• Overview of Agile software development
• Agile methodologies
• Common techniques and practices
• extreme programming

Reading Materials

HIT3099 Enterprise.NET
12.5 Credit Points  1 Semester  3 Hours per Week  Hawthorn  Prerequisite: HIT3013 or HIT3197 Available to BSc(IT) students only  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 200

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

Reading Materials
There is no prescribed text. Students will be directed to online resources.

HIT3100 Industry-Based Learning
50 Credit Points  20 Weeks  Nil  Hawthorn  Prerequisite: HIT3101 Industry-Based Learning Available only to BS(IT) students only  Teaching methods: 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 are 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.

Reading Materials
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.

Reading Materials
Nil

HIT3110 Component Based Development .NET
12.5 Credit Points  1 Semester  36 Hours  Hawthorn  Prerequisite: HIT2110  Teaching methods: Lectures, Tutorials, Laboratories  Assessment: Assignments, Examinations

Aims & Objectives
• To develop an understanding of the component-based approach to information systems development.
• 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: 75% in HIT3037 or HIT1025 • 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.
• J ava 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: HIT3037 or equivalent; Available to BSc(IT) students only • Teaching methods: Lectures (2 hrs per week), Laboratory (1 hr 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
• Network 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

Reading Materials

HIT3122 Engineering 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 QSeries, 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: Available to final year students only • Teaching methods: Lectures (1 hr per week), Tutorials (2 hrs per week) • Assessment: Assignments, Examinations

Aims & Objectives
To develop students with the principles, techniques and ability to develop distributed software systems and software applications.

Content
• Characterise and recognise the information requirements of business and organisations and the methods by which such systems may be obtained and managed.
• Critically evaluate the competing claims of the proponents of the products, services and methods and the rationale that support these claims.
• Identify a range of IS development and acquisition methods (ISDMs) and place these in an historical context.
• Discuss the main methods currently in use, and the often contentious technical, managerial and social issues associated with them.
• Evaluate the methods that may be appropriate in particular organisational and social contexts.
• Justify the need for careful analysis, risk assessment and control procedures suitable for different system development approaches.
• Discuss current trends and critically assess competing claims about future directions in information systems strategies.

Content
• Information system development: an organisational context.
• Information systems: establishing the framework.
• Evolution of information systems in organisations.
• The information technology (IT) perspective.
• Life cycle variations and managing IT development.
• Newer technologies.
• Business perspectives.
• End-user developed applications.
• Software risk and software quality.
• Business, management, and information systems in organisations.
• Information and systems as a resource.
• Ethics.
• Building a responsive IT infrastructure and ethics issues.
• Community concerns and privacy.

Reading Materials

HIT3138 Intelligent Systems
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT3102 for CSSE and BSE students • Teaching methods: Lectures, Tutorials and ‘Take-Home’ Laboratory Work • Assessment: Assignments, Examinations

A subject in the Bachelor of Science (Biomedical Sciences) and Bachelor of Engineering (Electronics & Computer Systems), and an elective in the Bachelor of Engineering (Robotics & Mechatronics).

Note: Replacing subject HIT423 Intelligent Systems.

Aims & Objectives
• To introduce students to artificial neural networks and their application to a range of problems. The range of networks includes back propagation, specialist classification networks, self-organising networks, together with a range of more advanced networks involving more biologically plausible networks. Sample applications are drawn from medicine, science and engineering.
• To introduce students to techniques involving the application of the principles of Darwinian evolution to design and optimisation problems.
• To introduce students to collective intelligence algorithms and their applications.

Content
• Neural networks; artificial neural networks and the brain.
• Artificial neurons.
• Learning rates.
• The importance of non-linear output transformations.
• Three basic node types.
• The back propagation learning algorithm and practical implementation considerations.
• Enhancements to back prop: cumulative update and momentum, and applications.
• Using fuzzy inputs and outputs to a neural net.
• Classification networks: PNN, Counterprop, LVQ, cluster networks and applications.
• Divide and conquer networks: cascade networks, ensembles of networks and applications.
• Data compression networks and applications.
• Self-organising maps and applications.
• More biologically plausible neurons.
• Evolutionary systems.
• An introduction to Darwinian evolution.
• The basic evolutionary algorithm: example.
• Crossover rates and type; mutation types.
• Population control strategies.
• Examples in scheduling function optimisation look-up table generation.
• Robot algorithm development.
• The problem of premature convergence.
• Evolutionary systems and neural nets: developing net structure, auto designing.
• Fuzzy membership functions using nets inside an evolutionary system.
• 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 stigmergy.
• The Art Colony Optimisation and Particle Swarm Algorithms.

HIT3140 Multimedia for WWW
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT1091 or HIT3041 • Teaching methods: Lectures (2 hrs per week), Tutorials (1 hr 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.
• Multimdia hardware and software: components of a multimedia system, optical storage, input and output technologies, authoring software, processing software.
• Multimdia documents, databases and hypertext: hypemedia, SGML, HTML, OpenDoc, M HEG.
• Multimdia user interfaces and design fundamentals: specific design issues and approaches, navigation issues, user centred design and development.
• Multimdia communication systems: multimedia servers, high-speed LANs, distributed multimedia databases, video conferencing and collaborative work environments.
• Multimdia 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.

Reading Materials
**HIT3142  Object Oriented Modelling**

12.5 Credit Points • 1 Semester • 24 Hours • Hawthorn • Prerequisite: HIT2016 and HIT2052 or HIT1152 or HIT2110 or HIT3072 or HIT3054 Requires approval of Program Manager. (Requires HIT3049 from 2005) • 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.

**Reading Materials**

**HIT3149  Analysis, Modelling and Design**

12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT1031 and HIT1031 and HIT2016 • Precursior 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, Bachelor of Engineering (Robotics & Mechatronics)/Bachelor of Science (Computer Science & Software Engineering).

**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
- Defining business information requirements
- Change, environments, risk, feasibility
Modelling Paradigms
- Structured analysis
- Information modelling
- Others, such as Jackson System Development

**Reading Materials**

**HIT3150  Multi-Agent Systems**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT3002 or an equivalent course in intelligent systems • Teaching methods: Lecture (2 hrs per week), Lab (preferred) or Tutorial (1 hr per week) • Assessment: Assignments, Examinations

Aims & Objectives
By the end of this subject students should be able to understand the concepts and design principles of intelligent agents and multi-agent systems.

**Content**
- Introduction to Intelligent Agents and Multi-Agent Systems
- Intelligent Agents
- Deductive Reasoning Agents
- Practical Reasoning Agents
- Reactive and Hybrid Agents
- Multi-agent Interactions
- Reaching Agreement (negotiations)
- Multi-agent Communication
- Multi-agent Protocols (working together)
- Applications

**Reading Materials**
• The contrasts between the philosophy of quality management approaches to SPI and recent trends in software development exemplified by the new ‘agile development’ methods will be examined critically.

Reading Materials

HIT3157 Large Scale System Design
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT2025
Teaching methods: Lectures (2 hrs per week), Tutorials (1 hr per week)
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.

Reading Materials

HIT3164 Internet Networking Infrastructure
12.5 Credit Points • 1 Semester • 36 Hours • Hawthorn • Prerequisite: HIT2120 and HIT2125 (available to BSc(IT) students only)
Teaching methods: Lecture (2 Hours per Week), Laboratory (2 Hours per Week)
Assessment: Assignments, Examinations
A subject in the Bachelor of Science (Information Technology)

Aims & Objectives
This subject is based on the study of MANs/WANs and the associated infrastructure technologies to enable Internet networking. Along with the technologies, the associated protocols that are implemented with Internet networking are studied in detail. New developments such as IP over ATM and next-generation Internet are also reviewed.

Content
Technologies include:
• DQDB
• FDDI
• SDH/SONET

Emphasis is placed on protocols:
• TCP/IP protocol suite
• Routing in the Internet
• RIP and OSPF
• Internet multicasting
• DNS
• Firewall design
• Internet security in today’s environment

Reading Materials
To be advised.

HIT3166 Software Testing Processes and Automation
12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: Nil
Teaching methods: Lecture, Tutorials, Labs • Assessment: Assignments, Labs, Examinations

Aims & Objectives
Students who successfully complete this subject will be able to:
• Understand and apply a broad testing knowledge.
• Understand and apply testing tools.
• Understand testing performance and apply performance testing tools.

Content
• Testing basic concepts
• Test levels
• Test techniques
• Test related measures
• Managing the test process
• Automated testing and automated testing life-cycle
• Automated test development
• Automated defect tracking and reporting
• Automated performance testing

Reading Materials
Kit, E, Software testing in the real world: improving the process, 1995.
Selected sections of Mercurio and Rational manuals (these manuals are available in electronic forms in the laboratories and the required sections can be printed or viewed online!): Rational Software, Rational Robot User’s Guide, 2002.

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, Attendance
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
HIT3197  Advanced .NET Programming

12.5 Credit Points  1 Semester  3 Hours per Week  Hawthorn  Prerequisite: HIT3054 or HIT3013 (requires approval of program manager)  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

Reading Materials

HIT3243  Games Programming

12.5 Credit Points  1 Semester  3 Hours per Week  Hawthorn  Prerequisite: HIT3054 (C++ for) Java Programmers or HIT3072 C++ for Programmers  Teaching methods: Lectures (2 Hours per week), Laboratories (1 Hour per week)  Assessment: Assignments, Examinations

A subject in the Bachelor of Science(Computer Science and Software Engineering), Bachelor of Science (Computing), Bachelor of Information Technology, Bachelor of Multimedia (Multimedia Software Development), Bachelor of Software Engineering

Aims & Objectives
To introduce the implementation of high performance 2D and 3D programming and games software with practical application onto Windows Operating System platforms.

Content
- Foundations to Windows Programming
- Processes and Threads
- 3D Maths
- 3D Modelling
- Introduction to DirectX
- Transformations and Viewports in DirectX
- Animation
- Texture Mapping
- 3D Graphics File Formats
- Lighting
- DirectSound
- DirectInput

Reading Materials
Petraus, C., Programming Windows, 5th edn, Microsoft Press, 1999

HIT4010  Research Methods

12.5 Credit Points  2 Semesters  5 Hours per Week for 2 Semesters  Hawthorn  Prerequisite: Available to Honours students only  Teaching methods: Lectures, tutorials  Assessment: Written Reports, Presentation

A subject in the Bachelor of Information Systems (Hons), Bachelor of Information Technology (Hons), and Bachelor of Science (Hons) (Computer Science)

Aims & Objectives
By the end of this subject students should be able to:

- Identify the basic principles of academic research and the fundamentals concepts of research.
- Interpret and critically evaluate previously published research in a formal literature review.
- Describe the characteristic features of common research methods and debate their relative merits.
- Identify a research question and justify the selection of an appropriate research method.
- The ability to produce a written research proposal and effectively present information in an oral presentation.

Content
- Defining research.
- Specifying roles of student and supervisor.
- Developing a research question.
- Reviewing the literature.
- Planning research design.
- Writing a research proposal.
- Presentation techniques.
- Qualitative research methodologies.
- Quantitative research methodologies.
- Writing a research paper and writing skills.

Reading Materials
• To apply a range of knowledge and skills gained throughout the course, especially in software engineering, programming, data communications, database and multi-user/multi-platform technologies.

**Content**

• Initiation, specification, design, implementation, testing and initial maintenance of a large software system development, requiring students to function as members of a sizeable team (where possible these projects will be relevant to identifiable industry needs).

• Theoretical material will encompass the tools that will be required for the software development.

**Reading Materials**

Reading materials will be announced during the subject, the following are a guide:


**HIT4069 Research Paper**

12.5 Credit Points • 1 Semester • 3 Hours per Week • Hawthorn • Prerequisite: HIT2024 and HIT2056. Requires approval of program manager. Teaching methods: Lectures, Tutorials, Self-directed Research, Student Presentations. 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.

**Reading Materials**

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: Final year BSE and approval of program manager. 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 an article of around 8,000 words on a topic chosen in consultation with a staff member. Generally the paper will take the form of a comprehensive literature review of a topic of contemporary interest, followed by a presentation of research undertaken by the student.

**Reading Materials**

There is no prescribed text. Students will be directed to appropriate books and journal articles.

**HIT4071 Research Project**

12.5 Credit Points • 1 Semester • 120 Hours • Hawthorn • Prerequisite: Students must be in the final year of their program. 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.

**Reading Materials**

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. Requires approval of program manager. 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 systems. 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.
- Internationalisation: designing software to allow for use by multiple cultures.
- Formal approaches to specification and design: specifying mission-critical systems.
- Accessibility: designing for less-able 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.

**Reading Materials**

- 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 HM278).

Note: students may only receive credit for one of: HMA103, HMA104, HM B110, HM B111 and HM S102.

**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 the results of such investigations.

**Content**

- Ordering & grouping data: frequency tables; picturing data: histograms and stemplots; summarising data: median, IQR & boxplots; the mean & standard deviation; 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.

References
Comprehensive student notes will be available from the Swinburne bookshop.
A graphics calculator will be required: the Texas TI-83 or equivalent.

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 HSM102.

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.
• Index numbers and an introduction to time series.
• Application to data drawn from the political and social sciences and media.
• Use of computational aids in analysing univariate data; graphics calculators and spreadsheets.
• 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 spreadsheets.
• Samples and populations, methods of sampling. Sampling distributions and the standard error. Introduction to hypothesis testing and confidence intervals.
• Sources of secondary data. Analysis of ABS data. Capturing and analysing secondary data with a spreadsheet.

References
Comprehensive student notes will be available from the Swinburne bookshop.
A graphics calculator will be required: the Texas TI-83 or equivalent.

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: Examination, Test, Assignments.
A subject in the Bachelor of Social Science (Psychology); Bachelor of Social Science; Bachelor of Arts (Psychology)/Psychophysiology; Bachelor of Arts; Bachelor of Science (Psychology)/Psychophysiology; and Bachelor of Science (Psychology)/Biochemistry.

Aims & Objectives
• To introduce you to the statistical package SPSS for Windows (SPSS stands for Statistical Package for the Social Sciences).
• To develop your capacity to carry out independent statistical investigations, together with an awareness of the assumptions and limitations involved with the generalisation of results from 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.
A graphics calculator is required: the Texas TI-83, or approved equivalent. Comprehensive student notes will be available from the Swinburne bookshop.

### Recommended Reading
- **Basic financial mathematics.**
- **Time series analysis.**
- **Correlation and linear regression.**
- **Hypothesis testing.**
- **Introduction to probability and the normal probability distribution.**
- **Measures of central tendency and dispersion.**
- **Presentation of statistical data.**

### 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 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 graphics calculator will be 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, Text

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 graphics calculator will be required: the Texas TI-83, or approved equivalent.

### 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 Health Science (Public and Environmental Health), Bachelor of Science (Biotechnology/Biochemistry), Bachelor of Science (Biotechnology/Biochemistry) / Bachelor of Arts (Media & Communications), and Bachelor of Science (Biotechnology/Biochemistry) / Bachelor of Business.

#### Aims & Objectives
- To provide knowledge and skills sufficient to allow students to understand the role of statistics in research.
- To develop skill in the basic methods of data gathering and analysis.
- To provide sufficient background to be able to interpret statistical results in research papers.
- To develop sufficient knowledge of probability and probability distributions to support further studies in statistics and operations research.

#### Content
- Displaying and summarising univariate and bivariate data.
- Introduction to probability.
- The normal, binomial and Poisson distributions; simulation of random variables.
- Obtaining data from experiments and surveys.
- Estimating means and proportions.
- Statistical tests using the normal, t, and Chi-square distributions.
- Simple linear regression.

#### Textbook
A Swinburne-prepared combined text and workbook.
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, Examination, Tests.

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 (Photronics) and Bachelor of Science (Photronics).

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, curvature, indeterminate forms, limits and calculator use.

Integration (20%): Substitution, parts, general techniques, areas, centroids, volumes, arc lengths, surface areas, numerical integration, improper integrals and calculator use.

Basic Data Analysis (8%): Graphical and numerical summaries of single variable data, bivariate plots, correlation, least squares regression lines and residual analysis.

Note: A graphics calculator will be used extensively in this subject.

References

Course notes will be available.

Graphics calculator: TI-83 or TI-83 Plus or equivalent.

HMS112 Engineering Mathematics 2

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HMS111 • Teaching methods: Lectures (48 Hours), Tutorials/Practice Classes (12 Hours) • Assessment: Assignments, Examination, Tests.

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 (Biomedical Sciences), Bachelor of Science (Biomedical Sciences)/Bachelor of Engineering (Electronics & Computer Systems), Bachelor of Science (Photronics) and Bachelor of Science (Photronics) / 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 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.
Probability: Probability distributions, e.g. Binomial, Poisson, Gaussian, and their applications in computing.

Logic: Formal notation; propositional calculus, predicate calculus. Types of logical reasoning.

Aims & Objectives
- To provide students with the mathematical knowledge and skills that are essential for their concurrent and subsequent engineering studies.
- To support students in their concurrent and subsequent engineering studies.

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 antiderivation, 3D curves, parametric differentiation and antiderivation.
- 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.

References
- Course notes will be available.
- Graphics calculator: TI-83 or equivalent.

HMS112P Engineering Mathematics 2P
12.5 Credit Points • 1 Semester • 4 Hours per Week • Hawthorn • Prerequisite: HMS111P • Teaching methods: Classes (48 Hours) • Assessment: Assignments, Examinations, Tests.

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 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 antiderivation, 3D curves, parametric differentiation and antiderivation.
- 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.

References
- Course notes will be available.
- Graphics calculator: TI-83 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
- Boolean Algebra: Definitions & applications, simplification & proof, normal forms.
- Number: Binary & other number systems, combinatorial analysis: counting & listing sets, division 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.

References
- HM5133 lecture notes (available from the Swinburne bookshop)

Recommended Reading

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.
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 a plane, Gauss’s divergence theorem, Stokes’ theorem, engineering application.

Note: The Mathematica package will be used in this subject.

Textbook

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 a plane, Gauss’s divergence theorem, Stokes’ theorem, engineering application.

Note: The Mathematica package will be used in this subject.

Textbook

A subject in the Bachelor of Electrical Engineering

AIMS & OBJECTIVES
To provide students with the mathematical knowledge and skills to support their concurrent and subsequent engineering studies.

Content
- Matrix analysis (30%): The eigenvalue problem, numerical methods, reduction to canonical form, functions of a matrix, engineering application.
- Functions of a Complex Variable (30%): Complex functions and mappings, complex differentiation, complex series, singularities, zeros and residues, contour integration, 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

A subject in the Bachelor of Electrical Engineering (Telecommunications and Internet Technologies)

AIMS & OBJECTIVES
To provide students with the mathematical knowledge and skills to support their concurrent and subsequent engineering studies.

Content
- 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 (20%): 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.

References
correlation and regression, contingency tables, goodness of fit tests, extreme value distributions with application to hydrology.

**References**


Class notes will be available from the Swinburne Bookshop.

The Mathematica and the Matlab computer packages will be used.

A graphics calculator will be required: the Texas TI-83 or equivalent, will be used in the

Applied Probability and Statistics section.

**HMS411 Engineering Mathematics 5A**

12.5 Credit Points • 1 Semester • 5 Hours per Week • Hawthorn • Prerequisite: HM5212 or equivalent • Teaching methods: Lectures (48 Hours), Tutorials/ Laboratories (12 Hours) • Assessment: Assignments, Tests.

A subject in the Bachelor of Engineering (Mechanical)

**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.
- Algorithms.

- Binary Systems and Architecture.
- Contemporary Computer Systems.
- Operating Systems.
- Data Communication and Networks.
- Artificial Intelligence.
- Social Issues.

**Reading Materials**


**LAC200 Programming**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LAC100 • Teaching methods: Laboratory Sessions supported by Virtual Lectures and Online Resources • 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**

Students become competent in computer programming concepts and techniques, including specification, design, testing, documentation etc.

**Content**

Students cover the basics such as program control, decision-making, subroutines, input/output handling and documentation. Students will choose a study stream in one of the programming languages C++, Java or Visual Basic.

**Textbook**

- C++ study stream


  J ava study stream


**Visual Basic study stream**


**Recommended Reading**


**LAC220 Systems Programming and Architectures**

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, Online tests

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**

This subject extends the basic information technology skills gained in first year computing subjects to the development of skills necessary to produce useful software-based system tools and applications for computer systems using the UNIX operating system.

The subject aims:

- To provide an introductory course in the use of the UNIX operating system, including its structure, its user interface and its programming environments.

This subject will also provide a solid foundation for further studies and learning in other subjects from the information technology and information systems study streams.

**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.

**Reading Materials**

**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 Lectures • Assessment: Assignments

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.

**Reading Materials**
- Lanford, D 1995, Practical Computer Ethics, McGraw-Hill

**LAC320  Advanced Programming & Systems Project**

25 Credit Points • 12 Weeks or equivalent • 5 Hours per Week • Lilydale
- Prerequisite: LAI200 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.

**Reading Materials**
- Other texts and reading will be specified depending upon participant’s choice of programming languages

**LAI100  Information Systems Fundamentals**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
- Prerequisite: NIL • Teaching methods: Lecture and Laboratory • Assessment: 2 Assignments and Final 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**
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.

**Reading Materials**

**LA1210  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 M odelling
- 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

**Reading Materials**

**LA1230  Management Support Systems**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
- Prerequisite: LAI100 • Teaching methods: Virtual Lecture and Tutorial/lab • Assessment: 2 Assignments and Final Examination

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.

**Reading Materials**

**LA1240  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: 2 Assignments and Final 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**
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.

Reading Materials

LAI260 Human-Computer Interaction
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lillydale
Prerequisite: LAI100 plus any one Stage 1 or 2 Information Technology, Systems and Multimedia Discipline subjects • Teaching methods: Virtual lecture with a tutorial and a lab • Assessment: 2 Assignments and Final Examination
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.

Reading Materials

LAI300 Professional Reading & Writing in Technology & Culture
12.5 Credit Points • 12 Weeks or equivalent • 2.5 Hours per Week • Lillydale
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 Lillydale.

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.

Reading Materials

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 • Lillydale
Prerequisite: LAI210 • Teaching methods: Virtual Presentations with Traditional Face-to-Face Tutorials • Assessment: Assignments, Examination or Research Project, Online test
A Stage 3 subject in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Swinburne Lillydale.

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 (DBMS), Object-Oriented DBMS, databases on the Internet as well as databases in electronic commerce. 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.

Reading Materials

LAI350 eCommerce & Business Computing Applications
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lillydale
Prerequisite: Any two of LAI100, LAI230, LAM270, LAI240, LAI260 LAM290 • Teaching methods: Virtual on-line lectures and Face-to-Face Labs and Tutorials • Assessment: Assignments and Examination
A Stage 3 subject in the Information Technology, Systems and Multimedia discipline that may be undertaken in any other degree program at Swinburne Lillydale.

Aims & Objectives
AimsElectronic 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 e-Commerce issues such as the components of an e-Commerce system, networks, security, technical issues for e-Commerce, 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 affected 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 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.

Reading Materials


LAM270 Multimedia Tools and Concepts

12.5 Credit Points • 12 Weeks or equivalent • 4 Hours per Week • Lilydale • Prerequisite: LAS100 and LSM100 • Teaching methods: Virtual Presentations with 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

With the growing development of the Internet and various computing and communications technologies, many opportunities have evolved for communicating information using a multimedia form. This subject allows students to gain knowledge of the various multimedia and related concepts, and at the same time gain skills in using some multimedia tools. Students will not be taught specific packages and products, rather you will have opportunities to access and learn these many and varied development and production tools which may be applied to various multimedia applications.

Content

Topics include multimedia terms and concepts, design issues leading to the development and implementation of multimedia projects.

- Multimedia terms and concepts
- Design considerations for multimedia projects
- The development process requirements
- Packaging and promotion
- Games development

Reading Materials


LAM290 Multimedia and Web Design

12.5 Credit Points • 12 Weeks or equivalent • 4 Hours per Week • Lilydale • Prerequisite: LAS100 and LSM100 • Teaching methods: Virtual Presentations with 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

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

Reading Materials


LAM300 IMM Production and Project

25 Credit Points • Equivalent to two subjects of study for one semester or approximately 300–400 hours • Lilydale • Prerequisite: Any three of LAM 270, LAM 290, LAI260, LSM 200, and LSM 203 • Assessment: Website or Multimedia Design, Virtual Business/Community Website Development

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

Taking a project from requirements to implementation and support requires considerable personal and group management skills. Requirements are to be 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.

Reading Materials

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 • 1.5 Hours per Week • Lilydale

- Prerequisite: Nil
- Teaching methods: Traditional Face-to-Face Lectures with Conventional Face-to-Face Labs and Tutorials • Assessment: Assignments, Examination, On-Line Tests, Projects)

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 reengineering as well as concentrating on programming, implementations and maintenance activities. Software engineering is also discusses in some detail regarding the management of the development process.

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.

**Reading Materials**


LAS200  
**Systems Analysis and Design**

12.5 Credit Points • 12 Weeks or equivalent • 1.5 Hours per Week • Lilydale

- Prerequisite: LAS100 and preferably LAI210 • 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.

**Reading Materials**


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, Projects)

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.

**Reading Materials**


Readings are referenced by students from Library, WWF and periodical resources, and are topic dependent.

LBC100  
**Accounting 1**

12.5 Credit Points • 12 Weeks or equivalent • 3.5 Hours per Week • Lilydale

- Prerequisite: Nil • Teaching methods: Lectures and Tutorials • Assessment: Examination, Tests, Group Assignment, Computer-Based Tasks

A Stage 1 subject in Bachelor of Business (Accounting), which may also be taken in any other degree program at Swinburne Lilydale.

**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: 1.5-Hour Lecture per Week, 1.5-Hour Tutorial per Week •
Assessment: Topic Tests (2), Group Assignment, Final Exam
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.

**Reading Materials**

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**LBC200 Computer Accounting Systems**
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBC100 •
Teaching methods: Lecture, Tutorial, Exercises, Assignments •
Assessment: Examination, 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 development of the accounting process as an information flow to provide the basis for management control and decision-making.

**Content**
The computerized 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, 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.

**Reading Materials**
CCH Macquarie Dictionary of Accounting, student version, latest edn, CCH.

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**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, 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**
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.
• Accounting for corporate investments: joint arrangements, consolidation accounting, equity accounting.
• Liquidation and winding-up.

**Reading Materials**
Leo, KJ & Hoggett, JR, Company Accounting in Australia, latest edn, John Wiley & Sons, Brisbane.
LBC201 Learning Guide, latest edn, Swinburne University of Technology, Lilydale.

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**LBC202 Management Accounting I**
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale •
Prerequisite: LBC100, LBC200 •
Teaching methods: Lecture, Tutorial, Exercises, Assignments •
Assessment: Examination, 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**
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**

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**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

Langfield-Smith, K, Thome, H & Horton, RW, Management Accounting, latest edn, McGraw Hill, Australia.
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

Ross, SA et al., Fundamentals of Corporate Finance, latest Aust edn, MCGraw Hill.
Brealey, RA et al., Principles of Corporate Finance, latest edn.
Gitman, LJ et al., Principles of Managerial Finance, latest Aust edn, Addison Wesley.
Peirson, G et al., Business Finance, latest edn, MCGraw Hill.
Peirson, G et al., Essentials of Business Finance, latest edn, MCGraw Hill.
Petty, J W et al., Financial Management, latest edn.

LBC300 Accounting Theory

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LBC100, 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, LBL200 • 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 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, 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.
Barkuczky, S, Australian Tax Casebook, latest edn, CCH Australia Ltd, North Ryde, NSW.

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, Tests, Examination

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.
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

Beelaerts, C & Forde, K. Understanding Investments, 4th edn, W.rightbooks, Elsternwick.
Haugen, RA. Modern Investment Theory, latest edn, Prentice Hall.
Sharpe, WF & Alexander, GI. Investments, latest edn, Prentice Hall.
Wenger, 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.
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.

Reading Materials

Aims & Objectives
To provide students with an understanding of microeconomic 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 major 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.

Reading Materials

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 major 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.

Reading Materials

Aims & Objectives
To provide students with:
- A basic understanding of the Australian financial system,
- A working knowledge of selected Australian financial markets and instruments, and
- An appreciation of issues relating to financial management.

Content
This subject examines the Australian financial system by providing an introduction to its institutions, instruments and markets. The subject begins by reviewing the characteristics of a financial system, identifies the functions of various Australian financial institutions, and considers issues relating to the pricing of securities. Next, the subject explores the operations of various financial markets - the money, bond, share and overseas market. The subject concludes by examining monetary policy, the behaviour of financial variables, and the role and nature of derivatives.

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Reading Materials
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; foreign direct investment; 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.

Reading Materials

LBE302 Economic Development
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LBE100, LBE200 • Teaching methods: Lectures and Tutorials • 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 increase students' awareness and understanding of conceptual and contemporary "Third World" economic development issues and problems.

Content
The subject begins by examining the nature and meaning of economic development and its various manifestations. Particular attention is devoted to examining the characteristics of a "third world" nation, reviewing various basic models and theories of development, and exploring the concepts of poverty, economic growth and economic development. The subject then concentrates on selected development problems and policies. Topics reviewed include population, human capital, agriculture, the environment, trade, foreign investment, the role of aid and the impact of third world debt and IMF stabilisation policies. Finally the subject discusses how economic policy is constructed and implemented. Attention is devoted to issues relating to development planning and the role of the state, fiscal policy, the financial system and prospects for third world development.

Reading Materials

LBE100 Introduction to Commercial Law
12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: Nil • Teaching methods: One 2-Hour Lecture and One 1-Hour Tutorial • Assessment: Class Exercises (25%), Multiple-Choice Test (25%), Open-Book Final Exam (50%)
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 students to basic legal concepts.
- To develop an understanding of the nature and function of contract law.
- To develop critical thinking and analytical skill.
**LBL100 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 and Bachelor of Business (eCommerce) programs 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

**Textbook**


**Recommended Reading**

Akindemowo, O 1999, Information Technology Law in Australia, LBC Information Services, Sydney.
• 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: 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. 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**


**LBM202 Marketing Communications**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per week • Lilydale • Prerequisite: LBM100 • 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. It 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: LBM200 plus either: LBM201 or LBM202 • 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 relationships 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

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 (e.g. financial services, hospital services, insurance industry, catering services, etc.).

Recommended Reading
Lovelock, C 1996, Services Marketing, 3rd edn, Prentice-Hall, USA.

LBX300 International Business Strategies

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.

Reading Materials

LCE300 Planning for Career and Work

Aims & Objectives
This subject aims to
- Provide an opportunity for third year student to synthesise their learning from all subjects and reflect on their resulting skills and abilities and use this information to focus on planning for their careers and lifelong learning.
- Place individual student learning in a context of the global knowledge economy, technological advances and demands for increased productivity.
- Foster students’ understanding of their own learning, the need to be adaptive, the need to plan strategically and to take responsibility for their continued lifelong learning.

On completion of this subject, students will be able to:
- Demonstrate integration of learning and experiences gained from their undergraduate subjects.
- Identify personal attributes, skills and values as well as the attributes skills and values of others.
- Identify attributes and skills required for self-employment and the benefits of self-employment as a career option.
- Explore holistic approaches to personal career path and life planning.
- Recognise the importance of lifelong learning for social, community and professional development.
- Demonstrate an understanding of the impacts of technology and continuous change in the workplace.
- Demonstrate an understanding of the impacts and challenges of cultural diversity, individuals and teams in the workplace.
- Demonstrate an understanding of the current and future job market place, attributes relevant to today’s job market and career options available.
- Explore personal career options and develop a strategy to find graduate employment. Self-employment or business development.
- Compile a professional profile and portfolio.

Content
- Synthesis of learning from studies undertaken and identification of skills developed


• Integration of prior learning and development of an effective knowledge resource for current and future use
• Mapping of personal attributes, values and skills
• Career decision making - an introduction to career planning models, theories and action planning
• Opportunity awareness - research and understanding of significant aspects of employment and the job market including the future of work, the role of enterprise and innovation, range of relevant jobs available, career pathways, graduate destinations, pay and conditions, risk management
• Interview theory and practice
• Presentation techniques
• Enhanced portfolio development
• Reflection – impact of continuous change in the workplace, personal strengths related to identifiable goals and strategies, strategic plan

Reading Materials
Bartos, P. & Noble, T. (1996), Negotiator’s Path: for those who wish to take the quickest path to career action, Forge ConneXions Pty Ltd
Bartos, P. & Noble, T. (1996), Catalyst’s Path: for those who wish to take the time to reflect on their whole life’s ebb and flow to provide inspiration for their career plans, Forge ConneXions Pty Ltd
Iannuzzi, P, Mangrum, CT & Strichart, SS 1999, Teaching Information Literary Skills, Allyn

In Information Technology Literacy (including spreadsheet, database, word processing and PowerPoint presentation) before commencing this unit.

Information Methods requires a student to undertake studies and practical exercises that encourage skills and independent work in developing, manipulating and communicating information within a variety of global and cultural contexts. Students are assumed to have successfully completed an introductory course in Information Technology Literacy (including spreadsheet, database, word processing and PowerPoint presentation) before commencing this unit.

Textbook

References
Iannuzzi, P, Mangrum, CT & Strichart, SS 1999, Teaching Information Literary Skills, Allyn & Bacon, USA.

LCL101 Information Methods
12.5 Credit Points - 12 Weeks or equivalent - 3 Hours per Week - Lilydale • Prerequisite: Nil • Teaching methods: A series of Traditional Lectures and Laboratories • Assessment: Assignments, Examination
A Stage 1 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 semantics.

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.

Information M methods requires a student to undertake studies and practical exercises that encourage skills and independent work in developing, manipulating and communicating information within a variety of global and cultural contexts. Students are assumed to have successfully completed an introductory course in Information Technology Literacy (including spreadsheet, database, word processing and PowerPoint presentation) before commencing this unit.

Textbook

References
Iannuzzi, P, Mangrum, CT & Strichart, SS 1999, Teaching Information Literary Skills, Allyn & Bacon, USA.
Describe the basic accounting concepts of assets, liabilities, equity, revenue

On completion of this subject, students will be able to:

- Provide the participant with the knowledge and skills to interpret and use accounting reports.

- 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.

Content

- Business mathematics.

- Business statistics.

- Calculators or computer calculations for business.

- Break-even analysis.

- Basic accounting concepts and the accounting equation.

- Computerised double entry book-keeping.

- Financial reports and accounting standards.

- Capital investment decisions.

- Fundamentals of budgeting.

- Measures of central tendency and dispersion.

- Correlation and regression analysis.

Recommended Reading


Kienan, B 2000, Small Business Solutions: ECommerce, Microsoft Press, USA.


Kienan, B 2000, Small Business Solutions: ECommerce, Microsoft Press, USA.


In addition students will be directed to relevant websites and encouraged to research other online resources.

Aims & Objectives

This subject has three aims:

- 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.
• Market segmentation, targeting, and positioning.
• Marketing mix.
• The application of e-marketing techniques to new and existing business sectors.

Reading Materials

Websites

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.

Reading Materials
Aldrich, D 1999, Mastering the Digital Marketplace, John Wiley & Sons, 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, http://www.1to1.com
Internet World Guide to One-to-One Web Marketing, http://www.1to1web.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.

Reading Materials
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 software delivered in this module.
Hofstetter, F 1997, Multimedia Literacy, McGraw-Hill, USA.
Shelly, G & Cashman, T 1998, Course Technology Cambridge, USA.
Vaughan, T 1996, Multimedia: Making it Work, Osborne M Graw-Hill, USA.

Websites

LEB104 Communication

12.5 Credit Points - 12 Weeks or equivalent • 3 Hours per Week • Lilydale/Prahran
- Prerequisite: Nil • Teaching methods: Lecture 1.5 hours and Tutorial 1.5 hours weekly in semester face-to-face mode. Learning Guide, Text, Library and Web based learning resources are utilised. The subject is also available for online study, with weekly group discussions (online tutorials) using discussion threads for electronic communication. Lectures are recorded and made available via the video-on-demand system. • Assessment: Individual and Group Assignments, Presentation and Examination

A subject in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The aim of this 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.

Reading Materials
Euenson, B 1994, Writing and Presenting Reports, John Wiley & Sons, Brisbane.

Websites
http://www.lib.murdoch.edu.au/libinfo/ges/rgdes/cite/cite.html
http://www.unisanet.unisa.edu.au/learningconnection/resprocess/resources.htm

LEB105 eCommerce Fundamentals

12.5 Credit Points • 12 Weeks or equivalent • 36 Hours or equivalent • Lilydale • Prerequisite: Nil • Teaching methods: Lecture 1.5 hours and Tutorial 1.5 hours weekly in semester face-to-face mode. Learning Guide, Text, Library and Web based learning resources are utilised. The subject is also available for online study, with weekly group discussions (online tutorials) using discussion threads for electronic communication. Lectures are recorded and made available via the video-on-demand system. • Assessment: Individual and Group Assignments, Presentation and Examination

A subject in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives
The aim of LEB105 eCommerce Fundamentals is to enable students to understand and design effective Internet eCommerce models built on a strong foundation of business concepts and wisdom, together with a knowledge of the eCommerce environment and the influence of the Internet on business stakeholders; customers, suppliers, manufacturers, service makers, regulators, managers and employees.

On completion of this subject students will:
- Have received a thorough grounding in electronic commerce on the Internet.
- Recognise the stakeholders in electronic commerce and their capabilities and limitations in the strategic convergence of technology and business.
- Understand the rapid changes taking place in electronic commerce.
- Be aware of the new technologies of importance to electronic commerce.
- Be aware of important research and development trends in the area.

Content
Students undertake eCommerce analysis and learn to describe eCommerce propositions, for all aspects of your business models. They will investigate models
that enable the enterprise (whether a single legal entity or cluster of alliance partners) to establish and sustain competitive advantage in the networked economy. Once students have a broad or generic understanding of the process of eCommerce they will be required to take a more detailed view of business design. Students evaluate eCommerce models and integrate the concept of virtual enterprises with business thinking.

Students study the strategic and operational frameworks of how to plan, organise, develop, manage and control electronic supply chains; recognise the importance of suitable marketing strategies, and a practical understanding of Internet eCommerce and its implementation.

**Reading Materials**


**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.

**Reading Materials**


Management Information Systems, IBM Books, USA.


**LEB107 Issues in eCommerce 1**

6.25 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 elective studies of importance in eCommerce, including entrepreneurship and innovation, business planning, payment systems and business to consumer eCommerce.

On completion of the subject students will be able to:

- Discuss issues arising from elective studies.
- Demonstrate an understanding of the nature of the key concepts involved.
- Contrast the nature of activities under eCommerce with more traditional ways of doing business.

**Content**

Varies with elective chosen.

**Reading Materials**


Manning RL 1998, Businessplan.com, The Oprah Press, USA.


Overtorn, P 1999, Business Planning, Martin Management, Australia.


**LEB108 Cultural Diversity and Ethics for eCommerce Professional Practice**

6.25 Credit Points • 5 Weeks or equivalent • 3 Hours per Week • Lilydale/Prahran

- Prerequisite: Nil • Teaching methods: Seminar Series and Discussions, Individual Learning Journal. Both TAFE and Higher Education staff will be involved. • Assessment: Contributions to Discussion, Chat Forums etc, Reflective J ournal, Research Project

A subject in the Bachelor of Business (eCommerce).
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.

Reading Materials

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 • Lilydale;Prahran
Prerequisite: LEB100 or equivalent • 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 provide students with an opportunity 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.
• Macroeconomic 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.
• Cost/Volume/profit relationship.
• Incremental costs.

LEB201 eMarketing and Customer Relationship Management
12.5 Credit Points • 12 Weeks or equivalent • Lilydale;Prahran
Prerequisite: LEB102 or equivalent • 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 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.
• Assess the impact of electronic service delivery on businesses and customers.
• Explain the role of information technology in CRM and electronic service delivery.
• Describe the data mining process.
• Explain data warehousing and develop a plan for building a CRM data warehouse and info-structure.
Explore customer confidence through data privacy.
Discuss the economic value of CRM.
Explain the role of eMarketing.
Apply the process and eMarketing analysis and strategy development.
Identify eMarketing resources and undertake marketing research.
Apply eMarketing tools.
Understand simple principles of web site design and structure for marketing.
Explain the importance of eMarketing fulfilment on short and long term performance.

Content
- The cost and lifetime ownership of customers.
- Customer segmentation and positioning.
- The CRM process and organisational structure.
- eCommerce business 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.

Reading Materials
Dorf, B et al. 1999, The One to One Fieldbook: The Complete Toolkit for Implementing a 1:1 Marketing Program.
Peppers, D & Rogers, M 1993, The One to One Future: Building Relationships One Customer at a Time.
Seybold, PB 1999, Customers.com: How to Create A Profitable Business Strategy for the Internet and Beyond, Prentice Hall, USA.

Websites
Good intro/overview articles:
http://www.crmproject.com/
Peppers and Rogers: http://www.1to1.com/
Good framework, whitepapers, etc: http://www.xchange.com/default.asp
Information on datamining: http://www.spss.com/ecrm/
Good framework, whitepapers, etc: http://www.xchange.com/default.asp
http://www.siebel.com/
peoplesoft/vantive:
Download good whitepaper that discusses customer value and segmentation.
http://www.crm-forum.com/
Supplier with good papers and articles: http://www.pointinfo.com/dynamicSite
Useful survey of UK companies:
http://www.microsoft.com/europe/industry/crm/strategicpresentations/2211.htm
Useful downloads: http://www.brooksco.com/ecrm.htm

Students will be encouraged to research other online resources.

LEB202 eMarketing Management

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 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.
- M anaging 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.
- M anagement of information.
- Database development, integration and access.
- Gathering online information.
- M aximising the potential of information and knowledge.
- Security, control and ethical challenges using eCommerce information technologies.

Reading Materials
Baskin, C & Adam, S 1999, Managing on the Internet, Prentice Hall, Australia.
Dyche, J. 2000, e-Data: Turning Data into Information with Data Warehousing, Addison Wesley Longman.
Kalakota, R & Robinson, M 1999, E-Business: Roadmap for Success, Addison Wesley, USA.

Websites
For further information and a variety of other learning activities:
http://www.whatist.com
http://ecommerce.internet.com
http://www.wise.com
Online professional magazines, such as MIS and CIO, contain useful information about IT issues. Newspapers are another source of information.

**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.

**Reading Materials**


**Websites**

http://www.macromedia.com/
http://www.microsoft.com/
http://4frontpage.anything.com/
http://www.adobe.com/

**Animation**

http://hotwired.lycos.com/webmonkey/multimedia/animation/

Softseek: Shareware, freeware and evaluation software: http://enternet.softseek.com/
The clipart collection: http://applications.tamu.edu/clipart/
For ideas on developing your own graphics: http://hotwired.lycos.com/webmonkey/design/graphics/

**LEB204  eBusiness Management 3**

12.5 Credit Points  • 12 Weeks or equivalent  • 3 Hours per Week  • Lilydale/Prahran
- Prerequisite: LEB102 and VSR216  • 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 participants to develop an understanding of the various eCommerce models and the risk profiles for these models. Participants will also be introduced to the requirements of effective eCommerce strategy development and implementation. The second aim of this subject is to enable students to gain the necessary knowledge and to develop the skills required to manage resources and complete projects, including eCommerce projects, within the specified parameter of operations management.

On completion of this subject students will be able to:
- Describe and analyse eCommerce business models.
- Analyse the requirements and risks of business processing, re-engineering and transformation of the organisation to meet the needs of eCommerce.
- Develop strategies for eCommerce.
- Assess the scope of change required for the successful implementation of eCommerce initiatives, and how associated risks are managed.
- Assess the scope of change required for successful implementation of eCommerce initiatives.
- Describe the nature and functions of project management.
- Use project management techniques to document and monitor the progress of a project.
- Estimate and establish resources required for a project.
- Evaluate the outcome of a project.

**Content**

- eCommerce business models.
- Business process reengineering.
- Technology, organisational structure and risk analysis.
- Outsourcing, competitive advantage, competitive intensity.
- Value chain analysis.
- Decision support systems, information systems and data warehousing.
- Project management.
- Stages in project management.
- Project planning software.
- Decision, planning and control methods.
- Total quality control systems.
- Performance evaluation and review techniques.

**Reading Materials**

Amor, D 2000, The e-Business (Revolution, Prentice Hall, USA.
Greer, M 2000, Manager’s Pocket Guide to Project Management, Human Resources Development Press, USA.
Locke, K & Gordon, J 1991, Critical Path Analysis & Other Network Techniques, 5th edn, Pittman, UK.
Strauss, J & Frost, R 1999, Marketing on the Internet, Prentice Hall, USA.

**LEB205  Issues in eCommerce 2**

12.5 Credit Points  • 12 Weeks or equivalent  • 3 Hours per Week  • Lilydale/Prahran
- Prerequisite: LEB106  • 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, Tests, Contributions to Discussion, Chat Forums etc., Internet Research Projects 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.

**Reading Materials**


**Websites**

- Australian Legal Information Institute: http://www.austlii.edu.au
- Australian Copyright Council: http://www.copyright.org.au
- International Computer Security Association: http://www.isaca.org

**The OECD**: http://www.oecd.org

**RSA Data Security**: http://www.rsa.com

**Cookie Central**: http://www.cookiecentral.com

**Internet Industry Association**: http://www.iiia.net.au

**Electronic Frontiers Australia**: http://www.efa.org.au

**Privacy International**: http://www.privacyinternational.org

**Electronic Privacy Information Centre (EPIC)**: http://www.epic.org

**Computer Emergency Response Team (CERT)**: http://www.cert.org

**Statutes**

Electronic Transactions Act 1999 (Cth)

Electronic Transactions Acts of respective States and Territories

Privacy Amendment (Private Sector) Bill 2000 (Cth)

Copyright Amendment (Digital Agenda) Bill 1999 (Cth)

**LEB206 eCommerce Project**

12.5 Credit Points - 12 Weeks or equivalent - Lilydale/Prahran

- Prerequisite: Completion of first-year subjects and at least two second-year subjects - Teaching methods: Discussions, Reading and a Variety of Other Learning Activities, Case Studies and Presentations. Use will be made of Electronic Communication and Subject Websites. Computer Facilities and Internet Access will be used. - Assessment: Contribution to Group Activities and Discussion. Project Assessment as negotiated in an Individual or Team-Learning Contract.

**Aims & Objectives**

This subject provides students with an opportunity to complete a project either relating to managing multimedia projects or to design and build an eCommerce solution. The balance between design, management and building within any project will be negotiated with the staff involved, taking into account the time and software available.

On completion of the subject students will be able to:

- Manage all phases of a simple multimedia or eCommerce solution project.
- Research the necessary information to be informed by the work of others and to provide a sound conceptual basis for the selected project.
- Write up and present the project or proposal and detailed management plan.
- Explain the ‘proof of concept’ phase of a project design.

**Content**

- Reference search: literature and Web-based.
- Project selection, scopeing and specification.
- Project management planning.
- Design and building.
- Project implementation.

**Reading Materials**

To be searched and reviewed by the student group. The relevant references will vary depending on the selected project, but earlier subject references list may provide a useful starting point.

**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 Journals. Both TAFE and Higher Education staff will be involved.

- Assessment: Case Studies, Contributions to Discussion, Chat Forums etc.

**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.

**Reading Materials**

Students will be directed to relevant web sites and journal articles and encouraged to independently search for other books and online resources.

**LEB210 Business Models of eCommerce**

12.5 Credit Points - 12 Weeks or equivalent - 36 Hours - Lilydale/Prahran

- Prerequisite: LEB105 eCommerce Fundamentals - Teaching methods: Lecture 1.5 hours and Tutorial 1.5 hours weekly in semester face-to-face mode. Learning Guide, Text, Library and Web based learning resources are utilised. The subject is also available for online study, with weekly group discussions (online tutorials) using discussion threads for electronic communication. - Assessment: Individual Assignments, Examination

A subject in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.
Aims & Objectives

The aim of this subject is to investigate the way in which business enterprise organises itself to respond to the challenges of the modern competitive environment. It will examine the way in which traditional business models have had to adapt to take advantage of eCommerce opportunities, as well as emerging models that uniquely exploit those opportunities. It will look at the changing role of intermediaries and the growth of strategic partnerships and alliances. Beyond eCommerce models the models of eFinance and eGovernment should be explored.

On completion of the subject students will be able to:

- Explain the concept of a business model and describe the many forms utilised in the context of eCommerce.
- Understand how each of the commonly used models enables the enterprise to generate profitable outcomes using Internet commerce.
- Outline the challenges of the modern competitive environment and the many ways business enterprise can take advantage of the eCommerce opportunities.
- Demonstrate your ability to analyse each of the models at a variety of levels, gradually increasing the depth of your understanding.
- Describe the changing role of intermediaries and the nature and importance of the growth of strategic partnership and alliance.
- Extend your knowledge into the models of eFinance and eGovernment, in order to generalise and contextualise your learning.

Content

- Electronic markets and competitive advantage
- The concept of a business model
- Business models for eCommerce
- Analysis of business models
- Intermediaries changing role
- Alliances and partnerships
- Business models for eFinance and eGovernment

Reading Materials


LEB211 Deriving Business Value

12.5 Credit Points • 12 Weeks • Prerequisite: LEB105

Aims & Objectives

This subject is focused on the digitisation of the value chain and value networks. It aligns the strategies, models and infrastructure of eCommerce. It will look at implementation in a broad sense and consider interrelated strategies focussed on customer relationships, resource planning, order management, supply chains and the evaluation of investments needed to bring them to reality. This will include the application of technology to Economic Resource Planning systems, Supply Chain, eProcurement, Selling Chain and Customer Relationship Management, as well as Collaborative and Knowledge Management Approaches.

On completion of this subject you will be able to:

- Explain how organisations have adapted to operate in the digital economy
- Describe the nature and purpose of a range of business systems.
- Understand the relationships between strategy, models and infrastructure.
- Outline the process of deriving business value in relation to a range of the business systems.
- Take a management view of information technology in relation to value chain and value networks.
LEB213 Managing People in the Networked Economy

12.5 Credit Points • 12 Weeks • Lilydale • Prerequisite: LEB105 eCommerce Fundamentals • Teaching methods: Lecture 1.5 hours and Tutorial 1.5 hours weekly in semester face-to-face mode. Learning Guide, Text, Library and Web based learning resources are utilised. The subject is also available for online study, with weekly group discussions (online tutorials) using discussion threads for electronic communication. • Assessment: Individual and Group Assignments, including Presentations and Business Reports

A subject in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives

The challenge for the modern manager is the networked economy. This subject will consider the issues of managerial responsibility in the climate of technological change with work-teams’ members sometimes separated in time and space. Consideration will be given to ethics, electronic communication, effective business presentations and report writing. It will investigate the role of the leader and holistic manager in enterprises operating in the networked economy.

On completion of this subject you will be able to:
- Describe your attributes in relation to the concept of a holistic manager.
- Explain the importance of work-teams for business success in the networked economy.
- Outline the nature and significance of ethics in relation to the manager’s role.
- Investigate electronic communication practices and develop a range of practical skills that will be useful for yourself in the role of manager.
- Distinguish between self management and managing others.
- Ask questions seeking to understand what people know and do not know, to obtain feedback and directionally thinking.
- Demonstrate your ability to prepare a business report suitable for a specified purpose.
- Make effective business presentations for a specific business audience and purpose, including motivation and persuasion.

Content

- You and the concept of the holistic manager
- Managing people through work-teams and projects
- Ethical issues for the business manager
- Report writing and effective use of word-processing software eg. Word
- Effective business presentations and use of slide creation software eg PowerPoint

Reading Materials


LEB214 eEnterprise Strategy and Project Management

12.5 Credit Points • 12 Weeks or equivalent • 36 Hours or equivalent • Lilydale • Prerequisite: LEB105 eCommerce Fundamentals • Teaching methods: Lecture 1.5 hours and Tutorial 1.5 hours weekly in semester face-to-face mode. Learning Guide, Text, Library and Web based learning resources are utilised. The subject is also available for online study, with weekly group discussions (online tutorials) using discussion threads for electronic communication. • Assessment: Individual and Group Assignments, Presentation and Examination

A subject in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives

This subject aims to develop knowledge and skills in strategy formulation and planning. It will include understanding the context in terms of opportunities and threats, undertaking focused business research on the competitive environment, generating strategic options and related decision making, strategic planning including the business proposal and plan. A range of different strategic planning tools will be applied. Throughout this subject aims to develop your system thinking skills and application of the related tools, together with practical project management skill development.

On completion of this subject you will be able to:
- Distinguish between strategic planning and budgeting;
- Apply systems thinking in the context of web enterprise and strategy formulation;
- Develop project management plans in the context of web enterprise;
- Use project management software for simple and more complex web enterprise projects.

Content

- Strategic planning approaches for web enterprise
- Strategic planning tools and double loop learning
- Multivariate thinking and thinking styles for strategy formulation
- Project management

Reading Materials

Phillips, J, 2002, IT Project Management: On Track from Start to Finish, McGraw-Hill/Osborne, California, USA.

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, time, commitments and style of learning. • Assessment: To be advised but may include short individual issue insight and reflection papers, research paper: a critical appraisal of eCommerce models, syndicate application of critical analysis to a global business.

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.

Reading Materials


Swinburne University of Technology | Undergraduate Course Handbook 2005
In addition students will be directed to relevant websites and encouraged to research other online resources.

LEB301 Information Methods and Technical Communication

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. • Assessment: Examinations, Individual Laboratory-based Tests, Syndicate Electronic Portfolio of Business Documents, Syndicate Communication Research Project and Presentation

A subject in the Bachelor of Business ( eCommerce).

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.

Reading Materials

Stamper, DA 1999, Business Data Communications, Addison Wesley, USA.

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.

Reading Materials


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.

Reading Materials
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.
Tiernan, B 2000, E-tailing, Dearborn Kaplan, Chicago.
Wyszcki, RK & DeChell, RL 1997, Managing Information Across the Enterprise, John Wiley, Brisbane.

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 • Lilydale/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.

Reading Materials
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.
LEB306  eCommerce Product Development and Management

12.5 Credit Points  12 Weeks or equivalent  3 Hours per Week  Lilydale,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 stockmarket 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 are 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.

Reading Materials

Peppers, D & Rogers, M 1999, The One to One Manager, Doubleday, USA.
Peppers, D & Rogers, M 1997, Enterprise One to One, Doubleday, USA.
Petersen GS 1999, Customer Relationship Management Systems: ROI and Results Measurement, Strategic Sales Performance, USA.

In addition students will be directed to relevant websites and encouraged to research other online resources.
LEB310  Designing eCommerce and eFS Systems

12.5 Credit Points • 12 Weeks or equivalent • 36 Hours or equivalent • Lilydale • Prerequisite: LEB105, LEB210, LEB211 • Teaching methods: Lecture 1.5 hours and Tutorial 1.5 hours weekly in semester face-to-face mode. Learning Guide, Text, Library and Web based learning resources are utilised. The subject is also available for online study; with weekly group discussions (online tutorials) using discussion threads for electronic communication. • Assessment: Individual and Group Assignments, Presentation and Examination

A subject in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives

For users to adopt Business-to-Consumer (B2C) e-commerce, it is imperative that the benefits of using this new commercial medium significantly outweigh potential risks and inconveniences. Indeed, difficulty of use and lack of trust with respect to online payment, privacy and consumer service have been found to constitute a real psychological barrier to e-commerce. (Fiorian N. Egger, Towards a Model of Trust for E-Commerce System Design)

Students are encouraged to look beyond the obvious design issues to consider a holistic enterprise enculturation and development strategy. A particular emphasis will be upon the eFS (electronic financial services) development strategies given the vast array of opportunities in the Banking and Finance sector.

Content

On completion of this subject you will:
• Have developed a new mindset that involves a shift from a technology-driven to an enterprise-driven rationale.
• Be able to provide a systems-wide development view of mapping an enterprise and managing change/ transformation.
• Be able to analyse the driving forces for entrepreneurial success in multi-unit international business.
• Be able to work in teams to capture and elaborate an eCommerce and/or eFS idea, develop a strategic plan and begin to develop a case to convince other parties to support the development venture.

LEB311  Developing eCommerce and eFS Systems

12.5 Credit Points • 12 Weeks or equivalent • 36 Hours or equivalent • Lilydale • Prerequisite: LEB105, LEB210, LEB211, LEB310 • Teaching methods: Lecture 1.5 hours and Tutorial 1.5 hours weekly in semester face-to-face mode. Learning Guide, Text, Library and Web based learning resources are utilised. The subject is also available for online study, with weekly group discussions (online tutorials) using discussion threads for electronic communication. • Assessment: Individual and Group Assignments, Presentation and Examination

A subject in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives

This subject bridges the gap between ICT and application of eCommerce theories when developing eCommerce or eFS (electronic financial services) solutions. The subject extends earlier studies in modelling and design, and strategic transformation and entrepreneurial eCommerce to the next stage. It goes beyond the theory to implementation in the broadest sense, by engaging the student as the decision maker offering advice for designing interrelated strategies focused on customer relationships, resource planning, order management, supply chains, and on evaluating investments needed to make them a reality. The approach taken in this subject is for participants to build an eCommerce or eFS solution to the stage where it is ready to go to the Board for decision purposes.

Building an integrated solution highlights strategic transformation in the context of the significant changes in the competitive environment and within the enterprise. It illustrates how each directly impacts on the information and communications technology and how these can affect the enterprise change mechanisms. An important skill to be learnt by students in this process is to pose the right questions.

New economic and competitive forces create new eCommerce environments in which, to be successful, an enterprise must undergo a thorough transformation, considering these factors:
• Interrelationships of new stresses, market forces, changing economic bases and demographic globalisation.
• Focus on eCommerce and eFS activities to develop more appropriate enterprise models, redesign business processes and supply chain relationships.
• Growing influence of information and related technologies as enabler of enterprise transformation.
LEB312 Business Transformation

12.5 Credit Points • 12 Weeks or equivalent • 36 Hours or equivalent • Lildyale
Prerequisite: LEB105 • Teaching methods: Lecture 1.5 hours and Tutorial 1.5 hours weekly in semester face-to-face mode. Learning Guide, Text, Library and Web based learning resources are utilised. The subject is also available for online study, with weekly group discussions (online tutorials) using discussion threads for electronic communication. • Assessment: Individual and Group Assignments, Presentation and Examination

A subject in the Bachelor of Business (eCommerce) program which may also be undertaken in any other degree program at Swinburne Lilydale.

Aims & Objectives

This subject explores the nature and process of strategic transformation of business and industry in an environment of change. It begins with the focus of transformation of marketing in terms of how it is done using digital technologies, which occurred in response to the changes the Internet generated in consumer power and behaviour. These kinds of changes at the functional level of business have lead to changes the transformation of industries such as music, photography, newspaper, travel and financial services. These industry level changes pose challenges for enterprises within those and other industries. The subject will investigate the issues of governance, regulation, implementation and change together with their human aspects.

On completion of this subject you will be able to:
- Explain the nature and process of strategic transformation.
- Describe how while principles of marketing remaining unchanged and the tools and methods used in how it is done have changed with the application of digital technologies.
- Understand the need for enterprise transformation at the business unit level and the industry level, and cite cases illustrating these phenomenon.
- Outline some examples of how specific industries have been reconfigured, drawing attention to the challenges and opportunities that have emerged.
- Analyse some relevant issues of governance, regulation, implementation and change management.

Content

- Digital marketing strategy and implementation as a responsive transformation in business practice
- Industry reconfiguration as a transformational consequence of the application of digital technologies
- Business transformation
- Managing change
- Future change

Reading Materials

LHO400 Honours Research Methods

25 Credit Points • 12 Weeks or equivalent • 7 Hours per Week • Lildyale
Prerequisite: Nil • Teaching methods: Combination of Workshops, Seminars, Presentations • Assessment: Class Presentations, Essays, Examinations

A subject in the Bachelor of Applied Science (Hons), Bachelor of Business (Hons) and Bachelor of Social Science (Hons).

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.

Content

- Performance measurement - inputs, costs, revenue, profit, outputs, outcomes, social benefits.
- Cost structure, analysis and management - products, services, customer groups.
- Price, volume and market relationships and performance.
- Balanced scorecard for performance measurement.
- Sustainability as a business imperative - economic, social and environmental.
- Triple bottom line performance measurement for web enterprise.

Reading Materials
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 developmental).
- 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.

Reading Materials
Cooper, D & Schnidler, P 1998, Business Research Methods, 6th edn, McGraw Hill, USA.
Neuman, W 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.

Reading Materials
Cooper, D & Schnidler, 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 of 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.

Reading Materials
To be determined by the academic supervisor and the student, depending on the topic chosen for the research project/thesis.

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

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.

Reading Materials

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.

Reading Materials

To be determined by the academic supervisor and the student, depending on the topic chosen for the research project/thesis.

LIN100 Aboriginal Australia: Victorian people, places and experiences

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: Nil • Teaching methods: Guest Lectures, Discussion, Workshops and Tutorials run in 2-Week Blocks • Assessment: Journal entries, Essays, Debates, Workshops

A Stage 1 subject which may be undertaken as an elective in any degree program at Swinburne Lilydale.

Aims & Objectives

Indigenous issues in Australia continue to be at the centre of public discussions concerning our national identity, history, and political, legal, health and education systems. This subject seeks to initiate the education of students in Indigenous issues so that they may contribute to these discussions from a position that is better informed.

The subject aims to provide students with an understanding of Australia’s Indigenous peoples and the issues that define their experiences as Australian citizens. Further, it also seeks to encourage students to examine their role as Australian citizens in our contemporary multicultural and multinational society, and to actively encourage students to develop and practice broader thinking in issues of inter-cultural relationships.

Content

The subject will examine six main topic areas, looking at both historical and contemporary issues:

• New Arrivals: issues surrounding invasion/settlement.
• Race and Identity: identifying race differences in society.
• Government Policy.
• Spirituality: arts, crafts and traditions; relationships with the land; importance of land, and protocols related to it.
• Education: its importance to Indigenous Australia.
• Future developments: examining contemporary political developments and their relevance to our country’s future.

Recommended Reading

Barwick, D 1998, Rebellion at Coranderrk, Aboriginal History Inc., Canberra.
Reynolds, H 1998, This Whispering In Our Hearts, Allen & Unwin, St Leonards.

LIX200 International Study Experience

12.5 Credit Points • Equivalent to 39 contact hours • Lilydale • Prerequisite: Acceptance into the Division’s Exchange Program or the Study Abroad Program • Teaching methods: The main method will be individual reading and reflection, but this will be supplemented by seminar discussions (prior to departure and after return), discussion threads, use of the Internet and other resources (including video, DVD and CD Rom as appropriate). The focus is on expectations and reflection on the experience at all stages. The subject will be conducted over a period longer than a normal semester, with three phases. Pre-departure – seminar sessions, individual reading, discussion and journal writing. On exchange – self paced activities, but supplemented by journal entries, emails and participation in discussion threads. Post-exchange – debriefing sessions,
participation in seminars and workshops and presentation to staff and other students. • Assessment: Pre-departure preparation 20%, On exchange journal development 30%, Post exchange report and presentation 50%.

A Stage 2 subject which may be undertaken as an elective in any degree program at Swinburne Lilydale.

Aims & Objectives
The main objective of this subject is to maximise the benefits to each participating student and to the Division from the exchange experience. More specifically, the objectives are to:

• Assist students to prepare for their exchange;
• Encourage students to reflect on the ways in which their exchange experience enhances their personal and professional growth;
• Increase cultural and inter-cultural awareness and understanding;
• Create an awareness of the issues/problems that students are likely to encounter and equip them with techniques to handle them;
• Generate enthusiasm about international opportunities;
• Develop a greater awareness of the meaning of citizenship at the local, national and international level;
• Expand the student's citizenship horizons.

Content
• Pre-departure preparation for the exchange experience.
• During Exchange - students' record of and ongoing reflection on their experience.
• On Return - comparison of expectations and reality and self-evaluation of the experience.

Reading Materials
Learning Guide
Recommended Reading

No single text book, but a range of references including Books / Journals / Internet resources / Videos

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

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
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.

Textbook
G21: Global Cultural Dreaming

Recommended Reading
LSM 100 Texts and Contexts website with hypertext links to recommended online readings. http://www.id.swin.edu.au/subjects/lsm100/welcome.htm These links are updated on a regular basis to ensure that students have access to the most current thinking and information.

LSM200 eCulture

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale • Prerequisite: LSM 100 • Teaching methods: Weekly Lecture, Virtual Tutorials • Assessment: Discussion Threads, Essay, Critical Evaluation of Discussion Threads

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
LSM 200 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 LSA 100 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
LSM 200 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.

Textbook
G21: Global Cultural Dreaming

Recommended Reading
LSM 200 eCulture website with hypertext links to recommended online readings. http://www.id.swin.edu.au/subjects/lsm200/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: LSM 200 • 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
LSM 201 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.
LSM201 New 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.

Textbook
G21: Global Cultural Dreaming

Recommended Reading
LSM201 W riting for the Media website with hypertext links to recommended online readings http://www.ld.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.


Content
LSM 301 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.

Textbook
G21: Global Cultural Dreaming

Recommended Reading
LSM 301 Electronic Writing website with hypertext links to recommended online readings http://www.ld.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.


RSM302 Information Society

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale
Prerequisite: LSM 100 (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
LSM 302 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
LSM 302 Information Society draws together theory and practice to consider the following topics and issues:
- 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.

Textbook
G21: Global Cultural Dreaming

Recommended Reading


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: LSM 100 • 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/off 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
LSM 304 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.

Textbook
G21: Global Cultural Dreaming

Recommended Reading
LSM 304 Cyberscreen Studies website with hypertext links to recommended online readings. http://www.ld.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.


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.
LSQ201  Survey Research Methods

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 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.

Reading Materials

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.

Reading Materials
Rice, PL & Ezzy, 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.

Reading Materials
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: LSQ300 and either LSQ201, or LSQ202 • 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.

Reading Materials

LS100  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.
- Differences, 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.
LSS200  Difference, Deviance and Conformity

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 course introduces students to sociological approaches dealing with social problems, deviance/crime and social control. It aims to enhance students’ understanding of the ways in which individuals and their actions are defined as socially unacceptable and the attempts to control and reform them.

The subject focuses on, and analyses in some detail, the three major forms of social control: the legal system, the medical system and the welfare system. In addition, the course explores the ways in which sociological insights can inform policy formulation and implementation in a number of ‘social problem’ areas, such as corporate crime, family violence, homelessness, anorexia and AIDS.

Content

• Definitions and Explanations of Deviance, Crime and Conformity.
• Analysis of Sociological Perspectives of Deviance and Crime.
• The Role of Institutional Social Control Mechanisms: the Medical, Legal and Welfare Systems.

Recommended Reading

Edwards, A 1988, Regulation and Repression, Allen and Unwin, NSW.
Rubington, E & Weinberg, M 1999, Deviance: The Interactionist Perspective, 7th edn, Allyn and Bacon, USA.
Clerid, M & Meier, R 1998, Sociology of Deviant Behaviour, 10th edn, Harcourt Brace, USA.

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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: LSS 100 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.

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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 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 provides explanations for the emergence, growth and persistence of vast and extensive, multi-divisional, corporately owned and bureaucratically managed global empires. 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.
• M odern and Postmodern Organisations.
• Gender and Organisational Power.

Recommended Reading

Hall, R 1999, Organisations: Structures, Processes and Outcomes, 7th edn, Prentice Hall, USA.
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 Methods.
- Research Design.
- Measurement.
- Principles of Sampling.
- Data Gathering Approaches.
- Data Analysis, Interpretation and Presentation.
- Research Ethics.
- Report Writing.

Recommended Reading

Blakie, N 2000, Designing Social Research: A Methodology of Research, Allen and Unwin, NSW.
Hancock, L 1999, Health Policy in the Market State, Allen and Unwin, NSW.
Hancock, L 1999, Health Policy in the Market State, Allen and Unwin, NSW.
Hancock, L 1999, Health Policy in the Market State, Allen and Unwin, NSW.
LSS302 Research Approaches

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale •
Prerequisite: LSS100 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 Methods.
- Research Design.
- Measurement.
- Principles of Sampling.
- Data Gathering Approaches.
- Data Analysis, Interpretation and Presentation.
- Research Ethics.
- Report Writing.

Recommended Reading

Blakie, N 2000, Designing Social Research: A Methodology of Research, Allen and Unwin, NSW.
Hancock, L 1999, Health Policy in the Market State, Allen and Unwin, NSW.
Hancock, L 1999, Health Policy in the Market State, Allen and Unwin, NSW.
Hancock, L 1999, Health Policy in the Market State, Allen and Unwin, NSW.

**LSY304 Abnormal Psychology**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale •
Prerequisite: LSQ200 and one of LSY200, or LSY201 • Teaching methods: Lectures, Tutorials, Drop-ins • Assessment: Examinations, Essays

**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.

**Reading Materials**


**LSY307 Social Psychology**

12.5 Credit Points • 12 Weeks or equivalent • 3 Hours per Week • Lilydale •
Prerequisite: LSQ200 and one of LSY200 or LSY201 • Teaching methods: Teaching Methods include Lectures, Project Work and Tutorials • Assessment: Examinations, Research Report

**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.

**Reading Materials**


**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)

**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.

Reading Materials

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 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.

Reading Materials

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 an appreciation of the importance of the HR Manager being involved with the development of strategies of the organisation.
- To have a knowledge of the theories, techniques and approaches to dealing with people related problems and issues.

Content
- The nature and importance of human resources in achieving organisational effectiveness.
- HR planning and staffing the organisation.
- Basic interviewing and negotiating skills.
- Training and developing employees.
- Analysing, evaluating and compensating work.
- Establishing and maintaining effective employee relations.

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. Students experience 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
A Stage 3 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale. (Also offered as LTE300B in block mode.)

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.
- Right-sizing 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

A Stage 3 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale. (Also offered as LTE301B in block mode.)

**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

A Stage 3 subject in the Bachelor of Business which may also be undertaken in any other degree program at Swinburne Lilydale. (Also offered as LTE302B in block mode.)

**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

A Stage 1 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 develop an 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.

**Content**
- History of Tourism: pilgrimage to national pastime.
- The Psychology of Tourism: personal motivations and needs.
- The Sociology of Tourism: understanding tourists.
- Macroeconomics and Tourism: organisational, management and marketing factors in the industry.
- Case Studies: enterprises involved with tourism.

**Recommended Reading**

**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**
LTT202  Tourism Enterprise Development

12.5 Credit Points  •  12 Weeks or equivalent  •  3 Hours per Week  •  Lilydale  •  Prerequisite: LTT110  •  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 understand 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.

Reading Materials
No prescribed text.
Extensive electronic reading reserve.

Textbook

Recommended Reading

LTT203  Tourism Services

12.5 Credit Points  •  12 Weeks or equivalent  •  3 Hours per Week  •  Lilydale  •  Prerequisite: LTT100, LBM 200, 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 understand 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.

Reading Materials
No prescribed text.
Extensive electronic reading reserve.

LTT204  Regional Issues in Tourism

12.5 Credit Points  •  12 Weeks  •  3 Hours per Week  •  Lilydale  •  Prerequisite: LTT100  •  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
- 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.
LTT302 Planning and Management in Ecotourism

Aims & Objectives
- To provide focus and direction to students in both their final year of studies and future career path.
- 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 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.

Recommended Reading

LZZ303 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.

Aims & Objectives
- To provide students with insights into and an understanding of contemporary workplace culture, issues and directions including global and technological development.
- To provide students with the opportunity to apply theoretical knowledge and skills gained during their studies in a practical/workplace environment.
- To provide an environment and experience in which students will enhance their personal and professional maturity.
- To provide students with insights into and an understanding of contemporary workplace culture, issues and directions including global and technological development.

Content
- Students will work in the industry placement to which they have been assigned.
- Students will work under supervision of their industry supervisor and with support from a university supervisor and other university staff as required.
- Students will complete the tasks required to receive accreditation for the subject.

Recommended Reading
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.

**Reading Materials**

As appropriate to the discipline.