UNIVERSITY OF
TECHNOLOGY SYDNEY

2001

UTS:INFORMATION TECHNOLOGY HANDBOOK

University of Technology, Sydney

UTS:INFORMATION

TECHNOLOGY
HANDBOOK 2001

EQUAL OPPORTUNITY

It is the policy of UTS to provide equal opportunity for all persons regardless of race, colour, descent, national or ethnic origin, ethno-religious background; sex; marital status, pregnancy; potential pregnancy; family responsibilities, disability, age; homosexuality; transgender status; political conviction; and religious belief.

FREE SPEECH

UTS supports the right to freedom of speech and the rights of its members to contribute to the diversity of views presented in our society.

NON-DISCRIMINATORY LANGUAGE

UTS has adopted the use of non-discriminatory language as a key strategy in providing equal opportunity for all staff and students. Guidelines for the use of non-discriminatory language have been developed and all members of the University community are encouraged to use them.

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GENERAL INFORMATION

WELCOME

Welcome to the University of Technology, Sydney (UTS), one of the largest universities in New South Wales – a university with an international reputation for quality programs and flexible learning. UTS develops and regularly revises its programs of study in partnership with industry, government and professional bodies, so that its degrees are based on the latest professional standards and current practices. As a result, UTS produces graduates who are ready for work, and this is demonstrated in the high numbers of its students who are members of the workforce within a few months of finishing their degree.

UTS offers its students a lively, supportive and diverse learning environment across three campuses, and a range of social, cultural and sporting facilities to enrich each student's experience. UTS regards learning as a lifelong experience, and offers a range of programs to cater for the educational needs of people at a variety of stages in their lives, and from diverse backgrounds and cultures.

UTS offers undergraduate and postgraduate degrees, developed by the Faculties of Business; Design, Architecture and Building; Education; Engineering; Humanities and Social Sciences; Information Technology; Law; Nursing, Midwifery and Health; and Science. Each of these faculties is responsible for programs across a number of key disciplines, and many offer courses in conjunction with one another, or with the Institute for International Studies. Courses developed and delivered by these faculties reflect the University's commitment to providing a relevant education to students through flexible and work-based modes of learning and through the ongoing internationalisation of the curriculum.

ABOUT THE UTS HANDBOOKS

Every year UTS produces 10 faculty/institute handbooks which provide the latest information on approved courses and subjects to be offered in the following year. These handbooks include comprehensive details about course content and structure, subject and elective choices, attendance patterns, credit-point requirements, and important faculty and student information. Many of them also contain faculty policies and guidelines for participation in specific courses. This provides students with the necessary information to meet the requirements of the course, complete a program of study, and receive a degree.

UTS also produces a companion volume to these handbooks every year. The *UTS Calendar 2001* contains the University Act, By-law and Rules, a list of courses offered across the University, and other useful University information. Copies of the faculty/institute handbooks and the *UTS Calendar 2001* are held in the University's libraries and faculty offices and can be purchased at the Co-op Bookshop.

Every effort is made to ensure that the information contained in the handbooks and the Calendar is correct at the time of printing. However, UTS is continuously updating and reviewing courses and services to ensure that they meet needs, current and emerging, and as a result information contained in these publications may be subject to change.

For the latest information, see the University's website at:

www.uts.edu.au

STUDENT INQUIRIES

UTS Student Info & Admin Centre

telephone (02) 9514 1222
email info.office@uts.edu.au

www.uts.edu.au

City campus

Level 4 foyer, Building 1 (Tower Building)
1 Broadway, Ultimo

Kuring-gai campus

Level 6, Building K1
Eton Road, Lindfield

Postal address

PO Box 123, Broadway NSW 2007

International Programs Office

10 Quay Street, Haymarket
telephone +61 2 9514 1531
fax +61 2 9514 1530
email intlprograms@uts.edu.au

Faculty student offices

Business

Undergraduate inquiries

Level 1, Building 5
Haymarket, City campus
telephone (02) 9514 3500

Level 5, Building K1
Kuring-gai campus
telephone (02) 9514 5355

email undergraduate.business@uts.edu.au

Postgraduate inquiries

Level 5, Building 5
Haymarket, City campus
telephone (02) 9514 3660
email graduate.business@uts.edu.au

Design, Architecture and Building

Level 5, Building 6 (Peter Johnston Building)
City campus
telephone (02) 9514 8913
email dab.info@uts.edu.au

Education

Room D101, Building 5
Haymarket, City campus
telephone (02) 9514 3900
email education@uts.edu.au

Room 333, Building K2
Kuring-gai campus
telephone (02) 9514 5621
email teached.office@uts.edu.au

Engineering

Level 7, Building 2
City campus
telephone (02) 9514 2666
email upo@eng.uts.edu.au

Humanities and Social Sciences

Faculty Student Centre

Level 2, Building 3 (Bon Marche Building)
City campus
telephone (02) 9514 2300
email fhss.student-centre@uts.edu.au

Faculty Research Office

Level 7, Building 2
City campus
telephone (02) 9514 1959
email research.degrees.hss@uts.edu.au

Information Technology

Level 3, Building 4
City campus
telephone (02) 9514 1803
email info@it.uts.edu.au

Law

Room B303, Building 5
Haymarket, City Campus
telephone (02) 9514 3444
email admingen@law.uts.edu.au

Nursing, Midwifery and Health

Room 397, Building K5
Kuring-gai campus
telephone (02) 9514 5202
email nmh@uts.edu.au

Science

Level 3, Building 4
City campus

Level 2, Dunbar Building
St Leonards campus

telephone (02) 9514 1756
email information@science.uts.edu.au

Institute for International Studies

10 Quay Street
Haymarket, City campus
telephone (02) 9514 1574
email iisinfo@uts.edu.au

APPLICATIONS

Undergraduate

The NSW and ACT Universities Admissions Centre (UAC) processes most applications for undergraduate courses which start at the beginning of the year. Students are required to lodge these UAC application forms between August and December; early closing dates may apply to some courses. To find out more about these courses and the application procedures, check the *UAC Guide*, or the UAC website at:

www.uac.edu.au

Students can also apply for entry to some UTS courses by lodging a UTS application form directly with the University. These are usually courses that are not available to recent school leavers and do not have a UAC code.

Postgraduate

Applications for postgraduate courses should be made directly to UTS. For courses starting at the beginning of the year, most applications open in August with a first round closing date of 31 October. For courses starting in the middle of the year, applications open in May.

For more information about applying to study at UTS, contact the UTS Student Info & Admin Centre.

International students

International students' applications for both postgraduate and undergraduate courses can be made either directly to the International Programs Office or through one of the University's registered agents. For courses starting at the beginning of the year, applications should be received by 30 November of the previous year. For courses starting in the middle of the year, applications should be received by 31 May of that year. For more information, contact the International Programs Office.

Non-award and cross-institutional study

Students who want to study a single subject at UTS which is not part of a UTS degree or qualification, must apply for non-award or cross-institutional study. There are four application periods, and closing dates vary for each semester. For more information contact the appropriate faculty or the UTS Student Info & Admin Centre.

FEES AND COSTS

Service fees

Service fees are charged to students to contribute to the cost of a range of facilities and services which are generally available to all students during the course of their study.

Variations and exemptions

Fees and charges may vary from year to year. In certain circumstances, some students may be eligible for reduced service fees.

For full details of variations and exemptions to the fees listed below, contact the UTS Student Info & Admin Centre.

Fee components[1]

Union Entrance Fee
a once-only charge for new students $22

Union Fee
a semester-based charge for
currently enrolled students $113 per semester

Students' Association Fee
a yearly charge for
currently enrolled students $54.40 per year

Student Accommodation Levy
a yearly charge for currently
enrolled students $58 per year

Student Identification Card Charge
a yearly charge for students
enrolled on a tuition fee basis $15 per year

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[1] Charges have been adjusted to reflect the University's liability for Goods and Services Tax (GST).

Course fees

No course fees are paid by local students undertaking undergraduate studies at UTS. Students are, however, liable for HECS charges (see following page). Many postgraduate courses attract a course fee. These course fees are calculated on a course by course basis and are charged in addition to the service fees outlined above. Payment of course fees may vary depending on a student's status, and on conditions laid down by the faculty. Please contact the relevant faculty for full details.

Details of course fees are outlined under each course entry in this handbook. Readers should note that fees quoted throughout the handbook are correct at the time of publication however they are subject to change and should be confirmed with the Student Info & Admin Centre.

Course fees for international students

At the time of publication, course fees for undergraduate international students range from A$5,000 to A$8,250 per semester, and for postgraduate international students from A$4,000 to A$8,250 per semester. These vary from time to time and the International Programs Office should be contacted for up-to-date information.

International students in Australia on a student visa are required to undertake full-time study as a condition of their visa.

For more information contact the International Programs Office.

Other costs

Students may incur other costs while they study at UTS. These may include books, printed sets of reading materials, photocopying, equipment hire, the purchase of computer software and hardware, and Internet services.

HECS

(Higher Education Contribution Scheme)

HECS is a financial contribution paid to the Commonwealth Government by tertiary students towards the cost of their education. It is payable each teaching period and the amount paid will vary according to the number of credit points undertaken and the method of payment nominated by the student.

Most students have three choices in the way they pay HECS:

1. paying all of the HECS up front and receiving a 25% discount

2. deferring all payment until a student's income reaches a certain level, or

3. paying at least $500 of the HECS contribution up front and deferring the remainder.

Note: These options may not apply to New Zealand citizens and Australian Permanent Residents.

Commonwealth legislation sets strict conditions for HECS over which the University has no control. HECS charges are based on the subjects in which students are enrolled on the HECS census date. It is important for students to realise that any reductions in their academic workload after the census date for a particular semester will not reduce their HECS liability.

Students who defer their HECS payments become liable to commence repayment once their taxable income reaches the repayment threshold. This does not necessarily mean at the conclusion of their studies – a student's income may reach this threshold before then.

New students, students returning from leave and students who are commencing a new or second course, must complete a Payment Options Declaration form. This form must be lodged with the University by the census date and should show a valid Tax File Number.

For Autumn semester, the HECS census date is 31 March, and for Spring semester, the HECS census date is 31 August. HECS census dates for other teaching periods can be obtained from the UTS Student Info & Admin Centre.

There are a number of variations to these guidelines. It is the responsibility of each student to find out which HECS conditions apply to them. Information can be obtained from the booklet *HECS Your Questions Answered,* which is available from the HECS office on 1800 020 108 (www.hecs.gov.au) or the UTS Student Info & Admin Centre.

FINANCIAL HELP

Austudy/Youth Allowance

Students aged under 25 years, may be eligible to receive financial assistance in the form of the Youth Allowance.

Full-time students aged over 25 years may be eligible to receive Austudy which provides financial help to students who meet its income and assets requirements. Application forms and information about eligibility for Austudy are available from the Student Services Unit at Kuring-gai or City campuses.

Commonwealth legislation sets strict requirements for Austudy/Youth Allowance over which the University has no control. It is important that the students concerned understand these requirements.

Students who receive Austudy and decide to drop subjects during the semester, must be aware that to remain eligible for Austudy they must be enrolled in a minimum of 18 credit points, or have a HECS liability for the semester of .375 equivalent full-time student units. The only exceptions made are for students with disabilities which interfere with their studies, students who are single supporting parents or, in some exceptional cases, those who have been directed by the University to reduce their study load.

For more information, talk to a financial assistance officer in the Student Services Unit.

telephone (02) 9514 1177 (City)
or (02) 9514 5342 (Kuring-gai)

Application forms for both schemes should be lodged as soon as possible with any Centrelink office, or at:

Centrelink Student Services
Parker Street, Haymarket
Locked Bag K710
Haymarket NSW 2000

Abstudy

Abstudy assists Aboriginal and Torres Strait Islander tertiary students by providing income support and other assistance. For more information about Abstudy, contact the staff at Jumbunna, Centre for Australian Indigenous Studies, Education and Research.

Level 17, Building 1 (Tower Building)
telephone (02) 9514 1902

UTS LIBRARY

The University Library collections are housed in three campus libraries which contain over 650,000 books, journals and audiovisual materials as well as a large range of electronic citation and full-text databases. Services for students include assistance in finding information through Inquiry and Research Help desks and online reference assistance, training programs, Closed Reserve, loans, reciprocal borrowing and photocopying facilities. The Library's extensive range of electronic information resources, such as catalogues, databases and Electronic Reserve, and online services, such as research assistance, online training, loan renewal, reservations and inter-Library requests, can be accessed on campus and remotely 24 hours a day from the Library website.

The Library is open for extended opening hours. More information about the Library can be found at:

www.lib.uts.edu.au

City Campus Library

Corner Quay Street and Ultimo Road
Haymarket
telephone (02) 9514 3388

Kuring-gai Campus Library

Eton Road, Lindfield
telephone (02) 9514 5313

Gore Hill Library (St Leonards campus)

Corner Pacific Highway and
Westbourne Street, Gore Hill
telephone (02) 9514 4088

UNIVERSITY GRADUATE SCHOOL

The University Graduate School is a pan-university organisation which enhances the quality of postgraduate research studies and supports research degree students, providing leadership in framing policy for postgraduate development in partnership with the faculties. It provides a contact point for postgraduate research degree students and supports them in their studies.

The University Graduate School is located in Building B2, Blackfriars, City campus.

telephone (02) 9514 1336
email ugs@uts.edu.au

www.gradschool.uts.edu.au

SUPPORT FOR STUDENT LEARNING

Student Services Unit

To ensure student success, the University provides a range of professional services to support different aspects of student life and learning at UTS.

These services include:

- orientation and University transition programs
- student housing and assistance in finding private rental accommodation
- workshops and individual counselling to enhance effective leaning
- assistance for students with disabilities and other special needs
- student loans and financial assistance
- health services
- personal counselling
- assistance with administrative problems or complaints
- assistance when extenuating circumstances impact on study
- help with getting a job
- campus interview program.

All these services are sensitive to the needs of students from diverse backgrounds and are available at City and Kuring-gai campuses with flexible hours for part-timers.

The Student Services Unit website offers a jobs database, 'where UTS graduates get jobs', virtual counselling and links to the 'student help' website:

www.uts.edu.au/div/ssu

Transition to university programs – Orientation 2001

UTS offers a free Study Success program of integrated lectures and activities before semester begins, to help new students manage the transition to university study. There are specially tailored programs for part-time and international students as well as for recent school leavers. Students are informed of academic expectations, the skills needed to be an independent learner, and learning strategies which can help them successfully manage the workload. They are also provided with valuable information about how the University and its faculties operate, and the services provided.

For more information, contact:

Student Services Unit
telephone (02) 9514 1177 (City)
or (02) 9514 5342 (Kuring-gai)

Careers Service

The Careers Service can help students make the link between various UTS courses and the careers they can lead to. The Careers Service also offers general career guidance, and assists with job placement for students seeking industry experience or permanent or casual employment. Contact the Careers Service on:

telephone (02) 9514 1471 (City campus)

www.uts.edu.au/div/cas

Counselling

Counsellors are available at both the City and Kuring-gai campuses for individual consultation. Group programs are also held throughout the year.

For further information, contact:

telephone (02) 9514 1471 (City campus)
or (02) 9514 5342 (Kuring-gai campus)

Telephone counselling is available on (02) 9514 1177.

Health

The Health Service offers a bulk billing practice to students at two locations. For appointments, contact:

telephone (02) 9514 1166 (City campus)
or (02) 9514 5342 (Kuring-gai campus)

Housing

University Housing provides assistance to students in locating private accommodation. A limited amount of UTS-owned housing is also available.

telephone (02) 9514 1509 (listings)
or (02) 9514 1199 (UTS accommodation)

Special Needs Service

The University has in place a range of services and procedures to improve access for students with disabilities, ongoing illnesses and other special needs. Students who have disabilities or illnesses which may impact on their studies are encouraged to contact the Special Needs Service for a confidential discussion of the assistance available.

telephone (02) 9514 1177
TTY (02) 9514 1164
email special.needs@uts.edu.au

Financial Assistance

Financial Assistance staff assist students with personal financial matters and are the contact point for student loans. They can also advise on Youth Allowance, Austudy and other Centrelink benefits.

telephone (02) 9514 1177

Locations for Student Services

telephone (02) 9514 1177
TTY (02) 9414 1164
fax (02) 9514 1172
email student.services@uts.edu.au

www.uts.edu.au/div/ssu

City campus

Level 6, Building 1 (Tower Building)
- Counselling Service
- Health Service
- Special Needs and Financial Assistance Service

Level 3, Building 1 (Tower Building)
- Careers Service

9 Broadway
- Housing Service

Kuring-gai campus

Level 5, Building K1

- Counselling Service
- Health Service

Computer laboratories

Computer laboratories are located throughout the University and are available for all students and staff to use. Details of locations and availability of the computer laboratories may be obtained from the Information Technology (ITD) Support Centre on:

telephone (02) 9514 2222

Student email accounts

UTS provides students with an email account, which gives all students access to email facilities via the web. To find out more about UTS Email, visit the website:

www.uts.edu.au/email/

Alternatively, pick up the brochure *Your UTS Email Account* available in all ITD General Purpose Laboratories and drop-in centres. If you have any problems activating your account or with the use of UTS Email, contact the IT Support Centre on:

telephone (02) 9514 2222

Computer training

In general, where computer training is necessary as part of a course that attracts HECS, it is provided as part of that course. Students can also consult the Computing Study Centre (see below).

STUDENT LEARNING CENTRES

Chemistry Learning Resources Centre

The Chemistry Learning Centre assists students in undergraduate courses in the faculties of Science; Nursing, Midwifery and Health; Engineering; and Business.

Room 211, Building 4
City campus
Rosemary Ward
telephone (02) 9514 1729
email rosemary.ward@uts.edu.au

www.science.uts.edu.au/depts/cmf/chem/clrc/index.html

Computing Study Centre

The Computing Study Centre assists students in developing skills in the use of various standard computer packages.

Level 16, Building 1 (Tower Building)
City campus

John Colville, Director
telephone (02) 9514 1854
email john.colville@uts.edu.au

English Language Study Skills Assistance (ELSSA) Centre

ELSSA Centre provides free English language and study skills courses for all UTS students completing their degree in English.

ELSSA Centre
Alex Barthel (Director)
Level 18, Building 1 (Tower Building)
City campus
telephone (02) 9514 2327

or

Room 522, Building K2
Kuring-gai campus
telephone (02) 9514 5160
email elssa.centre@uts.edu.au

www.uts.edu.au/div/elssa/

Jumbunna, Centre for Australian Indigenous Studies, Education and Research (CAISER)

Jumbunna CAISER is run by a predominantly Australian indigenous staff who provide specialist advice and a range of services to assist Aboriginal and Torres Strait Islander students.

Jumbunna CAISER
Level 17, Building 1 (Tower Building)
City campus
telephone (02) 9514 1902

www.indiginet.com.au/jumbunna

Mathematics Study Centre

The Centre coordinates mathematics assistance across the University and is staffed by lecturers with expertise in mathematics and statistics.

Level 16, Building 1 (Tower Building)
City campus
Leigh Wood (Director)
telephone (02) 9514 2268
email leigh.wood@uts.edu.au

Room 522, Building K2
Kuring-gai campus
telephone (02) 9514 5186

Physics Learning Centre

This is a drop-in centre for first-year physics students.

Level 11, Building 1 (Tower Building)
City campus
(with an adjoining computer laboratory)

Peter Logan
telephone (02) 9514 2194
email peter.logan@uts.edu.au

EQUITY AND DIVERSITY

UTS is committed to equal opportunity and the right of all staff and students to work, study and access services in a university environment which is safe, equitable, free from discrimination and harassment, and in which everybody is respected and treated fairly. The University also aims to assist members of under-represented groups overcome past or present discrimination, and to provide a supportive and open organisational culture in which all students and staff are able to develop to their full potential.

UTS has a strong commitment to ensure that the diverse nature of the Australian society is reflected in all aspects of its employment and education. It is the policy of UTS to provide equal opportunity for all persons regardless of race, colour, descent, national or ethnic origin, ethno-religious background; sex; marital status, pregnancy; potential pregnancy; family responsibilities, disability, age; homosexuality; transgender status; political conviction; and religious belief.

The Equity & Diversity Unit provides a range of services for students and prospective students. These include coordination of the inpUTS Educational Access Scheme for students who have experienced long-term educational disadvantage; coordination of financial scholarships and awards for commencing low-income students; and the provision of confidential advice and assistance with the resolution of discrimination and harassment related grievances.

Equity & Diversity Unit
Level 17, Building 1 (Tower Building)
telephone (02) 9514 1084
email equity.diversity.unit@uts.edu.au
www.equity.uts.edu.au

OTHER SERVICES

Student Ombud

Enrolled or registered students with a complaint against decisions of University staff, or related to the University, may seek assistance from the Student Ombud.

All matters are treated in the strictest confidence and in accord with proper processes.

Room 402, Building 2
City campus
telephone (02) 9514 2575
email ombuds@uts.edu.au
www.uts.edu.au/oth/ombuds

Freedom of Information

Under the *Freedom of Information Act 1989* (NSW), individuals may apply for access to information held by the University.

Personal information may also be accessed under the *Privacy and Personal Information Act 1998*. In addition to the requirements of the Act, UTS has a number of policies which govern the collection and use of private information.

David Clarke
FOI Officer
Level 4A, Building 1 (Tower Building)
City campus
telephone (02) 9514 1240
email david.clarke@uts.edu.au

Student complaints

UTS is committed to providing a learning and working environment in which complaints are responded to promptly and with minimum distress and maximum protection to all parties.

All students and staff have a responsibility to contribute to the achievement of a productive, safe and equitable study and work environment at UTS. The University's procedures for handling student complaints are based on confidentiality, impartiality, procedural fairness, protection from victimisation and prompt resolution.

Students should first raise their complaint directly with the person concerned where possible or appropriate, or with an appropriate person in the faculty or administrative unit concerned. To seek advice and assistance in lodging a complaint, contact the Student Services Unit or the Equity & Diversity Unit.

The Policy on Handling Student Complaints is published on the Rules, Policies and Procedures website at:

www.uts.edu.au/div/publications/policies/

CAMPUS LIFE

UTS Union

The UTS Union is the community centre for the University. It provides food and drink services, lounges and recreational areas, comprehensive social and cultural programs, sports facilities and programs, stationery shops, a newsagency and resource centres. Off campus the Union provides access to a ski lodge, rowing club, sailing club, athletics club and basketball stadium.

Union Office (City campus)
telephone (02) 9514 1444
email Debbie.Anderson@uts.union.uts.edu.au

City campus at Haymarket
telephone (02) 9514 3369

Kuring-gai campus
telephone (02) 9514 5011

Union Sports Centre

The centre contains multi-purpose spaces, squash courts, weights rooms, circuit training room and outdoor basketball court.

Lower ground floor, Building 4
City campus
telephone (02) 9514 2444

UTS Rowing Club

Dobroyd Parade, Haberfield
telephone (02) 9797 9523

Child care

UTS Child Care Inc. (UTSCC) coordinates all child care services at UTS. Child care is available from 8.00 a.m. to 10.00 p.m. at both City and Kuring-gai campuses.

Students and staff of UTS receive priority access and a small rebate on fees. Normal Government assistance is available to low- and middle-income families.

telephone (02) 9514 1456 (City)
or (02) 9514 2960 (Blackfriars)
or (02) 9514 5105 (Kuring-gai)

Co-op Bookshop

The Co-op Bookshop stocks the books on students' reading lists, and a variety of general titles and computer software. It has branches at the City and Kuring-gai campuses, and, at the start of semester, at Haymarket and Gore Hill (St Leonards campus).

City campus
telephone (02) 9212 3078
email uts@mail.coop-bookshop.com.au

Kuring-gai campus
telephone (02) 9514 5318
email kuringai@mail.coop-bookshop.com.au

www.coop-bookshop.com.au

Students' Association

The Students' Association (SA) is the elected representative body of students at UTS: it is an organisation run by students for students. UTS students have the right to stand for election of the SA and to vote in the annual elections. The SA also employs caseworkers to provide advocacy for students on academic and non-academic matters.

City campus office
Level 3, Building 1 (Tower Building)
telephone (02) 9514 1155

Kuring-gai campus office
Level 4, Building 2
telephone (02) 9514 5237

Radio Station 2SER-FM (107.3 FM)

2SER-FM is a community radio station run by hundreds of volunteers who are involved in producing and presenting a smorgasbord of programs focusing on education, information, public affairs and specialist music. Students interested in community media, are welcome to visit the 2SER studios or to attend a volunteer recruitment meeting. Contact the station for more details.

Level 26, Building 1 (Tower Building)
City campus
telephone (02) 9514 9514

UTS Gallery and Art Collection

The UTS Gallery is a dedicated public gallery on the City campus. The UTS Gallery presents regularly changing exhibitions of art and design from local, interstate and international sources.

The UTS Art Collection comprises a diverse range of paintings, prints, photographs and sculptures which are displayed throughout the University and, at times, in the UTS Gallery.

Level 4, Building 6 (Peter Johnson Building)
City campus
702 Harris Street
telephone (02) 9514 1284
fax (02) 9514 1228
email uts.gallery@uts.edu.au

www.utsgallery.uts.edu.au

PRINCIPAL DATES FOR 2001

January

1	New Year's Day – public holiday
2	Summer session classes recommence (to 2 February)
4	UTS Advisory Day
5	Closing date for change of preference to the Universities Admissions Centre (UAC), by mail or in person
6	Closing date (midnight) for change of preference to UAC, via UAC Infoline and website (www.uac.edu.au)
8	Formal supplementary examinations for 2000 Spring semester students
12	Last day to submit appeal against exclusion from Spring 2000
19	Final examination timetable for Summer session available
19	Main round of offers to UAC applicants
22–27	Enrolment of new main round UAC undergraduate students at City campus
24	Closing date for change of preference to UAC for final round offers
26	Australia Day – public holiday
29	Public School holidays end

February

2	Final round of offers to UAC applicants
2	Summer session ends for subjects with formal exams
2	Last day to lodge a Stage 2 appeal against assessment grade for Spring semester 2000
5–16	Formal examinations for Summer session
5–23	Enrolment of new students at City campus
9	Third round closing date for postgraduate applications for Autumn semester 2001 (except Faculty of Business – closing date 16 February)
16	Faculty of Business third round closing date for postgraduate applications for Autumn semester 2001
26	Orientation week for new students commences (to 2 March)
26	Release of results for Summer session
28	Union 'O' Day – Clubs and activities day
28	Late enrolment day

March

5	Autumn semester classes commence
7	Late enrolment day
9	Last day to lodge a Stage 2 appeal against assessment grade for Summer session
16	Last day to enrol in a course or add subjects[1]
16	Last day to pay upfront HECS or postgraduate course fees for Autumn semester 2001
19	Applications open for Vice-Chancellor's Postgraduate Research Student Conference Fund (for conferences July – December)
30 ·	Last day to apply to graduate in Spring ceremonies 2001
31	Last day to withdraw from a course or subject without financial penalty[1]
31	HECS census date

April

12	Last day to withdraw from a course or subject without academic penalty[1]
12–30	Public School holidays
13	Good Friday – public holiday
16	Easter Monday – public holiday
16–20	Vice-Chancellors' Week (non-teaching)
18–20	Graduation ceremonies (Kuring-gai campus)
25	Anzac Day – public holiday

May

1	Applications open for undergraduate courses, where applicable, and postgraduate courses for Spring semester 2001
7–18	Graduation ceremonies (City campus)
11	Provisional examination timetable available
22	Closing date for applications for Vice-Chancellor's Postgraduate Research Student Conference Fund (for conferences July – December)
31	Closing date for undergraduate and first round postgraduate applications for Spring semester 2001
31	Closing date for applications for Postgraduate Equity Scholarships for Spring semester 2001

June

1	Final examination timetable available
11	Queen's Birthday – public holiday
15	Last teaching day of Autumn semester
16	Formal examinations commence (to 6 July)
29	Second round closing date for postgraduate applications for Spring semester 2001

July

2–6	Vice-Chancellors' Week (non-teaching)
6–23	Public School holidays
16–20	Formal alternative examination period for Autumn semester students
18–26	Enrolment of new students for Spring semester
25	Release of Autumn semester examination results
26	Formal supplementary examinations for Autumn semester students
30	Spring semester classes commence

August

1	Applications available for undergraduate and postgraduate courses for Autumn semester 2002
1	Applications available for Postgraduate Research Scholarships
3	Last day to withdraw from full-year subjects without academic penalty
3	Last day to lodge a Stage 2 appeal against assessment grade for Autumn semester 2001
10	Last day to enrol in a course or add subjects[1]
17	Last day to pay upfront HECS or postgraduate course fees for Spring semester 2001
30	Last day to apply to graduate in Autumn ceremonies 2002
31	Last day to withdraw from a course or subject without financial penalty[1]
31	HECS census date

September

7	Last day to withdraw from a course or subject without academic penalty[1]
7	Applications open for Vice-Chancellor's Postgraduate Research Student Conference Fund (for conferences January – June 2002)
24–28	Vice-Chancellors' Week (non-teaching)
24–28	Graduation ceremonies (City campus)
28	Applications open for UTS Academic Internships
28	Closing date for undergraduate applications via UAC (without late fee)
28	Closing date for inpUTS Educational Access Scheme via UAC
28	Public School holidays commence

October

1	Labour Day – public holiday
5	Provisional examination timetable available
15	Public School holidays end
26	Final examination timetable available
31	Closing date for undergraduate applications via UAC (with late fee)
31	First round closing date for postgraduate applications for Autumn semester 2002
31	Closing date for Australian Postgraduate Awards, the R L Werner and University Doctoral Scholarships
31	Closing date for applications for Postgraduate Equity Scholarships for Summer session

November

9	Last teaching day of Spring semester
10–30	Formal examination period
20	Closing date for applications for Vice-Chancellor's Postgraduate Research Student Conference Fund (for conferences January – June 2002)
30	Closing date for applications for UTS Academic Internships
30	Closing date for undergraduate applications direct to UTS (without late fee)

December

3   Summer session commences
(to 1 February 2002)

7   Closing date for undergraduate
applications via UAC (with late fee)

10–14 Formal alternative examination period
for Spring semester students

14   Last day for students enrolled in
Summer session to apply to graduate in
Autumn ceremonies 2002

19   Release of Spring semester examination
results

20   Public School holidays commence
(to 28 January 2002)

25   Christmas Day – public holiday

26   Boxing Day – public holiday

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[1] HECS/Postgraduate course fees will apply after the HECS census dates (31 March and August or last working day before). Contact the relevant Faculty Office for further information about enrolment and withdrawal deadlines for flexible delivery subjects.

Note: Information is correct as at 9 August 2000. The University reserves the right to vary any information described in Principal Dates for 2001 without notice.

FACULTY INFORMATION

MESSAGE FROM THE DEAN

I am pleased to extend this welcome to you on behalf of all the staff of the Faculty of Information Technology at UTS.

The Faculty was previously known as the Faculty of Mathematical and Computing Sciences, consisting of a School of Computing Sciences and a School of Mathematical Sciences. In 2000, the Schools were dis-established and replaced by a number of Departments, and the name of the Faculty was changed. The new name reflects the strong growth and popularity of computing and IT at UTS. We are renowned as the premier provider of university level IT education in the Sydney region. The new name also reflects the growing strategic importance of IT education to the future of UTS. However while there have been organisational changes, there have been no consequential changes to courses offered by the Faculty.

The Faculty has an enviable array of programs at the Bachelor's level. The BSc (Computing Science), with its industry linked Diploma of Information Technology Professional Practice, continues to produce graduates who are keenly sought by industry. The Diploma enables students to develop life-long learning skills so they gain a better understanding of the relationship between theory and practice. The Bachelor of Mathematics and Finance provides the business community with graduates who take a highly analytical and rigorous approach to the problems of modern international finance. The Bachelor of Information Technology is now in its thirteenth year. Students in this program receive generous stipends from companies who are eager in return to hire graduates of the very highest quality. Graduates of the BSc (Mathematics) are well equipped to approach business problems that require the application of the various branches of mathematics. The Bachelor of Mathematics and Computing is a more theoretically oriented computing course.

The Faculty has a commitment to lifelong learning for experienced professionals. The Faculty offers a stable of postgraduate coursework and short courses that are intended to satisfy various career development needs. The

Professor Michael Fry
Dean

MSc in Computing offers an opportunity for professional update in a variety of streams. The IT Management Program provides a unique opportunity for management education to those with substantial experience in the IT industry.

The graduate program in Internetworking aims to retrain practising IT people to support the explosive growth in Internet and Intranet technologies. This program has attracted large numbers of students who use a state-of-the-art Internetworking Laboratory. This program incorporates the Cisco Certified Network Associate (CCNA) program from Cisco Systems. Thus graduates are able to obtain an industry certification as well as a university award. From 2000, elements of the CCNA program are also being included in undergraduate programs.

The Faculty has an international outlook and aims to become a faculty of high international standing. Significant numbers of high-quality international students have enrolled in our various programs.

The Faculty continues to develop its impressive research profile, with significant successes in attracting research funding. In

2000, a Key University Research Strength in Distributed Computing was established in the Faculty in recognition of the Faculty's achievements in this area. The Faculty is also a leading participant in the CRC for Distributed Systems Technology.

There are many other activities and opportunities available within UTS that enrich the experience of university life. I commend these activities to you. Support services, provided by experienced and sympathetic staff, can help students through the difficult times that often arise. I hope that your time at UTS is both enjoyable and productive. I am confident that it will assist you in achieving both professional and personal success.

FACULTY MISSION STATEMENT

The mission of the Faculty is to provide high-quality, innovative programs of teaching and learning, research and consulting, and short courses to clients of wide backgrounds, both nationally and internationally, in the disciplines of mathematical and computing sciences. It is committed to technology transfer for the benefit of society by interacting closely with industry, business and government in research and development.

To support its mission, the Faculty aims to:

Teaching and learning
- maintain a comprehensive range of educational programs to satisfy the spectrum of needs in the community
- excel in both the quality of the learning environment and the professional relevance of its educational programs
- develop an international perspective to its teaching programs

Research and scholarship
- excel in the quality of its research activities
- encourage and facilitate participation by all staff in research or scholarly activities while focusing its research activities onto its defined areas of strength and a small number of targeted areas for development
- increase the participation rate of students in postgraduate programs
- promote intra-faculty, inter-faculty, national and international research collaboration

- emphasise to staff and students the benefits of an international perspective on their disciplines

Management and resources
- assure the quality of activities within the Faculty through the ongoing monitoring and the continuous development of a range of quality control processes
- maintain a balanced portfolio of expertise within its staff, which reflects perceived trends within the industries and disciplines addressed by the Faculty
- seek supplementary sources of external funding through research, joint ventures and entrepreneurial activities
- ensure the principles of equity are observed in all aspects of the Faculty's work, with particular emphasis on the areas of importance identified in the UTS Equity Plan
- develop links with prestigious overseas universities and research institutions

Community service
- preserve strong, effective links with industry, government, business, professional and community organisations
- improve credit transfer arrangements to facilitate the movement of properly prepared students who wish to transfer between universities, or who move into the university sector with prior education and knowledge.

INFORMATION FOR INFORMATION TECHNOLOGY STUDENTS

The Faculty of Information Technology has recently restructured and now operates with four departments – Computer Systems, Information Systems, Mathematical Sciences and Software Engineering. Together these disciplines form the basis of 'enabling technologies' for applications in most other disciplines. Student administration functions are all centralised at faculty level. Teaching is carried out at the City campus, Broadway.

A range of professional degrees are offered, from undergraduate through to Doctoral studies. The Faculty maintains a strong commitment to cooperative education, of both the work experience 'sandwich' form and the

cooperative scholarship format. The Faculty continues to be active in research and has strong links with industry in all aspects of its work.

All Faculty staff are located at the City campus, Broadway:

- staff from the Departments of Computer Systems, Information Systems and Software Engineering are located in Building 4
- staff from the Department of Mathematical Sciences are located on levels 15 and 16 of the Tower Building (Building 1).

Academic Advisers

Undergraduate Programs in Computing and Information Technology
John Colville
Dr Sean He
Chris S Johnson
Dr Gabbi Keller
Dr Paul Kennedy

Undergraduate Programs in Mathematics
Layna Groen
Dr Tim Langtry
Dr Geoff Smith
Peter Wright

Postgraduate Programs in Computing and Information Technology
Peter Bebbington
Dr Simeon Simoff
Dr Jerry Vochteloo
Dr Didar Zowghi

Postgraduate Programs in Mathematics
Associate Professor Graeme Cohen

Please refer to Faculty contact details (pages 21–5) for Program Directors and staff contact details.

Centres within the Faculty

Established in 1994, the **Centre for Object Technology Applications and Research (COTAR)** provides a focal point for the software industry using, or considering using, the new software development techniques of object technology. COTAR aims to promote and conduct research in object-oriented software engineering, object-oriented information systems and object-oriented computing. It provides not only a focus for such research and collaborative work with industry, but also high-quality professional development education. Further information can be obtained from Professor Brian Henderson-Sellers on (02) 9514 1687.

The mission of the **CRC for Enterprise Distributed Systems Technology (DSTC)** is to build the distributed information systems of the future through leading-edge research, and to work with industry and government to apply and commercialise the results. The UTS participation in DSTC draws on expertise from the Department of Computing Sciences. The primary focus of the UTS research is on Quality of Service (QoS) and the delivery of multi-media information in real time within various distributed systems frameworks, such as the World Wide Web, Java and CORBA. For further information contact Professor Michael Fry on (02) 9514 1801.

Faculty Office contacts

Faculty Office staff are located on the third floor of Building 4, as indicated in the table beginning on page 21. There is an Information Office at this location to assist students and the general public on course-related matters.

When telephoning from outside the University, all extension numbers should be prefixed by (02) 9514.

Email addresses should be suffixed with '@it.uts.edu.au'.

SHORT COURSES

The Faculty offers a variety of short courses throughout the year in the areas of Computing and IT, and Mathematical Sciences.

The Faculty offers courses in: Object-Oriented Programming with C++; Using UNIX; Programming with C, Prototyping with Visual Basic; Programming in the Internet; Electronic Commerce on the Internet; IT Management courses; Introductory Statistics; Design and Analysis of Experiments; Regression Analysis; Quality Control; and Introductory Operations Research.

Computing and IT courses can also be customised for corporate clients.

Information on all short courses is available from the Faculty Information Office on (02) 9514 2154 or via the World Wide Web at:

http://it.uts.edu.au/courses/short

Faculty contact details

Name	Telephone	Location	Email[1]	Responsibility
Dean				
Professor Michael Fry	1801	4/343	mike	
Executive Assistant to the Dean				
Vacant	1800	4/342		
Associate Dean (Education)				
Associate Professor David Wilson	1832	4/367	davidw	
Associate Dean (Research, Policy and Planning)				
Professor Lindsay Botten	2247	1528	lindsay	
Assistant Dean				
Associate Professor Gordon McLelland	2259	1520	gordon	
Faculty Business Manager				
Gerard Goodwin-Moore	1880	4/341	gerard	
Faculty Operations Manager				
Leanne McCoy	1867	4/340a	leanne	All courses
Technical Services Manager				
Peter Gale	1868	4/435	gale	
Department of Computer Systems				
Head of Department				
Associate Professor Tom Hintz	1865	548	hintz	
Senior Lecturers				
John Colville	1854	524	colville	
Dr Bruce Howarth	1859	530	bruce	
Chris W Johnson	1855	522	chris	Program Leader for the Bachelor of Science in Computing Science/Bachelor of Computing
Elaine Lawrence	1861	533	elaine	
Dr Toni Robertson	1966	535	toni	Program Leader for the Information Technology Management Program
Ury Szewcow	1862	534	ury	Program Leader for the Master of Science in Internetworking
Lecturers				
Dr Wayne Brookes	1872	541	brookes	
Dr Xiangjian He	1816	537	sean	
Dr Mao Lin Huang	1858	520	maolin	
Jon Pike	1856	523	jon	
John Tu	1856	523	vohao	
Dr Jerry Vochteloo	1882	532	jerry	

[1]   Email addresses should be suffixed with '@it.uts.edu.au'.

Faculty contact details

Name	Telephone	Location	Email	Responsibility
Department of Information Systems				
Head of Department				
Jim Underwood	1831	356	jim	
Professor				
Professor Igor Hawryszkiewycz	1809	372	igorh	
Lecturers				
Peter Bebbington	1828	353	peterb	Program Leader for the Gradaute Certificate and Diploma in Information Technology
Dr Jeff Clark	1827	355	clark	
Jamal El-Den	1830	536	jamal	
Chris S Johnson	1834	360	chrisj	Program Leader for the Bachelor of Information Technology
Kyeong-Soon Kang	1912	354	kyeong	
Christopher Lueg	tba	tba	tba	
Dr Simeon Simoff	1838	4/366	simeon	
Bernard Wong	1825	357	bernard	
Department of Mathematical Sciences				
Head of Department				
Associate Professor Deborah Street	2251	1540	deborah	
Professors				
Professor Alex Novikov	2242	1541	prob	
Professor Eckhard Platen	2271	1527	eckhard	
Associate Professor				
Associate Professor Graeme Cohen	2262	1520	glc	Program Leader for Postgraduate Programs in Mathematical Sciences
Senior Lecturers				
Dr Tim Langtry	2261	1537	tim	Program Leader for the Bachelor of Mathematics and Computing
Dr Beverley Moore	2258	1550	beverley	
Dr Peter Petocz	2264	1531	peterp	Program Leader for Mathematics (Honours)
Dr Geoff Smith	2236	1532	gsmith	Program Leader for the Bachelor of Science in Mathematics
Leigh Wood	2268	1536	leigh	Director, Mathematics Study Centre
Dr Yakov Zinder	2279	1523	yakov	
Lecturers				
Mary Coupland	2241	1535	mary	InpUTS Coordinator and Academic Liaison Officer
Layna Groen	2266	1533	layna	Program Leader for the Bachelor of Mathematics and Finance
Jeff Hogg	2238	1524	jeff	
Ed Lidums	2235	1530	edlidums	
Narelle Smith	2239	1539	narelle	
Ron Sorli	2281	1548	rons	
Peter Wright	2243	1546	peterw	

Faculty contact details

Name	Telephone	Location	Email	Responsibility
Department of Software Engineering				
Head of Department				
Richard Raban	1829	540	richard	
Professors				
Professor John Debenham	1837	437	debenham	
Professor Brian Henderson-Sellers	1687	370	brian	
Professor John Hughes	1344	436	hughes	
Associate Professors				
Associate Professor Jenny Edwards	1844	tba	jenny	
Associate Professor Barry Jay	1814	5114	cbj	
Senior Lecturers				
Dr George Feuerlicht	1835	363	jiri	
Dr Robert Rist	1849	516	rist	
Dr Kevin Suffern	1845	512	kevin	
Dr Didar Zowghi	1860	365	didar	Program Leader for the Master of Computing Science and Master of Computing (Honours)
Lecturers				
Dr Gabi Keller	1874	517	keller	
Dr Paul Kennedy	1875	514	paulk	
Dr Brian Lederer	2263	543	brianl	
Faculty Administration				
Executive Assistant to the Dean				
Vacant	1800	4/342		
Promotions Officer				
Jenny Donovan	1263	4/340b	jennyd	
Administrative Assistant				
Deborah Coustley	1310	4/335	deb	
Student Administration				
Professional Programs Manager				
Alison Waugh	1925	4/339	alison	Information Technology Management Program
Senior Student Liaison Officer				
Ivy Chu	1802	4/337	ivy	All BSc (Comp Sc), Grad Cert in IT and Grad Dip in IT
Industry Liaison Officer				
Des Saunders	1804	4/336	des	BInfTech and Industrial Training
Graduate and Research Liaison Officer				
Dianne Pratt	1806	4/338b	dianne	All Research and Masters Degrees, Internetworking and Interactive Multimedia programs

Faculty contact details

Name	Telephone	Location	Email	Responsibility
Student Liaison Officer				
Vacant	2250	4/338a		All BSc (Maths), BMathFin and related Honours programs
Administrative Assistant				
Julie Lui	1886	4/335	juliel	
Liaison Officers				
Lyn Chamas	2154	4/335	lynette	General inquiries
William Kusuma	1866	4/335	william	General inquiries
Edna Pathmanathan	1308	4/335	edna	General inquiries
Administrative staff				
Dr Kim O'Toole	1808	4/374	kimo	
Maria J Roman	2249	1/1520	mjroman	
Marie Woessner	1258	4/361a	marie	
Technical Services				
Systems Manager				
Stephen Gowing	1685	4/447	sbg	
Network and Development Manager				
Graham Redwood	1815	4/236	graeme	
Systems Programmers				
Benjamin Kuit	1841	4/447	bj	
Gordon Lingard	2253	1/1618b	glingard	
Information Systems Developer				
Michael Lynch	1956	4/447	spike	
Senior Technical Services Officer				
Barry Power	1819	4/240	barry	
Technical Officer				
Malik Sharafutdinov	1867	4/240	malik	
Technical Services Officers				
Alex Altman	1817	4/240c	alex	
Daniel Kensey	2254	1/1618	dkensey	
Technical Assistant				
Matthew Power	1820	4/240	matt	
Industrial Training Students				
Tom Nott	1868	4/444	nott	
Chris Tharmarajah	1839	4/447	ct	

Faculty contact details

Name	Telephone	Location	Email	Responsibility
Research Staff				
Senior Research Fellow				
Atanu Ghosh	2353	G32	atanu	
Postdoctoral Research Fellow				
Dr Charles Hempel	1846	4/547	hempel	
Research Assistant				
Helen Lu	1846	4/547	helenlu	
Research Scientists				
Glen MacLarty	2039	G32	marty	
Arash Rassoulpour	1281	G32	arash	
CRC for Enterprise Distributed Systems Technology (DSTC)				
Director, Sydney Operations				
Dr Kim Dinh	2044	G29	kdinh	
Systems Administrator				
Varuni Witana	2525	G32b	varuni	
Researcher				
Dr Tim Mansfield	2689	G31	timbomb@dstc.edu.au	

COMPUTING FACILITIES

The Faculty provides a number of network connected laboratories used in both teaching and research. The network, together with a number of UNIX servers, provides the application software required and a number of network services (www, ftp, email, news), which can be used to access resources and information throughout the University and the world. The address of the Faculty's website is:

http://it.uts.edu.au

Many of the courses offered by the Faculty involve a substantial amount of computational work, with intensive use being made of specialised software designed for applications in mathematics, statistics and operations research. Students have access to the full range of the Faculty's computing resources via a number of laboratories interconnected by a high-speed network. Extensive use is also made of the University's central computing facilities (ITD), which are accessible both from the Faculty's laboratories and from laboratories operated by ITD. The Faculty is actively involved in two major regional computing consortiums. The NSW Centre for Parallel Computing operates a high performance parallel computer, located at the Australian Technology Park. The Vislab Consortium provides scientific visualisation research facilities via the University of Sydney and the Australian Technology Park, and local nodes located at each of the partner institutions, including UTS.

General purpose laboratories

UNIX laboratories

A combination of X-terminals and UNIX workstations provides students with access to the UNIX environment. They are used by many of the Faculty's subjects.

PC Laboratories

A number of PC laboratories provide access the the PC/ Windows NT environment. They are used by programming and business applications subjects.

Access

General access to these laboratories is 9.00 a.m. – 9.00 p.m., Monday to Friday, during semester. On some occasions, these laboratories are booked for different subjects and, during these booked times, students not enrolled in those subjects should vacate that laboratory. Time-table bookings will be located on the door of each laboratory, and are available on the Faculty's website. After the first week of each semester's examination period, and also during vacation periods, the laboratories are available only between 9.00 a.m. and 6.00 p.m. 24-hour, seven-day-per-week access is provided to a PC/NT and a Linux laboratory on level 16, Building 1. Access to these labs after hours is via an individual PIN which must be keyed into the lock for it to open. Such PINs are only given to students enrolled in Faculty courses and Faculty staff.

Specific purpose laboratories

Graphics Laboratory

A number of Silicon Graphics UNIX computers provide for graphics subjects and general graphics usage.

Collaborative Systems

A research laboratory involved in applying computer and communications technology to improving work practices.

Distributed Systems Technology Centre and Multimedia Laboratory

A laboratory used for research into distributed systems, in particular, software protocols, network management, and interaction between multimedia and networks.

Usability Laboratory

A studio set up for the testing, evaluation and analysis of interaction between computers and human operators.

Access

Access to these specific purpose laboratories will be arranged by the academic involved in a particular subject or research project.

Remote access facility

The remote access facility provides modem access for students and staff through either terminal emulation or remote network connection using PPP. This allows users to access some of the Faculty's computing systems and perform work from home.

Help desk facility

The Faculty operates two help desks – one in the Interface Room, room 447, Building 4, and one in room 1618 in Building 1. These provide users with information on the usage of equipment, software and facilities, help with problems and a point of contact for reporting faults. The telephone numbers are: room 447, (02) 9514 1869; room 1618, (02) 9514 2254.

Information Technology Division (ITD) facilities

ITD is a University division that provides general computing facilities for all students at UTS. It provides a University-wide network interconnection, a number of large UNIX servers and laboratories throughout the different campuses. The University provides access to Internet resources through its connection to AARNet.

Laboratories

ITD provides UNIX, PC and Macintosh laboratories throughout the University which are available for use by all students. Access to ITD's UNIX servers is available from all laboratories provided by ITD and the Faculty of Information Technology. Buildings 2 and 5 laboratories provide 24-hour, seven-day-per-week access. Access to Building 4 UNIX and PC laboratories is from 9.00 a.m. to 9.00 p.m., Monday to Friday only.

Resource Centre facility

ITD's Resource Centre and help desk – located on level 9, Building 1 – provide assistance to the users of the academic computing facilities. During semester, the Resource Centre is open from 9.00 a.m. to 10.00 p.m., Monday to Friday. On weekends, and during semester breaks, it is open from 9.00 a.m. to 5.00 p.m. The help desk telephone number is (02) 9515 2222.

STUDY CENTRES

Computing Study Centre

The Computing Study Centre offers self-managed computer-based training in a range of introductory computer skills which includes:

- Microsoft Windows
- word processing (Microsoft Word)
- drawing
- electronic mail (Email)
- spreadsheets (Microsoft Excel)
- UNIX (an operating system which runs a wide range of computers)
- data handling.

The Computing Study Centre has designed a number of modules so that you can teach yourself. This means that you choose when, for how long and how, you learn the skills required for each module. You also mark your own assessment tasks and decide when to move onto the next module.

As people learn computer skills at differing rates depending upon their previous experience, confidence and motivation, being able to work at your own pace through these materials in the relaxed and supportive environment of the Centre is a successful way to learn.

The Computing Study Centre is located in room 1/1611 on level 16 of the Tower Building (Building 1), City campus. The Centre is open Monday to Friday during semester from 12 noon to 5.00 p.m. and on Tuesdays and Thursdays until 7.00 p.m., to cater for part-time students.

Contact details

For further information students should contact John Colville on:

telephone (02) 9514 1854
email john.colville@uts.edu.au

http://it.uts.edu.au/activities/csc

Mathematics Study Centre

The Mathematics Study Centre provides a support service to all students at the University studying in various introductory mathematical or quantitative areas, including statistics. The Centre coordinates all mathematical support services across the University, and is available on both the City and Kuring-gai campuses. Most of the teaching in the Centre occurs at an individual level and the Centre is open for at least 30 hours a week, with certain times devoted to particular areas of mathematics. The Centre is located in room 1/1615 on level 16 of the Tower Building (Building 1), City campus and at the Kuring-gai campus in room K2-522.

Contact details

For further information students should contact the Director of the Mathematics Study Centre, Leigh Wood on:

telephone (02) 9514 2268
email leigh@it.uts.edu.au

http://it.uts.edu.au/activities/msc

Drop-in service

The Centre is open Monday to Friday during semester, including tutorial and study weeks. It is open two nights a week and on Saturdays, by appointment, to cater for part-time students. Students can drop in to the Centre to obtain help with problems specific to a particular course, or they may choose to study in the Centre on a regular basis, obtaining assistance from a lecturer as needed. A timetable listing availability of lecturers and

their particular areas of expertise is available from both branches of the Centre and its website.

Tutorial support

The Mathematics Study Centre offers support tutorials for students who have difficulty with their mathematics and statistics studies at first-year level. Where a need exists, students enrol in one of the subjects listed below. This can be arranged separately for students in any faculty; the subjects have previously been run for students in Mathematical Sciences; Business; Engineering; Information Studies; Nursing, Midwifery and Health; and Teacher Education.

94434, 94435, 94436
Mathematics Tutorial 1, 2, 3

These subjects consist of approximately one hour tuition per week during semester time. These subjects are free of HECS charges and carry no credit-point value.

94437, 94438, 94439
Mathematics Study 1, 2, 3

These subjects consist of approximately two hours tuition per week during semester time. These subjects are free of HECS charges and carry no credit-point value.

Workshops

The Centre runs Saturday workshops during semester and in the final examination period for many first-year mathematics and statistics subjects. They are timed to assist students in their preparation for quizzes and the final examination, and are popular with students from all faculties.

94431, 94432, 94433, 94440, 94441, 94442
Mathematics Workshop 1, 2, 3, 4, 5, 6

These subjects consist of approximately six hours of instruction, usually on a Saturday. These subjects are free of HECS charges and carry no credit-point value.

Individual assistance

It is possible for students to arrange individual assistance with mathematics if recommended by a Counsellor from Student Services. This is particularly appropriate if a student has a record of failure in mathematics subjects or suffers from low self-confidence. It is also appropriate for students with disabilities. If required, arrangements may be made for a student to have an individual tutorial each week.

Bridging subjects

The Mathematics Study Centre provides bridging subjects for students who need mathematics skills for their degree studies at UTS. If faculties have particular needs, Centre staff can design a bridging subject specifically to meet these needs.

94450
Introduction to Statistics

This is a 12-hour subject, usually run over four evenings in February. It is designed for students about to enter introductory statistics or research methods subjects. This subject is free of HECS charges and carries no credit-point value.

94470
Introduction to Computers for Beginners

This is a 12-hour subject, usually run day and evening in February. It is designed for students who are not familiar with computers and aims to develop confidence, an understanding of terminology and some basic skills. This subject is free of HECS charges and carries no credit-point value.

94480
Bridging Mathematics

This is a 24-hour subject, run day and evening over two weeks in February and usually in July. It provides prerequisite mathematical skills at 2/3-unit HSC level and is aimed at mature-age students, students who have studied mathematics overseas and students who have not studied a high enough level of mathematics at school for their needs. This subject is free of HECS charges and carries no credit-point value.

94490
Mathematics Preparation for Nursing

This is a 12-hour subject, run day and evening in February. It gives a general introduction to mathematics and science for students entering Nursing. This subject is free of HECS charges and carries no credit-point value.

Foundation courses

The Centre runs several fee-paying courses each year to prepare students for university studies the following year. Students completing these courses have had success in gaining entry to university and in completing their degree studies.

Foundation Mathematics begins in August and runs for one semester on two nights per week. The course covers the content of the HSC 2-

unit mathematics course and prepares students for entry into courses that require some mathematical skills, such as Engineering, Science and Business.

Preparation for Nursing is a course aimed at giving potential Nursing students the prerequisite knowledge in mathematics and science for their degree studies. This course runs in October and November each year.

Mathematica

The University operates a site licence for the computer algebra system *Mathematica*. This software permits the integration of symbolic, graphical and numerical computation with a modern programming environment. It is ideally suited to teaching and research in any mathematically-based area of interest.

The system is used in many of the subjects offered by the Department of Mathematical Sciences. Students' exposure to *Mathematica* begins in the first semester of the BSc, BMathComp and BMathFin degree programs and knowledge of the system expands as the course develops. By the time of graduation, all students will have acquired considerable expertise in the use of this software.

PRIZES AND SCHOLARSHIPS

CSC Australia Prize for Communications

Since 1971, Computer Sciences Corporation Australia Pty Ltd has made available an award in the interests of furthering education and knowledge in the field of telecommunications. The prize is awarded to the student enrolled in the Bachelor of Science in Computing Science who achieves the best combined performance in the subjects 31436 Systems Software and Networks, and 31919 Distributed Software Programming. The prize is a cash award of $750.

Foundation for Australian Resources Prizes

The Foundation for Australian Resources is an independent non-profit organisation whose nominated beneficiary is the Faculty of Information Technology. The Foundation has made available three prizes to students enrolled in courses run by the Department of Mathematical Sciences. One prize, valued at $250, is for the best graduating student from the Bachelor of Science (Honours) in Mathematics degree. The other two, valued at $100 each, are awarded to the outstanding first-year full-time student enrolled in either the Bachelor of Science in Mathematics or the Bachelor of Mathematics and Finance program, and to the outstanding part-time student enrolled in Stage 1 of either of these programs.

Gilbert & Tobin Essay Prizes for Strategic IT Contract Management

These prizes were established in 1998, and are awarded to two students who are enrolled in the Informational Technology Management Program (Information Technology) who, in the year for which the awards are made, have written the *Best* research essay and the *Highly Commended* research essay respectively in the subject, 32704 Strategic IT Contract Management. The prizes are cash awards of $1,000 and $500 respectively.

Insearch Doctoral Award

As a result of the generous support of Insearch, the Faculty of Information Technology is able to offer a full-time PhD scholarship for study in any area of computing science. The scholarship has a cash value of $18,000 per year, tax free, and maybe supplemented by a limited amount of teaching and/or research assistant activity within the Faculty.

Insearch Prize for General Proficiency in the Faculty of Information Technology

This prize, established in 1999, is awarded to the graduating student each year who, having entered the Department after completing the Diploma in Information Technology at the Insearch Institute of Commerce, has gained the highest weighted average mark of such students over all subjects studied in either the Bachelor of Science in Computing Science or in the Bachelor of Computing. The prize is a cash award of $500.

Insearch Prize

The prize was established in 1998. It is awarded to the most outstanding international student graduating in the Bachelor of Computing or Bachelor of Science in Computing Science. The prize is a cash award of $450.

Macquarie Bank Scholarship

The Macquarie Bank has provided a scholarship to the student obtaining the highest weighted average mark in the standard full-time program of the first year of the Bachelor of Mathematics and Finance degree, provided that mark exceeds 75. Each scholarship has a value of $7,500 and is disbursed as three sums of $2,500, one for each year of the course.

Mastech Asia Pacific Pty Ltd Tuition Scholarship

This tuition scholarship, established in 1995 by Asia Pacific Computer Consultants, now Mastech Asia Pacific Pty Ltd, may be awarded annually to an able, needy, first-year, full-time student who is currently enrolled in the Bachelor of Science in Computing Science degree, and for whom this is the first year of tertiary study. The total value of the scholarship is $10,000.

Oracle Database Prize

Established in 1994, the Oracle Database prize is awarded to the Bachelor of Science in Computing Science student who achieves the highest aggregate mark in the subjects 31443 Distributed Databases and Client/Server Computing, and 31434 Database Design. The prize is a cash award of $400.

Sam Huxham Memorial Prize

This prize was established in 1994 in memory of Samuel Hugh Huxham, who joined the NSW Institute of Technology in 1971 and was Head of the Statistics and Operations Research Unit at the time of his death in May 1994. It is awarded each year for the best performance in the Statistics major by a student completing the Bachelor of Science in Mathematics degree in the preceding year. The prize has a cash value of $250.

SITA/Equant Prize for Academic Excellence

Established in 1996 by SITA, this prize is awarded annually to the student enrolled in the Bachelor of Science in Computing Science who achieves the best overall performance in the final year of the degree and who has completed the course within the minimum time. The prize is a cash award of $1,000.

Skillsearch Software Development Case Study Prize

This prize was established in 1999 by Skillsearch Computing Pty Ltd. It is awarded annually to the members of a group of students in the Bachelor of Science in Computing Science who achieve the highest mark in the project in the subject 31455 Software Development Case Study. The prize has a shared case value of $2,000.

Software Quality Association (NSW) Prize for Software Quality Assurance

This prize was established in 1997 by the Software Quality Association (NSW). It is awarded annually to the Bachelor of Science in Computing Science or the Bachelor of Information Technology student who achieves the highest mark in the subject 31931 Software Quality Assurance. The prize has a cash value of $400.

Solution 6 Information Technology Planning and Design Prize

Established in 1985 by Computer Automated Business Systems Pty Ltd, now a part of Solution 6, this prize is awarded annually to the group of final-year students, enrolled in either the Bachelor of Science in Computing Science or the Bachelor of Information Technology, who obtain the highest mark in the subject 31464 Information Technology Planning and Design. The cash award of $1,000 is shared among all students in the group.

Statistical Society of Australia Prize in Statistics

In 1980 the Statistical Society of Australia NSW Branch established a prize for excellence in Statistics. This prize is now awarded to the student who is first in order of merit of those students completing the Statistics strand of the Bachelor of Science (Honours) in Mathematics degree. The prize is a cash award of $200.

Westpac Information Systems Award

This prize was established in 1987 by the Westpac Banking Corporation. It is awarded annually to the full-time Bachelor of Science in Computing Science student who develops the best IT strategic plan based on his or her Industrial Training experience. The prize has a cash value of $1,000.

STATEMENT OF GOOD PRACTICE AND ETHICS IN INFORMAL ASSESSMENT

Aims of assignments

In many subjects offered by the Faculty, students undertake assessment tasks in the form of assignments. The setting of assignments is intended to promote a number of educational aims, including furthering each student's learning of the subject, particularly the acquisition of practical skills; providing a means for staff to assess each student's learning; providing feedback to the student on his or her progress in learning; and providing feedback to staff on the effectiveness of their teaching.

These aims can be subverted if students deceive staff about the authorship of their work.

Acceptable behaviour

Using sources

Whenever anything from someone else's work is used, it is standard practice to indicate exactly where the information comes from. Acknowledgment is achieved by using a standard system of referencing, such as footnotes, end notes, the Harvard system etc. *The Guide to Writing Assignments* (available from the Co-op Bookshop) explains how to use all these standard systems of reference.

Collaboration

In some cases assignment guidelines may permit or require students to cooperate in developing a solution to part or all of an assignment. This may occur formally when a staff member assigns students to groups and indicates which components of the assignment they are to work on as a group and which components they are to work on individually.

It may also occur informally. For example, some assignments may involve an 'ideas gathering' phase followed by an 'execution' phase. Students may be permitted to collaborate informally on the preliminary phase(s), but be expected to work completely individually on the subsequent phase(s). In a programming assignment, for example, it is normally acceptable for one student to discuss with another student (or other person) the specifications of the task so as to determine the requirements (see below). Whether this collaboration could extend to subsequent phases (such as the design phase) would

depend on the assignment guidelines; normally, collaboration in the design and subsequent phases is not permitted.

Depending on the type of assignment and degree of collaboration permitted it is possible to define several categories of collaboration:

- individual effort (the student is required to work on all phases entirely by himself or herself)
- group effort (the student is required to work on all phases as part of a formal group)
- mixed effort (the student is required or permitted to work on some or all phases as part of a formal or informal group).

Unless assignment guidelines specifically state otherwise, **a student should assume that an assignment requires a completely individual effort**. The forms of cooperative collaborative behaviour that are acceptable under most circumstances are:

- discussing assignment specifications with another student (or other person) with a view to clarifying what is required
- getting help from another student (or other person) on technical matters that are not directly part of the assessment task (e.g. on how to use some facility provided by the computer system, such as the editor)
- getting help from another student (or other person) in debugging a program. This is a common occurrence in computing, and
- obtaining help from a tutor.

Generally, what distinguishes the acceptable cases of collaborative behaviour from the unacceptable ones is the student's intention to deceive. For example, in an assignment requiring a completely individual effort, a student may encounter some snag, such as an unfamiliar compiler diagnostic. If the student were to seek help from another student (or person) to remove the snag, then this would normally be considered acceptable behaviour. If, however, several students designed and coded a solution together, then disguised this collaboration, that would be unacceptable behaviour.

Unacceptable behaviour

Outright lying

This is seen most often in programming assignments, where the program does not run, or runs incorrectly, yet the output handed in

is correct. The output has been 'tailored' using a word processor in an attempt to fool the marker. Lying is never acceptable behaviour.

Plagiarism

Plagiarism is the action of taking and using as one's own the thoughts, writings or inventions of another with the intention to deceive.

For example, if one student in a computing subject were to obtain a copy of another student's (or other person's) program, were to modify parts of the program (e.g. change variable names) so as to disguise its origin, and then submit the modified program as his or her solution, then this would be considered plagiarism.

As another example, a student may obtain all or a major part of the solution to an assignment problem from a text book and, without acknowledging this, submit the solution as his or her own work.

As a further example, a student may use a source of information in an essay, without acknowledging the source. Such plagiarism may range from a sentence or two, or a table or diagram, to occasional cases where the entire paper consists of material copied from a book with only a few sentences added by the student. The student thus submits another's ideas as his or her own work.

Plagiarism is a form of cheating and is never acceptable.

Collusion

Collusion occurs when a student combines with one or more other students (or other persons) to produce a common essay or solution to part or all of an assignment, disguises the shared origin of the solution, and submits the solution as his or her own individual work. Allowing another student access to your work is also regarded as collusion and students caught doing so will be penalised.

Collusion is regarded as a form of cheating and is never acceptable.

GRADUATION CEREMONIES

University graduation ceremonies are held in the Autumn and Spring semesters of each year. All students should take note of the Academic Board policy on late approval of graduands which states that 'any graduands who have their results confirmed **after** the appropriate Academic Board meeting should **not** be eligible to graduate at the immediately forthcoming ceremony'. Any graduand who is approved, through exceptional circumstances, to attend a ceremony after the Academic Board deadline may not have his or her name included in the Graduation Program.

ENVIRONMENTAL HEALTH AND SAFETY

The Faculty has an Environmental Health and Safety Plan, copies of which are available from either Information Office, or on the Department and Faculty web pages. Staff and students should familiarise themselves with the plan and comply with all hazard procedures outlined in it.

The names and locations of First Aid Officers, and of first aid kits, are indicated by appropriate signs in Faculty and Department areas.

INSEARCH

Insearch, which is wholly owned by the University of Technology, Sydney, offers a Foundation Studies Certificate program in Mathematics and Diploma programs in Information Technology. These programs are designed, taught and supervised by the Faculty of Information Technology staff for students who are not currently qualified for direct university entry. While the University cannot guarantee admission to its degree programs (except for international students), students who have completed the Foundation Studies Certificate program may apply for admission to the first year of the Bachelor of Mathematics and Bachelor of Mathematics and Finance. If admitted, students who have completed the Diploma program may be granted up to one year's advanced standing in the Bachelor of Computing (international students only) or Bachelor of Science in Computing Science degrees.

For further information contact:

The Registrar
Insearch
10 Quay Street
Haymarket
telephone (02) 9218 8688
fax (02) 9281 9875
email courses@insearch.edu.au

www.insearch.edu.au

MAJORS AND SUB-MAJORS OFFERED TO STUDENTS ENROLLED IN OTHER FACULTIES

The Faculty offers a number of sub-majors to students enrolled in other faculties. Students wishing to enrol in a sub-major offered by the Faculty of Information Technology should first contact the Faculty Information Office on (02) 9514 1803.

In all cases, enrolment will be subject to students obtaining the permission of their home faculty, and their satisfying all prerequisite requirements.

Students should refer to the Subject Descriptions section at the back of this handbook for prerequisite details.

Major offered by the Faculty of Information Technology

The following major is currently available to students enrolled in any faculty.

Information Technology (48cp)

The Information Technology major is available to international students in the Faculty of Business and to students in the Department of Mathematical Sciences.

Sequence

31414	Information Systems	6cp
31424	Systems Modelling	6cp
31509	Computer Fundamentals	6cp
31434	Database Design	6cp
31508	Programming Fundamentals	6cp
31516	Networking Fundamentals	6cp
3xxxx	Electives (chosen from Computing electives for which students have the prerequisites)	12cp

Sub-majors offered by the Faculty of Information Technology

The following sub-majors are currently available to students enrolled in any faculty.

Business Analysis and Design/ Databases (24cp)

This sub-major provides students with a detailed knowledge of current, state-of-the-art databases – relational, object-oriented and distributed – and the analysis and design needed to use them.

Sequence

31424	Systems Modelling	6cp
31511	Systems Design	6cp
31434	Database Design	6cp
	and one of	
31443	Distributed Databases and Client/ Server Computing	6cp
31921	Objectbases	6cp

Business Information Systems (24cp)

This sub-major is available to Accounting students in particular.

Sequence

31414	Information Systems	6cp
31424	Systems Modelling	6cp
31508	Programming Fundamentals	6cp
31434	Database Design	6cp

Business Information Technology (24cp)

This sub-major provides students with a broad overview of the basics of computer hardware and software and major applications.

Sequence

31508	Programming Fundamentals	6cp
31424	Systems Modelling	6cp
31434	Database Design	6cp
31516	Networking Fundamentals	6cp

Computer Graphics (24cp)

This sub-major provides students with an opportunity to study the area of computer graphics in-depth.

Sequence

31140	Introduction to Computer Graphics	6cp
31605	Computer Graphics Rendering Techniques	6cp
31603	3D Computer Animation	6cp
31352	Project	6cp

Note: The subject 31352 Project will involve an in-depth investigation of an area of computer graphics involving programming. Students will not be allowed to commence the project until they have successfully completed 31605 Computer Graphics Rendering Techniques.

Electronic Commerce (General) (24cp)

This sub-major is suitable for students from all faculties, and emphasises the analysis and system design skills and applications of technology to develop systems.

Sequence

31516	Networking Fundamentals	6cp
31749	Internet Commerce	6cp
31950	Networked Enterprise Design	6cp
31606	Virtual Communities	6cp

Note: In some circumstances, the subject 31436 System Software and Networks may substituted for 31516 Networking Fundamentals.

Electronic Commerce (Technical) (24cp)

This sub-major is suitable for students from the Faculty of Engineering or the Department of Computing Sciences, and emphasises technical implementation issues and program and system development skills.

Sequence

31516	Networking Fundamentals	6cp
31749	Internet Commerce	6cp
31748	Programming on the Internet	6cp
31750	Intelligent Agents in Java	6cp

Note: Under some circumstances, the subject 31436 System Software and Networks may substituted for 31516 Networking Fundamentals.

Human Factors and Computing in Business (24cp)

The sub-major on Human Factors and Computing in Business provides students with an insight into the effect that computers and information technology have on staff and the workplace, particularly in a climate of change.

Sequence

31424	Systems Modelling	6cp
31511	Systems Design	6cp
31777	Human–Computer Interaction	6cp
	and one of	
31950	Networked Enterprise Design	6cp
31736	Business Processes and IT Strategy	6cp

Information Technology (32cp)

This sub-major is available to Information Studies students.

Sequence

31508	Programming Fundamentals	6cp
31424	Systems Modelling	6cp
31434	Database Design	6cp
31516	Networking Fundamentals	6cp
3xxxx	Electives (chosen from Computing electives for which students have the prerequisites)	6cp or 12cp

Mathematics (24cp)

The Mathematics sub-major provides a foundation of knowledge in mathematics sufficient for further development in the discipline and its application to quantitative areas of business, particularly finance. It contributes key critical, analytical and quantitative skills.

Sequence

35101	Mathematics 1	6cp
35102	Mathematics 2	6cp
35212	Linear Algebra[1]	6cp
35231	Differential Equations	6cp

[1] The subject 25406 Quantitative Techniques for Finance and Economics is accepted as a prerequisite for 35212 Linear Algebra. Otherwise, students must substitute 35140 Operations Research Modelling for 35231 Differential Equations.

Operations Research (24cp)

The Operations Research sub-major provides students with a level of knowledge necessary for the application of the discipline in areas of relevance to business, particularly mathematical programming (optimisation), scheduling and transportation, inventory analysis and financial modelling.

Sequence

33401	Introductory Mathematical Methods	6cp
35241	Optimisation 1[1]	6cp
	two subjects chosen from	
35342	Optimisation 2	6cp
35344	Network Optimisation	6cp
35361	Probability and Stochastic Processes	6cp
35363	Simulation Modelling	6cp

[1] The subject 25406 Quantitative Techniques for Finance and Economics is accepted as a prerequisite for 35241 Optimisation 1. Otherwise, students must include 35140 Operations Research Modelling in the sub-major, and choose only one of the final three subjects above.

Programming and Design (24cp)

The Programming and Design sub-major provides students with skills in systems modelling and design, and object-oriented and procedural programming.

Sequence

31508	Programming Fundamentals	6cp
31424	Systems Modelling	6cp
31429	Procedural Programming	6cp
31434	Database Design	6cp

Statistics (24cp)

The Statistics sub-major provides students with a level of knowledge necessary for the application of the discipline in areas of relevance to business, particularly regression methods, design and analysis of statistical experiments, and stochastic processes.

Sequence

33401	Introductory Mathematical Methods	6cp
35252	Statistics 2	6cp
	two subjects chosen from	
35353	Regression Analysis	6cp
35355	Quality Control	6cp
35356	Design and Analysis of Experiments	6cp
35361	Probability and Stochastic Processes	6cp

Information Technology specialisations in the MBA

Business Information Technology

This sub-major and major are designed for students with little, or no, IT background.

Sub-major

32517	Commerce on the Internet	6cp
32531	Global Information Systems	6cp
32532	Conducting Business Electronically	6cp
32606	Database	6cp
32607	Systems Analysis	6cp

Major

31511	Systems Design	6cp
32517	Commerce on the Internet	6cp
32531	Global Information Systems	6cp
32532	Conducting Business Electronically	6cp
32533	Networking Communities	6cp
32534	Knowledge Management	6cp
32606	Database	6cp
32607	Systems Analysis	6cp

Strategic Information Technology

This sub-major and major are designed for students with at least an IT major at undergraduate level and for some subjects, at least four years' experience in the industry would be required.

Sub-major

32517	Commerce on the Internet	6cp
32531	Global Information Systems	6cp
32532	Conducting Business Electronically	6cp
32533	Networking Communities	6cp

Major

32204	Advanced Data Management[1]	6cp
32208	Information Processing Strategy[1]	6cp
32517	Commerce on the Internet	6cp
32531	Global Information Systems	6cp
32532	Conducting Business Electronically	6cp
32533	Networking Communities	6cp
32534	Knowledge Management	6cp
32604	Systems Integration[1]	6cp

[1] IT work experience required.

INTERNATIONAL STUDIES ELECTIVES

The Institute for International Studies at UTS offers electives in language studies, and in the study of contemporary societies in parts of the non-English-speaking world. All subjects last for one semester and have a value of eight credit points.

Language studies

All students wishing to engage in language studies as a credited part of their degree are required to enrol through the Institute for International Studies, whether the language studies are undertaken at UTS or elsewhere. The Institute teaches some language programs at UTS, has made arrangements with other universities for some languages to be taught to UTS students, and can make special arrangements for individual students to attend specific language programs where academic needs demand. The individual student's level of language proficiency before entry to the UTS program determines his or her level of language study. There is a range of entry levels to the various programs available. Most are available at beginners' and post-HSC levels, and some at more advanced levels.

In the International Studies Program, students focus on one of the following countries or majors: Argentina, Chile, China, France, Germany, Indonesia, Italy, Japan, Malaysia, Mexico, Russia, Spain and Thailand. The availability of the Russian major is currently being reviewed. There is also a Heritage Major that permits students with previous exposure to a language and culture to continue their study in countries such as Greece, Hong Kong, Korea, Poland, Taiwan and Vietnam.

Australia and the Asia-Pacific is only available as a major to international students. International students may access one of the other majors offered provided that the country they choose as their major is able to grant them a visa to study there. This would need to be determined prior to commencing subjects within the International Studies major. If a visa cannot be granted, then it will not be possible to undertake the chosen major.

Contemporary Society

The Institute also offers a series of subjects that provides an introduction to the contemporary societies, politics, economies and cultures of the countries of East and South-East Asia, Latin America and Western Europe, which are the areas of specialisation of the Institute.

The following majors are offered: Argentina, Australia and the Asia–Pacific Region, Chile, China, France, Germany, Indonesia, Italy, Japan, Malaysia, Mexico, Russia, Spain and Thailand. There are also sub-majors in specialist countries and languages other than English. Details of the International Studies subjects are available in the 2001 handbook for the Institute for International Studies.

For further details, students should consult the 2001 handbook for the Institute for International Studies, or

The Academic Administrator
Institute for International Studies
10 Quay Street
Ultimo NSW 2007
telephone (02) 9514 1426
fax (02) 9514 1578

UNDERGRADUATE COURSES

COMPUTING AND INFORMATION TECHNOLOGY

Bachelor of Science in Computing Science/ Diploma in Information Technology Professional Practice

- ◆ *Course code: MC12*
- ◆ *UAC code: 605000 (F/T); 605001 (P/T)*
- ◆ *Testamur title: Bachelor of Science in Computing Science*
  Diploma in Information Technology Professional Practice
- ◆ *Abbreviation: BSc DipITProfPrac*
- ◆ *Course fee: HECS (local)[1]*

Bachelor of Science in Computing Science (pre-2000)

- ◆ *Course code: MC02*
- ◆ *UAC code: 605000 (F/T); 605001 (P/T)*
- ◆ *Testamur title: Bachelor of Science in Computing Science*
- ◆ *Abbreviation: BSc*
- ◆ *Course fee: HECS (local)[1]*

This course aims to provide a sound education in all aspects of computing and information technology for students who intend to make a career in the profession. It is intended that the course will provide a suitable background covering all aspects of computer science and information technology, short of the actual design and construction of hardware systems.

The course provides an in-depth study of information technology and its applications and, in addition, support subjects are included to enable graduates to fulfil an appropriate role in the business activities of an organisation. It is intended that the formal studies will be treated in a manner that will encourage initiative. Not only will the course provide a suitable framework for a professional career, it will also form a basis from which postgraduate studies may begin.

The course consists of six academic semesters of full-time study or the equivalent in part-time attendance, and a period of Industrial Training. Since 2000, a 12-credit-point Diploma in Information Technology Professional Practice has been introduced to formally recognise the technical and generic skills developed during Industrial Training for all undergraduates.

The Diploma in Information Technology Professional Practice replaces the former Industrial Training. Students currently enrolled in the BSc in Computing Science have the option to remain in the pre-2000 program. All students enrolling in the BSc in Computing Science from 2000 enrol in MC12 and undertake the Diploma in Information Technology Professional Practice.

Holders of the degree are eligible for membership of the Australian Computer Society at the professional level.

Diploma in Information Technology Professional Practice and Industrial Training

Full-time students normally undertake the Diploma in Information Technology Professional Practice, and Industrial Training after completing Year 2, and part-time students after completing Year 4. Pre-2000 students are required to undertake Industry Training only, but may opt to undertake the Diploma in Information Technology Professional Practice.

No student will be permitted to enrol in Industrial Training until they have completed successfully (or have been exempted) from all subjects that are prerequisites for Industrial Training, namely: 31414 Information Systems; 31415 Principles of Software Development A; 31416 Computer Systems Architecture; 31417 Computing Practice; 31424 Systems Modelling; 31429 Procedural Programming; 31434 Database Design; and 31436 Systems Software and Networks.

Students will not be permitted to enrol in Industrial Training until they have obtained suitable employment.

To gain credit for Industrial Training, students are required to obtain an approved, full-time

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[1] This course is not offered to international students.

job within the information industry. The duration of Industrial Training is a minimum of nine months for full-time students or 18 months for part-time students.

In exceptional circumstances, students may be granted an exemption from Industrial Training if they have completed at least 12 months of suitable recent full-time employment. In general, contracting and self-employment are not regarded as suitable employment.

No student may apply for an exemption from Industrial Training until after successful completion (or exemption) from all subjects that are prerequisites for Industrial Training.

During Industrial Training, students are required to behave in a professional manner, and to keep the Faculty informed of the status of their employment at all times so that the Faculty is able to assess their experience. Each year the Faculty of Information Technology publishes an *Industrial Training Student Guide* (for full-time students) which sets out in detail what is required to pass the subject. Students will receive a copy of this Guide at the Industrial Training information session held in May each year.

Although the securing of suitable employment during Industrial Training is the student's responsibility, the Faculty provides assistance to all Industrial Training students. Students who wish to benefit from the direct assistance of the Faculty in finding an Industrial Training position should refer to the *Industrial Training Student Guide* for the procedure to be followed.

Students who wish to seek an Industrial Training position without the direct assistance of the Faculty should first make an appointment to see the Industry Liaison Officer, who will provide a description of the requirements of an Industrial Training position. If a student finds employment, a second appointment must be made to see the Industry Liaison Officer to obtain certification that the employment is suitable for Industrial Training.

Full-time Industrial Training students are assessed by members of the academic staff who normally visit students during the first semester of their employment.

In general, students find Industrial Training extremely beneficial in relating the final year of coursework to the practical needs of the information industry, and this experience can be cited when applying for graduate career positions.

Grading of awards

Students are graded for awards by a two-stage process involving first qualifying and then grading students.

The subjects to be included in the grading process are the core subjects, excluding those normally taken during Stages 1 and 2 of the part-time course or the first year of the full-time course. All core subjects must be passed. Any of those subjects that have been failed and subsequently passed will be included with a raw mark of 50 per cent.

Qualifying
Pass degree

A student who has accumulated 144 credit points and has an average raw mark of 50 per cent or greater will qualify for a Pass degree.

Grading
Honours degree

The average raw marks required to achieve the Honours grades in Autumn 2000 were:

- First Class Honours: 76.8 per cent
- Second Class Honours: 70.65 per cent.

The grading of qualifying students is carried out by the Faculty's Examination Review Committee on an individual basis. For First Class Honours, no failures are permitted over the entire course. For Second Class Honours, only one failure over the entire course is permitted. The Committee is provided with the following information on each qualifier:

- any failures, including subject details and whether or not a failure was of a technical nature
- the subject details and marks for all electives undertaken
- the time taken to complete the course in terms of stages, excluding periods of leave of absence, and
- the average mark for each stage during the course.

Honours

It is likely that a separate Honours program will be introduced with a major course redesign from 2002. When this program is implemented, students will have to enrol in a separate Honours program and reach an appropriate level in their studies.

Exemptions

Exemptions may be granted on the basis of recent academic study (within the last three years) towards a degree. Students must be able to demonstrate that the knowledge is current. Exemption from core subjects may be granted where subjects successfully completed previously coincide with Bachelor of Science in Computing Science subjects.

Students are expected to apply for exemptions, for which they believe they are eligible, at the commencement of their first year of study. The Faculty usually processes exemptions immediately.

Exemptions for transfer students from ATN Universities

The ATN (Australian Technology Network) Universities have an agreement in place concerning exemptions for study in equivalent courses for students transferring between ATN Universities. Please contact the Bachelor of Science in Computing Science Program Leader for details.

Exemptions for holders of the Diploma in Information Technology from Insearch

Student entering the BSc (Computing Science) who have graduated with a Credit average from the Diploma in Information Technology at Insearch will receive automatic exemptions from the following subjects:

31414	Information Systems	6cp
31416	Computer Systems Architecture	6cp
31417	Computing Practice	6cp
31424	Systems Modelling	6cp
31425	Principles of Software Development B	6cp
31429	Procedural Programming	6cp
3xxxx	Electives	12cp

Exemptions for holders of TAFE Associate Diplomas and Diplomas

Current TAFE courses operate at three levels: Level 3, Level 4, and Diploma. Level 3 forms the compulsory foundation for the other levels. Level 4 consists of a number of Specialist Groups. Students complete two Specialist Groups plus extra modules and a project to gain the Diploma. The required mixture of Specialist Groups and the Project area determine the name of the Diploma.

Exemption principles

Exemptions for specific computing subjects will be granted on the basis of Level 3 studies and the Specialist Groups. Students who have completed a Diploma will also be granted a number of credit points of Unspecified CS/IS Electives, the number depending upon the relevance of a particular Diploma to the Bachelor of Science in Computing Science. Note that the granting of exemptions does not imply automatic entry into a course.

Exemption details

The following details apply to the components leading to a Diploma in Information Technology. Students from the Electrical and Electronic Engineering Diplomas may also be eligible for credit.

Students who have only completed 3601 Certificate Level 3 will be granted exemption from 31417 Computing Practice.

Students who have completed Level 4 or a Diploma will receive exemptions for the following subjects as per the table below.

In addition, students who have completed a Diploma will be granted credit points for

TAFE Specialist Group(s)	UTS Subject exemptions
3602 PC Support *and*	31416 Computer Systems Architecture
3604 Network Support	
3605 3GL Programming	31917 Commercial Programming in Cobol

3606 4GL & Database Programming
        including Modules 3606F, 3606G and 3606J
        (or acceptable equivalents)
	31434 Database Design

3607 C Programming	31429 Procedural Programming
3608 Object Programming	31860 Object-oriented Programming and C++
3609 Systems Analysis and Design *or*	31414 Information Systems
3615 Diploma of Information Technology (Business Systems)	

'Unspecified CS/IS Electives' to give a **total** of 30 credit points for the following courses:

- 3613 Diploma in Information Technology (Applications Programming)
- 3614 Diploma in Information Technology (Analyst/Programmer)
- 3615 Diploma in Information Technology (Business Systems).

Because it is less relevant to the Bachelor of Science in Computing Science, students in:

- 3612 Diploma in Information Technology (PC and Network Support)

will receive 12 credit points of 'Unspecified CS/IS Electives' giving a total of 24 credit points of exemptions.

Note: The TAFE Specialist Group in Multimedia has yet to be assessed.

Bachelor of Science in Computing Science pre-1995 course

Students who commenced the BSc prior to 1995 should consult the Bachelor of Science in Computing Science Program Leader, to determine their course program.

Program for students who commenced from 1995 onwards

Students should note that it is likely that a revised program will be in effect from 2002.

Recommended full-time program

Year 1

Autumn semester

31414	Information Systems	6cp
31415	Principles of Software Development A	6cp
31416	Computer Systems Architecture	6cp
31417	Computing Practice	6cp

Spring semester

31424	Systems Modelling	6cp
31425	Principles of Software Development B	6cp
31428	Quantitative Modelling	6cp
31429	Procedural Programming	6cp

Year 2

Autumn semester

22615	Accounting Information Systems	6cp
31434	Database Design	6cp
31436	Systems Software and Networks	8cp
3xxxx	Electives	6cp

Spring semester

31444	Systems Design and Development	10cp
3xxxx	Electives	12cp

Year 3

Post-2000

Autumn semester

31136	Preparation and Review of IT Experience	6cp
31137	IT Experience 1	—

Spring semester

31138	Review of IT Experience	6cp
31139	IT Experience 2	—

Pre-2000

Autumn semester

31696	Industrial Training	—

Spring semester

31697	Industrial Training	—

Year 4

Autumn semester

31454	Project Management and the Professional	6cp
31455	Software Development Case Study	6cp
3xxxx	Electives	12cp

Spring semester

31455	Software Development Case Study (cont.)	6cp
31464	Information Technology Planning and Design	6cp
3xxxx	Electives	12cp

Recommended part-time program

Year 1

Autumn semester

31416	Computer Systems Architecture	6cp
31417	Computing Practice	6cp

Spring semester

31414	Information Systems	6cp
31415	Principles of Software Development A	6cp

Year 2

Autumn semester

31425	Principles of Software Development B	6cp
31428	Quantitative Modelling	6cp

Spring semester

31424	Systems Modelling	6cp
31429	Procedural Programming	6cp

Year 3

Autumn semester

31434	Database Design	6cp
3xxxx	Elective	6cp

Spring semester

31436	Systems Software and Networks	8cp
3xxxx	Elective	6cp

Year 4

Autumn semester

31444	Systems Design and Development	10cp

Spring semester

22615	Accounting Information Systems	6cp
3xxxx	Elective	6cp

Year 5

Post-2000

Autumn semester

31455	Software Development Case Study	6cp
3xxxx	Elective	6cp
31136	Preparation and Review of IT Experience	6cp
31137	IT Experience 1	—

Spring semester

31455	Software Development Case Study (cont.)	6cp
31454	Project Management and the Professional	6cp

Pre-2000

Autumn semester

31455	Software Development Case Study	6cp
3xxxx	Elective	6cp
31698	Industrial Training	—

Spring semester

31455	Software Development Case Study (cont.)	6cp
31454	Project Management and the Professional	6cp
31699	Industrial Training	—

Year 6

Post-2000

Autumn semester

31464	Information Technology Planning and Design	6cp
3xxxx	Elective	6cp
31138	Review of IT Experience	6cp
31139	IT Experience 2	—

Spring semester

3xxxx	Electives	12cp

Pre-2000

Autumn semester

31464	Information Technology Planning and Design	6cp
3xxxx	Elective	6cp
31698	Industrial Training	—

Spring semester

3xxxx	Electives	12cp
31699	Industrial Training	—

Program for Bachelor of Science in Computing Science applicants from Insearch

A total of 144 credit points is required to complete this program. This includes 48 credit points of exemptions.

Autumn semester start

Year 1

Autumn semester

31415	Principles of Software Development A	6cp
31434	Database Design	6cp
31436	Systems Software and Networks	8cp
22615	Accounting Information Systems	4cp

Spring semester

31428	Quantitative Modelling	6cp
31444	Systems Design and Development	10cp
3xxxx	Elective	6cp

Industrial training year

31696	Industrial Training (Autumn semester)	—
31697	Industrial Training (Spring semester)	—

Year 3

Autumn semester

31454	Project Management and the Professional	6cp
31455	Software Development Case Study	6cp
3xxxx	Electives	12cp

Spring semester

31455	Software Development Case Study (cont.)	6cp
31464	Information Technology Planning and Design	6cp
3xxxx	Electives	12cp

Spring semester start

Year 1

Spring semester

31436	Systems Software and Networks (evenings)	8cp
31434	Database Design	6cp
31428	Quantitative Modelling	6cp
3xxxx	Elective	6cp

Autumn semester

31415	Principles of Software Development A	6cp
31444	Systems Design and Development	10cp
22615	Accounting Information Systems	6cp

Industrial training year

31696	Industrial Training (Spring semester)	—
31697	Industrial Training (Autumn semester)	—
31455	Software Development Case Study (evening)	6cp

Year 3

Spring semester

31454	Project Management and the Professional (evening)	6cp
31455	Software Development Case Study (cont.) (evening)	6cp
3xxxx	Electives	12cp

Autumn semester

31464	Information Technology Planning and Design (evening)	6cp
3xxxx	Electives	12cp

Electives

Students must do a minimum of 42 credit points of electives, of which 18 credit points must be taken from the Departments of Computer Systems, Information Systems and/or Software Engineering. The remaining elective credit points (minimum 24) may also be taken from these departments; alternatively, a student may opt to take a coherent staged group of subjects, normally a formally approved sub-major from another department or faculty. Typically, these are from the Faculties of Business, Engineering, Humanities and Social Sciences, Science, and the Department of Mathematical Sciences.

Many subjects that are offered by other departments and faculties may contain material which is already covered in the Computing Science degree. Students who would like to take subjects from other parts of the University which are not part of sub-majors approved for Computing Sciences students (as listed in this handbook), should discuss their proposed subjects with the Electives Coordinator or an Academic Adviser. (It should be noted that the norm for electives is 42 credit points, but as subjects in other faculties are worth varying amounts of credit points, a student's total elective credit points may exceed 42.)

Students should be aware that they may enrol in subjects in another faculty only if a class place is available. This applies particularly to the Faculties of Business, and Humanities and Social Sciences.

Projects

In lieu of one elective subject, students may take one 6-credit-point project. In many cases, these projects may be completed over the Christmas or between-semester breaks, if desired.

A list of projects nominated by various staff members may be viewed on the SUNs, by logging in as **projects** and following the instructions. Students should also complete a Project Registration form, available from the Projects Coordinator, who will answer any queries. Students who have their own ideas for projects may approach relevant staff members to be their supervisors and must also see the Projects Coordinator for approval. Enrolment will not be allowed without an approved Project Registration form.

Students may not use work done in the normal course of duties as an Industrial Training student, or as a part-time student, as a project. Students may, however, do a project that is related to their work if it is done outside normal work hours. In this case, the student's work supervisor would probably become a joint supervisor of the project. Projects are also available through the UTS Shopfront, telephone (02) 9514 2900.

As a general guide, a student doing a 6-credit-point project is expected to spend a **minimum** of 150 hours on the project.

Sub-majors

Aboriginal Studies (24cp)

The Faculty of Education offer a range of Aboriginal Studies subjects that may be taken as a sub-major, or as elective subjects, as appropriate, within any undergraduate course.

The sub-major provides Aboriginal and non-Aboriginal students with an opportunity to study subjects that are culturally appropriate to an understanding of Aboriginal culture, history and social/political structures. These initial studies serve as a basis for applying critical analysis skills to Aboriginal and non-Aboriginal perspectives on issues and trends which affect the cultural and social integrity of Aboriginal peoples. Consideration is also given to other indigenous people, including Torres Strait Islanders.

The sub-major consists of the following subjects:

015110	Aboriginal Cultures and Philosophies	8cp
015168	The Politics of Aboriginal History	8cp
015395	Aboriginal Social and Political History	8cp

For further information on this sub-major, contact:

Faculty of Education
telephone (02) 9514 3900

Computer Graphics

This sub-major provides students with an opportunity to study the area of computer graphics in-depth.

Sequence

31140	Introduction to Computer Graphics	6cp
31605	Computer Graphics Rendering Techniques	6cp
31603	3D Computer Animation	6cp
31352	Project	6cp

Note: The subject 31352 Project will involve an in-depth investigation of an area of computer graphics involving programming. Students will not be allowed to commence the project until they have successfully completed 31605 Computer Graphics Rendering Techniques.

Electronic Commerce (General)

This sub-major is suitable for students from all faculties, and emphasises the analysis and system design skills and applications of technology to develop systems.

Sequence

31516	Networking Fundamentals	6cp
31749	Internet Commerce	6cp
31950	Networked Enterprise Design	6cp
31606	Virtual Communities	6cp

Note: In some circumstances, the subject 31436 System Software and Networks may be substituted for 31516 Networking Fundamentals.

Electronic Commerce (Technical)

This sub-major is suitable for students from the Faculty of Engineering or students enrolled in the Bachelor of Science (Computing Science) or the Bachelor of Computing, and emphasises technical implementation issues and program and system development skills.

Sequence

31516	Networking Fundamentals	6cp
31749	Internet Commerce	6cp
31748	Programming on the Internet	6cp
31750	Intelligent Agents in Java	6cp

Note: Under some circumstances, the subject 31436 System Software and Networks may be substituted for 31516 Networking Fundamentals.

Operations Research

Contact person: Dr B Moore
Room 1550, Building 1
telephone (02) 9514 2258

33401	Introductory Mathematical Methods	6cp
35140	Operations Research Modelling	6cp
35241	Optimisation 1	6cp
	one subject chosen from:	
35342	Optimisation 2	6cp
35344	Network Optimisation	6cp
35363	Simulation Modelling	6cp

Statistics

Contact person: Dr B Moore
Room 1550, Building 1
telephone (02) 9514 2258

33401	Introductory Mathematical Methods	6cp
35252	Statistics 2	6cp
	two subjects chosen from:	
35353	Regression Analysis	6cp
35355	Quality Control	6cp
35356	Design and Analysis of Experiments	6cp
35361	Probability and Stochastic Processes	6cp

Humanities and Social Sciences

The Faculty of Humanities and Social Sciences offers electives and elective sub-majors to students across the University. Subject descriptions for these subjects can be found in 2001 handbook for the Faculty of Humanities and Social Sciences.

Communication and English Language Studies

Offered through the ELSSA Centre, these subjects are designed for students with particular needs in relation to language and study skills.

59316	Essay Writing	4cp
59317	Report Writing	4cp

Other electives

Various other electives are available through the Faculty of Humanities and Social Sciences.

Information on the timetabling of subjects can be obtained by viewing the Electives timetable displayed outside the Faculty Student Centre, Faculty of Humanities and Social Sciences, on level 2, Building 3; the 2001 handbook for the Faculty of Humanities and Social Sciences (available for viewing in the Faculty Student Centre); and by visiting or calling the Faculty Student Centre, telephone (02) 9415 2300.

Business

The Faculty of Business offers the following sub-majors to students in the Departments of Computer Systems, Information Systems and/or Software Engineering. Students may undertake other sub-majors if they have the necessary prerequisites. Further information about these sub-majors can be obtained from the 2001 handbook for the Faculty of Business. Students who wish to undertake a Business sub-major should first seek advice from the Faculty of Business Student Liaison Office, telephone (02) 9514 3500.

All sub-majors, as described below, are subject to approval by the Faculty of Business and by the Faculty Board in Information Technology.

School of Accounting

Business Accounting (24cp)
22107	Accounting for Business	6cp
22207	Accounting Transactions and Business Decisions	6cp
	and choose two of the following	
22320	Accounting for Business Combinations	6cp
22420	Accounting Standards and Regulations	6cp
22240	International Accounting	6cp
22206	Government Accounting	6cp
22610	Accounting for Insolvency	6cp
22321	Cost Management Systems	6cp

Small Business Accounting (24cp)
22107	Accounting for Business	6cp
22207	Accounting Transactions and Business Decisions	6cp
22566	Accounting for Small Business 1	6cp
22567	Accounting for Small Business 2	6cp

School of Finance and Economics

Economics (24cp)
25115	Economics for Business	6cp
25210	Microeconomic Theory and Policy	6cp
25303	Industry Economics	6cp
25309	Macroeconomic Theory and Policy	6cp

School of Management

Employment Relations (24cp)
21128	International Business	6cp
21129	Managing People and Organisations	6cp
21306	International Employment Relations	6cp
21407	Strategic Human Resource Management	6cp

International Management (24cp)
21128	International Business	6cp
21129	Managing People and Organisations	6cp
21591	International Management	6cp
21531	Managing the International Organisation	6cp

School of Marketing

Introductory Advertising (24cp)
24108	Marketing Foundations	6cp
24202	Consumer Behaviour	6cp
24210	Advertising and Promotions Management	6cp
24309	Introductory Marketing Research	6cp

Introductory Marketing (24cp)
24108	Marketing Foundations	6cp
24202	Consumer Behaviour	6cp
24309	Introductory Marketing Research	6cp
	and choose one of the following:	
24205	Business Marketing	6cp
24220	International Marketing	6cp

Science

Physics (General) (24cp)

This sub-major provides a grounding in general physics. It is of benefit to students contemplating a career in the programming of scientific and engineering problems.

The minimum of 24 credit points may be made up as shown in the table below.

Subject number	Subject name	Semester offered	CP	Prerequisites
68101	Foundations of Physics	A,S	6	
68201	Physics in Action (Physics 2)	A,S	6	68101
	plus two of the following			
68311	Atoms, Photons and Orbits (Physics 3)	A	6	68201
68312	Electrotechnology and Data Analysis	A	6	68201
68411	Vibrations, Quanta and Nucleons (Physics 4)	S	6	68201

Electronics and Computer Interfacing (24cp)

This sub-major provides the knowledge needed to use microprocessors for recording and analysing experimental measurements. It progresses from digital electronic circuitry to microcomputer architecture and then to transductors and devices for interfacing with the real world.

Subject number	Subject name	Semester offered	CP	Prerequisites
68101	Foundations of Physics[1]	A,S	6	
68201	Physics in Action (Physics 2)	A,S	6	68101
68314	Electronics	A,S	6	68201
68514	Electronics and Interfacing	A	6	68314

[1] Students with a sufficiently strong background may substitute 68312 Applied Physics 1 (prerequisite Physics 2) for this subject.

For further information about Science subjects, see the 2001 handbook for the Faculty of Science.

Electives from other universities

Students wishing to do electives outside the University **must** see the Electives Coordinator to discuss the proposal. Special approval must be sought well before the intended semester of study. Students may undertake subjects outside the University as electives **only** if no comparable subject is offered by the University.

Bachelor of Information Technology

+ *Course code: MC03*
+ *UAC code: 605010*
+ *Testamur title: Bachelor of Information Technology*
+ *Abbreviation: BInfTech*
+ *Course fee: HECS (local)[1]*

This course is a cooperative education program in computer information systems and has been developed by the Faculty of Information Technology in cooperation with a group of private and public sector employers. The course is of three years' duration and involves four semesters of full-time study at the University and two semesters of full-time study and practical experience in industry. The industry-based semesters are of 24 weeks' duration, and a 42-week academic year is the norm for the course.

Year	Semester 1	Semester 2
1	UTS	Industry ·
2	UTS	UTS
3	Industry	UTS

The program differs from existing cooperative education courses in that during the industry-based semesters, students will follow a structured program designed jointly by the University and the employer group, including formal coursework taught in industry. This coursework is assessed to University and business standards and familiarises students with business needs and requirements. During the industry-based semesters, students will be exposed to real problems within an environment quite different from that of the University. The resources of industry will be available to support the education of students.

The central curriculum of the course is information systems; this is supported by studies in management, accounting, finance and marketing, as well as the necessary background subjects in computing science and programming. The active participation of industry practitioners in course design and course delivery will further ensure that graduates of the course are well equipped with skills that are relevant to present and future industry needs.

The two industry-based semesters will be spent with two different companies. Students are not employees of the company, and will not be obliged to find employment with a given company on completion of their studies. Nevertheless, students are encouraged to find employment within the group of sponsoring employers.

The number of students admitted each year will be limited by the number of sponsorship commitments secured from employers to a maximum of 50 places.

Each student admitted to the course will receive a scholarship for the duration of the course, subject to satisfactory performance and to certain conditions detailed further in this handbook. Each of the industry partners undertakes to sponsor a stated number of students, and contributes the full amount of their scholarship to a fund administered by the University.

The industry partners also provide the industry-based semester facilities for each of the students assigned to them.

Selection to the course is based on HSC results and on performance at an interview. Interviews are conducted by panels comprising representatives of the University and the industry group. Applicants will be assessed for their suitability to the industrial as well as the academic components of the course. The course is aimed primarily at school-leavers and is limited to citizens and permanent residents of Australia. Mature-age students are not normally admitted.

The Bachelor of Information Technology satisfies all of the requirements for professional-level membership of the Australian Computer Society, the industry's professional body.

Grading of awards

The BInfTech is awarded as a Pass degree, a degree with Credit or a degree with Distinction.

The grading is based on the Weighted Average Mark (WAM) of core subjects (with the exception of the industry-based semester subjects and 31769 Contemporary Information Technology 2) and performance in the final industry-based semester.

The grading of qualifying students is carried out by the Faculty's Examination Review Committee on an individual basis. This Committee takes account of input from the BInfTech Course Steering Committee. The Examination Review Committee is provided with the same information as that made available for the grading of BSc in Computing Science students, with one important addition: the overall assessment, by industry, of the final industry-based semester.

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[1]   This course is not offered to international students.

Course program

Year 1

Autumn semester – UTS

31414	Information Systems	6cp
31415	Principles of Software Development A	6cp
31416	Computer Systems Architecture	6cp
31718	Contemporary Information Technology 1	6cp

Spring semester – Industry

31722	Commercial Programming	5cp
31770	Industry Project 1	5cp
31771	Business Requirements Analysis	5cp
31779	Applications of Information Technology 1	5cp

Year 2

Autumn semester – UTS

22615	Accounting Information Systems	6cp
31424	Systems Modelling	6cp
31434	Database Design	6cp
31436	Systems Software and Networks	8cp

Spring semester – UTS

31444	Systems Design and Development	10cp
31443	Distributed Databases and Client/ Server Computing	6cp
31735	Information Systems and Organisation Development	6cp
3xxxx	Elective	6cp

Year 3

Autumn semester – Industry

31756	Project Management	5cp
31781	Business Systems Design	5cp
31789	Applications of Information Technology 2	5cp
31790	Industry Project 2	5cp

Spring semester – UTS

24108	Marketing Foundations	6cp
31464	Information Technology Planning and Design	6cp
31736	Business Processes and IT Strategy	6cp
31769	Contemporary Information Technology 2	4cp
3xxxx	Elective	6cp

Note: It is likely that there will be revisions to the program commencing in 2002.

Electives

Electives may be taken from the Faculty of Law, the Faculty of Business or the Faculty of Information Technology, and are subject to the approval of the Bachelor of Information Technology Program Leader.

Special conditions

There are special conditions relating to students enrolled in the Bachelor of Information Technology.

Leave of absence will not normally be granted to students, except under extraordinary circumstances and subject to satisfactory arrangements being possible. Likewise, **withdrawal** from the course and subsequent re-admission is not normally granted. Students are reminded that withdrawal without penalty from any course at the University is only possible up to the deadlines imposed by the University. After such deadlines, students will be expected to complete all assessment tasks for subjects in which they are enrolled.

Variations to the approved program of study for the Bachelor of Information Technology are restricted. No industry-based subject may be deleted from the program, except under extraordinary circumstances and at the discretion of the Course Steering Committee and the Faculty of Information Technology. No industry-based subject may be taken during a University-based semester. The taking of additional subjects during an industry-based semester is seen as unusual and may only be done at the discretion of the Course Steering Committee and the Faculty.

The Faculty will not recommend probation for unsatisfactory academic performance. Instead, the Faculty will recommend to the Faculty Board that a student be **excluded** under any of the following circumstances:

- a student fails any subject for the second time
- a student gains less than 50 per cent of the credit points for which he or she is enrolled in that assessment period
- a student fails any subject that is part of the program of an industry-based semester (there is provision for a supplementary examination to be taken in these subjects following a failure on the first attempt) or a student performs unsatisfactorily during an industry-based semester, or
- immediately prior to the commencement of an industry-based semester, a student has still to complete more than one subject in the normal program of the course to that stage.

Appeals against exclusion will be dealt with by the University's Appeals Committee (of the Academic Board), which will take into account the recommendation of the Course Steering Committee.

Industry semesters

The dates of the industry-based semesters for 2001 are as follows:

- Autumn semester (third-year students): Monday 15 January 2001 – Friday 29 June 2001
- Spring semester (first-year students): Monday 2 July 2001 – Friday 14 December 2001

Students are expected to attend their assigned sponsoring company on a full-time basis throughout these periods. Students cannot expect any absences to be approved during the industry-based semesters.

Personal details

Students must inform the University should their name or address change. BInfTech students **must** also inform Des Saunders, Industry Liaison Officer, of any changes to personal details. Students who wish to change the method of payment of the scholarship should contact the Salaries Office of the University's Financial Services Unit on (02) 9514 7402.

Scholarship

The scholarship will be paid at three different and increasing levels; all first-year students will start at Level 1. At the end of each year, all Bachelor of Information Technology students with satisfactory progress will move from their current level to the next level.

The levels for 2000 are as follows:

- Level 1: $11,500 per annum
- Level 2: $12,000 per annum
- Level 3: $12,500 per annum

The scholarship paid to BInfTech students has been ruled as tax exempt. The reference for the ruling by the Australian Tax Office is 6/SCHOLS/24, dated 29 February 1988.

Bachelor of Science in Computing Science/ Bachelor of Arts in International Studies[1]

- ◆ *Course code: MC05*
- ◆ *UAC code: 609230*
- ◆ *Testamur title: Bachelor of Science in Computing Science*
  Bachelor of Arts in International Studies
- ◆ *Abbreviation: BSc BA*
- ◆ *Course fee: HECS (local)[2]*

This course combines the Bachelor of Science in Computing Science with the University's Bachelor of Arts in International Studies. Computing Science is integrated with a major in the language and culture of another country. The course is of six years' duration and students spend the fourth year of study at a university overseas. The fifth and sixth years are completed part time.

Studies in Computing Sciences

The Computing Science component of the combined degree aims to provide a sound education in all aspects of computing and information technology for students who intend to follow a career in the profession. It is intended that the course will provide a suitable background covering all aspects of computer science and information technology, short of the actual design and construction of hardware systems.

For further information, see the course outline for the Bachelor of Science in Computing Science/Diploma in Information Technology Professional Practice in this handbook.

International Studies

The Bachelor of Arts in International Studies is designed to increase awareness and under-standing of the non-English-speaking world.

In the International Studies Program, students focus on one of the following countries or majors: Argentina, Chile, France, Germany, Indonesia, Italy, Japan, Malaysia, Mexico, Russia, Spain and Thailand. The availability of the Russian major is currently being reviewed. There is also a Heritage Major that permits students with previous exposure to a

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[1] The Diploma of Information Technology Professional Practice is yet to be introduced into this course and will be subject to approval.

[2] This course is not offered to international students.

language and culture to continue their study in countries such as Greece, Hong Kong, Korea, Poland, Taiwan and Vietnam.

Course structure

The structure of the six-year course in Computing Science and International Studies is derived from the combination of the Bachelor of Science in Computing Science/ Diploma in Information Technology Professional Practice with the Bachelor of Arts in International Studies.

All arrangements currently in force for both the Bachelor of Science in Computing Science and the Bachelor of Arts in International Studies apply equally to the combined degree program.

To graduate, a student is required to have completed 240 credit points: 144 credit points in Computing Science and 96 credit points in International Studies.

All students enrolled in the Bachelor of Science in Computing Science are required to pass two Industrial Training subjects. There are a substantial number of prerequisites for Industrial Training, which in this combined degree program is normally undertaken in part-time Years 5 and 6. To gain credit for Industrial Training, students are required to obtain an approved, full-time job within the information technology industry.

The Bachelor of Arts in International Studies requires undergraduates to study a major – a region or country of specialisation – over a minimum of three years. Students study language and culture for at least two years in Sydney, and this is followed by a period of study overseas.

Students are admitted to the International Studies program with no guarantee of entry to a specific major, though every effort is made to meet student preferences.

Each of the specialisations within the International Studies program is 96 credit points, and includes 32 credit points (four 8-credit-point subjects) of instruction in an appropriate Language and Culture subject; 8 credit points of study in Comparative Social Change; 8 credit points of study of Contemporary Society; and 48 credit points (two semesters) of study at a university or institution of higher education in the country or region of specialisation.

There are no prior language requirements for the International Studies component of this combined degree, except for programs within the Heritage major.

Arrangements for In-country Study

All students are required to complete four consecutive semesters of study of Language and Culture before proceeding to In-country Study. There are different classes available for students according to their level of language proficiency.

The Institute for International Studies makes arrangements for students to spend two semesters of In-country Study at an institution of higher education in a country of their major. The costs of tuition in host institutions overseas and travel between Sydney and the designated host institutions are borne by UTS except in cases where a scholarship has been awarded to the student with provision for these costs. Under those circumstances, the funds that would have otherwise been allocated towards the student's tuition and travel will be directed to support the In-country Study program in general. In most cases, the cost of living for the period of In-country Study will not exceed the cost of living away from home in Sydney. However, students should be aware that the cost of living in some countries – notably Japan – may be higher than in Sydney.

Course program

For details of International Studies subjects, students should refer to the Subject Descriptions section in this handbook.

Year 1

Autumn semester

31414	Information Systems	6cp
31415	Principles of Software Development A	6cp
31416	Computer Systems Architecture	6cp
31417	Computing Practice	6cp

Spring semester

31424	Systems Modelling	6cp
31425	Principles of Software Development B	6cp
31428	Quantitative Modelling	6cp
31429	Procedural Programming	6cp

Year 2

Autumn semester

31434	Database Design	6cp
50140	Comparative Social Change	8cp
971xxx	Language and Culture 1	8cp
3xxxx	Computing Science elective	6cp

Spring semester

31436	Systems Software and Networks	8cp
972xxx	Language and Culture 2	8cp
3xxxx	Computing Science elective	6cp

Year 3

Autumn semester

31444	Systems Design and Development	10cp
973xxx	Language and Culture 3	8cp
3xxxx	Computing Science elective	6cp

Spring semester

22615	Accounting Information Systems	6cp
974xxx	Language and Culture 4	8cp
976xxx	Contemporary Society	8cp

Year 4

Autumn semester

977xxx	In-country Study 1	24cp

Spring semester

978xxx	In-country Study 2	24cp

Year 5

Autumn semester

31455	Software Development Case Study	6cp
31698	Industrial Training (P/T)	—

Spring semester

31455	Software Development Case Study (cont.)	6cp
31698	Industrial Training (P/T)	—
31454	Project Management and the Professional	6cp

Year 6

Autumn semester

31464	Information Technology Planning and Design	6cp
31699	Industrial Training (P/T)	—
3xxxx	Computing Science elective	6cp

Spring semester

31699	Industrial Training (P/T)	—
3xxxx	Computing Science elective	12cp

Bachelor of Science in Computing Science/ Bachelor of Laws[1]

- ◆ *Course code: LL06*
- ◆ *UAC code: 609020*
- ◆ *Testamur titles: Bachelor of Science in Computing Science*
  Bachelor of Laws
- ◆ *Abbreviation: BSc LLB*
- ◆ *Course fee: HECS (local)*
  $6,500 per semester (international)

The BSc LLB is offered jointly with the Faculty of Law. The course is of five years' duration and is offered only on a full-time basis (although students will be expected to attend some evening lectures). The program will allow students the option of undertaking the professional program as part of their under-graduate studies.

The course will be submitted to the Australian Computer Society as satisfying the require-ments of the Society for admission at the professional level.

Students enrol with the Faculty of Law, and are required to complete a total of 240 credit points, 96 in Computing Science and 144 in Law. In addition, students must complete a period of Industrial Training before gradu-ation, ideally in a legal environment.

Students will be awarded **two** degrees and therefore will receive **two** testamurs on graduation. Students who elect not to complete the joint degree may be permitted to complete a Bachelor of Science in Computing Science or a Bachelor of Laws as a stand-alone degree, subject to certain conditions set down by the Faculty of Law.

The Faculty of Law administers the course. The current program is shown below. For full details of Law subjects, students should consult the 2001 handbook for the Faculty of Law. Inquiries should be directed to the Faculty of Law on (02) 9514 3444.

[1] The Diploma of Information Technology Professional Practice is yet to be introduced into this course and will be subject to approval.

Course program

Year 1

Autumn semester

31415	Principles of Software Development A	6cp
31417	Computing Practice	6cp
70105	Legal Research	4cp
70113	Legal Process and History	10cp

Spring semester

31425	Principles of Software Development B	6cp
31429	Procedural Programming	6cp
70211	Law of Contract	8cp
70217	Criminal Law	6cp

Year 2

Autumn semester

31414	Information Systems	6cp
31416	Computer Systems Architecture	6cp
70311	Law of Tort	8cp
70616	Federal Constitutional Law	8cp

Spring semester

31424	Systems Modelling	6cp
31428	Quantitative Modelling	6cp
70317	Real Property	8cp
70318	Personal Property	4cp

Year 3

Autumn semester

31434	Database Design	6cp
31436	Systems Software and Networks	8cp
70417	Corporate Law	8cp
70617	Administrative Law	8cp

Spring semester

31444	Systems Design and Development	10cp
70516	Equity and Trusts	8cp
76xxx	Law elective subject 1	6cp

Year 4

Autumn semester

31455	Software Development Case Study[1]	6cp
71005	Practice and Procedure	4cp
71216	Law of Evidence	6cp
76xxx	Law elective subject 2	6cp
76xxx	Law elective subject 3	6cp

Spring semester

31464	Information Technology Planning and Design[1]	6cp
31455	Software Development Case Study (cont.)[1]	6cp
71116	Remedies	6cp
76xxx	Law elective subject 4	6cp

Year 5

Autumn semester

| 31454 | Project Management and the Professional | 8cp |
| 31696 | Industrial Training | — |

Spring semester

	Practical Legal Training	24cp
	or	
	Four Law electives	24cp

[1] These subjects may be replaced by Computing Science electives with the approval of the Head of Department of Computing Sciences. Students choosing not to take 31455 Software Development Case Study will qualify for a Pass degree only.

Business and Computing Science (Double degree)

Bachelor of Business

♦ *Course codes: B01C (City campus); B01K (Kuring-gai campus)*
♦ *UAC code: 600010 (City – F/T)*
  600011 (City – P/T)
  600020 (Kuring-gai – F/T)
  600021 (Kuring-gai – P/T)
♦ *Testamur title: Bachelor of Business*
♦ *Abbreviation: BBus*
♦ *Course fee: HECS (local)[1]*

Bachelor of Science in Computing Science/ Diploma in Information Technology Professional Practice

♦ *Course code: MC12*
♦ *UAC code: 605000 (F/T); 605001 (P/T)*
♦ *Testamur title: Bachelor of Science in Computing Science*
  Diploma in Information Technology Professional Practice
♦ *Abbreviation: BSc DipITProfPrac*
♦ *Course fee: HECS (local)[1]*

Students initially enrol in the Bachelor of Business degree in the Faculty of Business and take the Programming and Design sub-major offered by the Faculty of Information Technology. On satisfactory completion of the Business degree and the Programming and Design sub-major, students may then apply for admission to the Bachelor of Science in Computing Science/Diploma in Information Technology Professional Practice degree. If admitted, students will receive exemptions for the computing core subjects they completed in the Programming and Design sub-major. They will also receive 24 credit points of exemptions for electives, the equivalent of a Business sub-major in the Computing Science degree.

Students considering this double degree should talk to an academic advisor in the Faculty of Information Technology before beginning the sub-major.

Full details of the Bachelor of Business degree are contained in the 2001 handbook for the Faculty of Business. For full details of the Bachelor of Science in Computing Science/ Diploma in Information Technology Professional Practice are detailed in this handbook.

Bachelor of Computing

♦ *Course code: MC06*
♦ *Testamur title: Bachelor of Computing*
♦ *Abbreviation: BComp*
♦ *Course fee: $7,000 per semester (international)[1]*

Bachelor of Computing/ Diploma in Information Technology Professional Practice

♦ *Course code: MC16*
♦ *Testamur title: Bachelor of Computing Diploma in Information Technology Professional Practice*
♦ *Abbreviation: BComp DipITProfPrac*
♦ *Course fee: $7,000 per semester, $1,700 total for DipITProfPrac (international)[1]*

The Bachelor of Computing is open only to students who do not have Australian-resident status. It is full-fee paying. It provides a three-year full-time course of academic study. Students may commence either semester. Its aims are to provide international students with a sound appropriate education in computing and information systems and to foster inter-national links for the Faculty of Information Technology.

The Diploma in Information Technology Professional Practice will be offered as an optional extra year between the second and third academic years, to enable those students who are able to obtain a suitable position in the IT industry the opportunity to benefit from the learning experiences associated with industrial training. The Diploma in Information Technology Professional Practice consists of two semesters of full-time work experience in the IT industry with four supporting academic subjects.

Selection of students

Students will apply through International Programs, but will be assessed by the Faculty. Students will be required to have at least the equivalent of a NSW HSC matriculation, and to meet or better the University's IELTS criteria.

Exemptions

Exemptions may be granted on the basis of recent academic study (within the last three

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[1] This course is not offered to international students.

[1] This course is not offered to local students.

years) at post-secondary level. Students must be able to demonstrate that the knowledge is current. Exemptions from core subjects may be granted where subjects successfully completed previously coincide with BComp subjects. Students are expected to apply for exemptions for which they believe they are eligible at the commencement of their first year of study. Exemptions are usually processed by the Faculty immediately.

Exemptions for holders of the Diploma in Information Technology from Insearch

Students entering the Bachelor of Computing who have graduated with a Credit average from the Diploma in Information Technology at Insearch will receive automatic exemptions from the following subjects:

31414	Information Systems	6cp
31509	Computer Fundamentals	6cp
31417	Computing Practice	6cp
31424	Systems Modelling	6cp
31425	Principles of Software Development B	6cp
31429	Procedural Programming	6cp
	and	
3xxxx	Elective(s)	12cp
	or	
31515	Introduction to Australian IT Industry	6cp
3xxxx	Elective	6cp

Students will be offered a test in English proficiency for academic purposes. Those able to demonstrate adequate proficiency (minimum score of 6.5 in the IELTS test) will be exempted from 31515 Introduction to Australian IT Industry.

Exemptions for holders of TAFE Associate Diplomas and Diplomas

Current TAFE courses operate at three levels: Level 3, Level 4, and Diploma. Level 3 forms the compulsory foundation for the other levels. Level 4 consists of a number of Specialist Groups. Students complete two Specialist Groups plus extra modules and a project to gain the Diploma. The required mixture of Specialist Groups and the Project area determine the name of the Diploma. Please refer to the entry under the Bachelor of Science in Computing Science/Diploma in Information Technology Professional Practice on page 37 for further details.

Students who have completed Level 4 or a Diploma will receive exemptions for the following subjects (which differ from those for the Bachelor of Science in Computing Science/Diploma in Information Technology Professional Practice), see the table below.

In addition, students who have completed a Diploma will be granted credit points for Unspecified CS/IS Electives to give a **total** of 30 credit points for the following courses:

- 3613 Diploma in Information Technology (Applications Programming)
- 3614 Diploma in Information Technology (Analyst/Programmer)
- 3615 Diploma in Information Technology (Business Systems).

Because it is less relevant to the BSc(CompSc), students in:

- 3612 Diploma in Information Technology (PC and Network Support)

will receive 12 credit points of Unspecified CS/IS Electives giving a total of 24 credit points of exemptions.

Note: The TAFE Specialist Group in Multimedia has yet to be assessed.

TAFE Specialist Group(s)		UTS Subject exemptions	
3602	PC Support	31509	Computing Fundamentals
	and		
3604	Network Support	31512	Networking 1
3605	3GL Programming	31917	Commercial Programming in Cobol
3606	4GL & Database Programming including Modules 3606F, 3606G and 3606J (or acceptable equivalents)	31434	Database Design
3607	C Programming	31429	Procedural Programming
3608	Object Programming	31860	Object-oriented Programming and C++
3609	Systems Analysis and Design	31414	Information Systems
	or		
3615	Diploma of Information Technology (Business Systems)		

Course program

It is likely that there will be some changes to the program in 2002.

Year 1

Semester 1

31515	Introduction to Australian IT Industry	6cp
31507	Australian IT Industry	6cp
31417	Computing Practice	6cp
31414	Information Systems	6cp

Semester 2

31424	Systems Modelling	6cp
31508	Programming Fundamentals	6cp
31509	Computer Fundamentals	6cp
31425	Principles of Software Development B	6cp

Year 2

Semester 3

31434	Database Design	6cp
31429	Procedural Programming	6cp
31510	Operating Systems	6cp
3xxxx	Elective 1	6cp

Semester 4

31511	Systems Design	6cp
31516	Networking Fundamentals	6cp
31428	Quantitative Modelling	6cp
3xxxx	Elective 2	6cp

Year 3

Semester 5

31454	Project Management and the Professional	6cp
22615	Accounting Information Systems	6cp
3xxxx	Elective[1]	
	or	
31514	Computing Theory[2]	6cp
3xxxx	Elective 3	6cp

Semester 6

31464	Information Technology Planning and Design	6cp
3xxxx	Elective[1]	
	or	
31514	Computing Theory[2]	6cp
31931	Software Quality Assurance	6cp
3xxxx	Elective 4	6cp

[1] These electives will be taken from the Departments of Computer Systems, Information Systems and/or Software Engineering. Students need to satisfy the prerequisites for these electives.

Alternatively, students may take a set of approved sub-majors from other departments and faculties. These have not been fully identified, but sub-majors such as International Finance or International Management are envisaged.

[2] The subject 31514 Computing Theory will only be offered in one semester each year.

Program for Bachelor of Computing applicants from Insearch

A total of 144 credit points is required to complete this program. This includes 48 credit points of exemptions.

Autumn semester start

Year 1

Autumn semester

31515	Introduction to Australian IT Industry[1]	6cp
31434	Australian IT Industry[2]	6cp
31508	Programming Fundamentals	6cp
31434	Database Design	6cp

Spring semester

31428	Quantitative Modelling	6cp
31510	Operating Systems	6cp
31511	Systems Design	6cp
31512	Networking 1	6cp

Year 2

Autumn semester

31454	Project Management and the Professional	6cp
22615	Accounting Information Systems	6cp
31514	Computing Theory	6cp
3xxxx	Elective	6cp

Spring semester

31464	Information Technology Planning and Design	6cp
31931	Software Quality Assurance	6cp
	IS/CS Elective[3]	6cp
3xxxx	Elective	6cp

Spring semester start

Year 1

Spring semester

31515	Introduction to Australian IT Industry[1]	6cp
31508	Programming Fundamentals	6cp
31428	Quantitative Modelling	6cp
31510	Operating Systems	6cp

Autumn semester

31434	Australian IT Industry[2]	6cp
31434	Database Design	6cp
31511	Systems Design	6cp
22615	Accounting Information Systems	6cp

Year 2

Spring semester

31454	Project Management and the Professional (evening)	6cp
31512	Networking 1	6cp
	IS/CS Elective[3]	6cp
3xxxx	Elective	6cp

Year 2 (cont.)

Autumn semester

31464	Information Technology Planning and Design (evening)	6cp
31931	Software Quality Assurance	6cp
31514	Computing Theory	6cp
3xxxx	Elective	6cp

[1] Students who intend to enrol in this subject will be offered a test in English proficiency for academic purposes. The results of this test will determine the appropriate program:

- those able to demonstrate adequate proficiency will be exempted from 31515 Introduction to Australian IT Industry – they will enrol in an Elective instead of 31515 Introduction to Australian IT Industry

- those able to demonstrate sufficient proficiency will enrol in 31515 Introduction to Australian IT Industry – they will undertake a 'standard' program

- those unable to demonstrate sufficient proficiency will be strongly recommended to undertake an intensive English class before enrolling in 31515 Introduction to Australian IT Industry – they will undertake a 'standard' program of 18 credit points.

[2] 31507 Australian IT Industry covers topics such as Australian culture and the local IT industry. Students who have adequate preparation before they start the course may be allowed to substitute another subject.

[3] The IS/CS Elective will be chosen from:

- 31443 Distributed Databases and Client/Server Computing

- 31513 Networking 2

- 31777 Human Computer Interaction

- 31922 Object-oriented Methodologies.

Note: The other electives may be taken from any of the computing electives offered by the Faculty of Information Technology (and may include any of the subjects listed in 3 above not taken as the IS/CS Elective) or one of a small set of approved subjects from other Faculties, e.g. subjects in International Finance or International Management.

Bachelor of Computing/ Bachelor of Arts in International Studies

- ◆ *Course code: MC07*
- ◆ *Testamur title: Bachelor of Computing Bachelor of Arts in International Studies*
- ◆ *Abbreviation: BComp BA*
- ◆ *Course fee: $7,000 per semester (international)[1]*

This course is available only to international students. It combines the Bachelor of Computing with the University's Bachelor of Arts in International Studies. Students follow the Australia and the Asia–Pacific Region major in the BA in International Studies. For details about the international studies component, see the Bachelor of Science in Computing Science/ Bachelor of Arts in International Studies entry. The details of the Australia and the Asia-Pacific Region major can be found in the 2001 handbook for the Institute for International Studies.

[1] This course is not offered to local students.

MATHEMATICAL SCIENCES

Subject exemptions

Students undertaking courses offered by the Department and who have successfully completed subjects at other tertiary institutions, may be eligible for exemptions where the subjects previously studied are deemed to be equivalent to those specified for the current course. Eligibility is determined by the Faculty and follows University Rule 2.28 on Advanced Standing. The rule is given in full in the *UTS Calendar 2001* and online at:

www.uts.edu.au/div/publications/policies/rules/contents.html

Students should apply for exemptions at enrolment or immediately following enrolment. Students applying for exemptions should complete all details on the Application for Subject Exemption form which is available from the UTS Student Info & Admin Centre (level 4, Building 1). Original transcripts must be sighted or certified copies attached to support the application. A copy of the other institution's handbook or relevant subject syllabuses must be produced on request. The form and supporting materials should then be taken to the Exemptions Coordinator. It is preferable that such requests be made in person should further clarification be required. Further information can be obtained from the Faculty Office on (02) 9514 1803.

Bachelor of Science in Mathematics

- ◆ *Course code: MM01*
- ◆ *UAC code: 605020 (F/T); 605021 (P/T)*
- ◆ *Testamur title: Bachelor of Science in Mathematics*
- ◆ *Abbreviation: BSc*
- ◆ *Course fee: HECS (local)*
  $6,000 per semester (international)

This degree aims to prepare students for employment in industry, commerce and government and to provide the foundation for higher studies in mathematics. It provides great flexibility by allowing students to follow a course of study which best suits their interests and aspirations. It aims to help students acquire sufficient experience and understanding in a broad range of mathematical disciplines to enable them to apply mathematical and computing techniques to industrial and commercial problems.

Structure of the degree

The course consists of subjects worth a total of 144 credit points and may be attempted on either a full-time or a part-time basis. The standard full-time load is 24 credit points per semester (typically, four subjects each worth 6 credit points) and the standard part-time load is 12 credit points per semester (typically, two subjects both worth 6 credit points). Most mathematics subjects worth 6 credit points involve four hours of class contact per week (typically, three hours of lectures and one hour of tutorial), although some first-year subjects have a higher contact load of six hours. Some subjects have additional laboratory hours.

Part-time students will be accommodated by the provision of evening classes for most subjects. It is expected that part-time students will be able to attend classes on one afternoon and three evenings per week during the first two years of the course, and on one afternoon and two evenings per week during later years.

As a general rule, for any given subject, it is wise to devote to home study the same number of hours per week as are allocated to lectures and tutorials in the case of first-year subjects, and twice the number of hours associated with lectures and tutorials per week for more senior subjects.

Details of individual subjects can be found in the Subject Descriptions section in this handbook.

The basic structure of the Pass degree is as follows:

The core

This provides a thorough grounding in the elements of mathematics, statistics, operations research and computing, and introduces their applications. This component occupies 84 credit points of the Pass degree and is taught predominantly during the first two years of the full-time program.

The major

This occupies half of Year 3 of the full-time course (or Years 5 and 6 of the part-time course) and may be taken in either mathematics, statistics or operations research. This framework provides for specialised study of a particular area.

The Operations Research major develops mathematical methods which may be applied to problems involving planning and decision making. Production scheduling and investment analysis are just two examples of the areas where these methods are applicable.

Many problems in the modern world, in areas as diverse as market research and environmental assessment, give rise to large amounts of data. The Statistics major develops the tools required for the collection and analysis of such data, and studies their application to a variety of problems.

The Mathematics major develops further geometric, analytic and algebraic tools which underlie solutions to problems in more advanced contexts. These tools are applied in a variety of complex and practical situations. Demand for the Mathematics major is not always sufficient for it to be offered.

Electives

Electives total 36 credit points and are chosen by students to strengthen their understanding of areas in which they are interested. At least 24 credit points must be taken as a coherent sequence of subjects, usually an approved submajor. The remaining 12 credit points may comprise subjects from any faculty of the University, subject to certain restrictions.

Grading of awards

All students eligible to receive the Bachelor of Science in Mathematics are awarded the degree at the same level.

Honours degree

Students contemplating taking Honours are advised to consult the Program Leader for Mathematics Honours or the Program Leader for the Bachelor of Science in Mathematics, upon completing the core of the Bachelor of Science in Mathematics degree. Refer to pages 22 and 23 for contact details.

Course program

Full-time program

Year 1

Autumn semester

35100	Mathematical Practice	6cp
35101	Mathematics 1	6cp
35151	Statistics 1	6cp
35170	Introduction to Computing	6cp

Spring semester

35102	Mathematics 2	6cp
35140	Operations Research Modelling	6cp
3xxxx	Electives	approx. 12cp

Year 2

Autumn semester

35111	Discrete Mathematics	6cp
35212	Linear Algebra	6cp
35231	Differential Equations	6cp
3xxxx	Electives	approx. 6cp

Spring semester

35232	Advanced Calculus	6cp
35241	Optimisation 1	6cp
35252	Statistics 2	6cp
35281	Numerical Analysis 1	6cp

Year 3

Autumn semester

35321	Analysis 1	6cp
3xxxx	Major 1	6cp
3xxxx	Major 2	6cp
3xxxx	Electives	approx. 6cp

Spring semester

3xxxx	Major 3	6cp
3xxxx	Major 4	6cp
3xxxx	Electives	approx. 12cp

Part-time program

Year 1

Autumn semester

35100	Mathematical Practice	6cp
35140	Operations Research Modelling	6cp

Spring semester

35101	Mathematics 1	6cp
35151	Statistics 1	6cp

Year 2

Autumn semester

35102	Mathematics 2	6cp
3xxxx	Electives	approx. 6cp

Spring semester

35170	Introduction to Computing	6cp
35111	Discrete Mathematics	6cp

Year 3

Autumn semester

35252	Statistics 2	6cp
3xxxx	Electives	approx. 6cp

Spring semester

35212	Linear Algebra	6cp
35231	Differential Equations	6cp

Year 4

Autumn semester

35241	Optimisation 1	6cp
3xxxx	Electives	approx. 6cp

Spring semester

35232	Advanced Calculus	6cp
3xxxx	Electives	approx. 6cp

Year 5

Autumn semester

35281	Numerical Analysis 1	6cp
3xxxx	Major 1	6cp

Spring semester

35321	Analysis 1	6cp
3xxxx	Major 2	6cp

Year 6

Autumn semester

3xxxx	Major 3	6cp
3xxxx	Electives	approx. 6cp

Spring semester

3xxxx	Major 4	6cp
3xxxx	Electives	approx. 6cp

Major areas of study

Students must complete at least one of the majors in the areas of Statistics, Operations Research or Mathematics.

Mathematics major

Two sequences, one in Pure Mathematics and one in Applied Mathematics, are offered, although it is not expected that all subjects in both sequences would be taught in any one year. Students may be required to choose a program combining subjects from both sequences. Students interested in the Mathematics major should discuss their enrolment with the Program Leader for the Bachelor of Science in Mathematics, late in the year preceding their intended enrolment. The Mathematics major may not be offered if there is insufficient demand.

Pure Mathematics sequence

Full-time program Year 3 and part-time program Years 5 and 6

Autumn semester

35313	Pure Mathematics 3A	6cp
35335	Mathematical Methods	6cp

Spring semester

35314	Pure Mathematics 3B	6cp
35322	Analysis 2	6cp

Applied Mathematics sequence

Full-time program Year 3 and part-time program Years 5 and 6

Autumn semester

35333	Applied Mathematics 3A	6cp
35335	Mathematical Methods	6cp

Spring semester

35334	Applied Mathematics 3B	6cp
35382	Numerical Analysis 2	6cp

Statistics major

Full-time program

Year 3

Autumn semester

35356	Design and Analysis of Experiments	6cp
35353	Regression Analysis	6cp

Spring semester

35355	Quality Control	6cp
35361	Probability and Stochastic Processes	6cp

Part-time program

Year 5

Autumn semester

3xxxx	Core subject	
35356	Design and Analysis of Experiments	6cp

Spring semester

35353	Regression Analysis	6cp
3xxxx	Electives	approx. 6cp

Year 6

Autumn semester

35361	Probability and Stochastic Processes	6cp
3xxxx	Electives	approx. 6cp

Spring semester

35355	Quality Control	6cp
3xxxx	Electives	approx. 6cp

Operations Research major

Full-time program

Year 3

Autumn semester

35342	Optimisation 2	6cp
35363	Simulation Modelling	6cp

Spring semester

35340	Operations Research Practice	6cp
35361	Probability and Stochastic Processes	6cp

Part-time program

Year 5

Autumn semester

3xxxx	Core subject	
35342	Optimisation 2	6cp

Spring semester

35361	Probability and Stochastic Processes	6cp
3xxxx	Electives	approx. 6cp

Year 6

Autumn semester

35363	Simulation Modelling	6cp
3xxxx	Electives	approx. 6cp

Spring semester

35340	Operations Research Practice	6cp
3xxxx	Electives	approx. 6cp

Electives

Electives occupy 36 credit points of the BSc in Mathematics degree and may be chosen by students to strengthen or develop their knowledge in an area of their choice. Electives are split into **free electives** and **structured electives**.

Free electives

Free electives, whose total weight cannot exceed 12 credit points, provide students with an opportunity to select subjects which accommodate their various interests and needs in a less formal manner than is the case for structured electives. These subjects can be taken from any faculty within the University, or from another university if the subject area is not represented at UTS.

Subjects offered by the Department of Mathematical Sciences and not included in a student's chosen major may also be taken as free electives. In particular, the following subjects may be offered, subject to demand:

35106	Mathematics in Sport	6cp
35205	History of Mathematics	6cp
35254	Health Statistics	6cp
35292–6	Project	2–6cp
35344	Network Optimisation	6cp
35384	Financial Modelling	6cp
35391	Seminar (Mathematics)	6cp
35392	Seminar (Operations Research)	6cp
35393	Seminar (Statistics)	6cp
35394	Seminar (Computing)	6cp

Note: The subject 35384 Financial Modelling is not available to students taking the Operations Research major or the Finance sub-major.

Languages and other subjects from the Faculties of Humanities and Social Sciences, Science and Business are also common choices for free electives. The choice of free electives must be discussed with academic advisers and must be approved by the Electives Coordinator, who will ensure that no subjects specifically proscribed by the Department are included. The proscribed list includes subjects of a mathematical nature which are taught elsewhere in the University, and which provide coverage of material that is already incorporated in subjects offered by this Department.

Structured electives

At least 24 credit points must be taken as a coherent sequence of subjects. This provides an opportunity for students to systematically develop knowledge of some discipline of their choice. The possibilities are:

- a second major within the Bachelor of Science in Mathematics degree;
- the Computing sub-major offered by the Faculty;
- existing majors or sub-majors within the University, that have been approved by the Faculty as appropriate for use as structured electives;
- subject sequences which provide for the systematic development of a topic but which are not recognised formally as either a major or sub-major. These sequences must be negotiated between the students and the Electives Coordinator.

Computing sub-major

31508	Programming Fundamentals	6cp
31509	Computer Fundamentals	6cp
	and any two of	
31516	Networking Fundamentals	6cp
31414	Information Systems	6cp
31424	Systems Modelling	6cp
31434	Database Design	6cp

Sub-majors offered by other faculties

Students may elect to do a sub-major offered by another faculty. It is necessary to discuss the choice with the Electives Coordinator in the Department of Mathematical Sciences, and to obtain appropriate approval from the faculty concerned. The following are possible sub-majors. In all cases, full details are available from the Faculty Office.

Aboriginal Studies sub-major

The Faculty of Education offers a range of Aboriginal Studies subjects that may be taken as a sub-major, or as elective subjects, as appropriate, within any undergraduate course.

The sub-major provides Aboriginal and non-Aboriginal students with an opportunity to study subjects that are culturally appropriate to an understanding of Aboriginal culture, history and social/political structures. These initial studies serve as a basis for applying critical analysis skills to Aboriginal and non-Aboriginal perspectives on issues and trends which affect the cultural and social integrity of Aboriginal peoples. Consideration is also given to other indigenous people, including Torres Strait Islanders.

015110	Aboriginal Cultures and Philosophies	8cp
015395	Aboriginal Social and Political History	8cp
015168	The Politics of Aboriginal History	8cp

Finance sub-major

22107	Accounting for Business	6cp
25115	Economics for Business	6cp
25300	Fundamentals of Business Finance	6cp
25905	Capital Budgeting and Valuations (Honours)	6cp
25906	Investment Analysis (Honours)	6cp
25620	Derivative Securities	6cp

This sequence will exhaust all elective options for students taking this sub-major.

Physics sub-majors

The Department of Applied Physics offers two sub-majors, one in Physics and one in Electronics. Both contain two compulsory subjects. The remaining subjects, with a value totalling eight credit points (or more), must be chosen from a selection of subjects appropriate to the field.

Bachelor of Science (Honours) in Mathematics

- ◆ *Course code: MM02*
- ◆ *Testamur title: Bachelor of Science (Honours) in Mathematics*   .
- ◆ *Abbreviation: BSc(Hons)*
- ◆ *Course fee: HECS (local)*
  $6,000 per semester (international)

The Honours degree provides the opportunity for students to develop their level of competence in the area of mathematics chosen as their major in the BSc in Mathematics degree. The Honours degree is offered over one year on a full-time basis, or two years on a part-time basis, and consists of advanced coursework (comprising two-thirds of the program) and a thesis. This thesis allows students to use the expertise developed by their coursework in an area of application. Students who complete the Honours degree will accordingly be well prepared to enter the workforce at a high level or to undertake graduate studies.

The precise selection of subjects to be offered in any particular year will depend on the interests of students, and the interests and availability of staff. Students should consult the Program Leader for Mathematics (Honours), who will assist them in planning their program. This is of particular importance for part-time students since few subjects will be offered at night.

Admission to the Honours degree will be assessed individually according to the following criteria:

- Students who are eligible to graduate from the BSc in Mathematics degree with an average mark of 65 or more in Year 2 (full-time) of the core and in their chosen major, will be eligible for entry to the Honours degree.

- Students who have obtained qualifications equivalent to the BSc in Mathematics degree will, upon application, be considered for entry by the Head of the Department of Mathematical Sciences, on the basis of assessed potential to complete the Honours degree.

The Honours program will require the completion of subjects worth 48 credit points in one year of full-time study, or two years of part-time study. Honours will be offered in the Mathematics, Statistics and Operations Research strands, although some strands may not be offered in a given year. The program

will consist of eight coursework subjects, each of four credit points, and a thesis of 16 credit points.

Students contemplating taking Honours are advised to consult the Program Leader for Mathematics (Honours) or the Program Leader for the Bachelor of Science in Mathematics, on completing the core of the BSc in Mathematics degree. This will enable them to plan studies for the following years and make decisions at an early stage which will not close off options that otherwise would be available to them. Usually students decide to apply for Honours before the completion of the BSc in Mathematics but, under the structure of the course, entry to Honours is possible even if the decision to do so is delayed until completion of the BSc in Mathematics.

The Honours degree consists of:

- 24 credit points of Honours-level mathematics subjects (numbered as 354xx). These consist of six 4-credit-point subjects, at least five of which must be taken in the major area of study.

- A thesis consisting of a research project of 16 credit points, assessed by a written report and a seminar. A supervisor will be appointed to monitor the progress of the thesis and to advise on its preparation. Full-time students must enrol in the subject 35498 Thesis (Honours) in the first semester of their program. Part-time students must enrol in this subject at the beginning of their second year.

- 8 credit points consisting of the subjects 35496 Thesis Seminar A and 35497 Thesis Seminar B. These are reading courses designed to complement the research project or to provide additional foundation for graduate study in the area of the project. The thesis supervisor will be responsible for designing and administering these subjects. In certain circumstances, these subjects may be replaced by Honours Seminar subjects.

Subjects offered in the various strands are as follows.

Mathematics strand

35418	Analytic Number Theory	4cp
35419	Advanced Algebra	4cp
35427	Functional Analysis	4cp
35428	Convexity and Optimisation	4cp
35436	Advanced Mathematical Methods	4cp
35437	Partial Differential Equations	4cp
35438	Nonlinear Dynamical Systems	4cp
35466	Advanced Stochastic Processes	4cp

Operations Research strand

35443	Advanced Mathematical Programming	4cp
35446	Scheduling Theory	4cp
35447	Discrete Optimisation	4cp
35448	Dynamic Optimisation	4cp
35466	Advanced Stochastic Processes	4cp
35485	Advanced Financial Modelling	4cp
35486	Optimal Control 1	4cp
35487	Optimal Control 2	4cp

Statistics strand

35456	Nonlinear Statistical Models	4cp
35457	Multivariate Statistics	4cp
35458	Loglinear Modelling	4cp
35459	Linear Models and Experimental Design	4cp
35466	Advanced Stochastic Processes	4cp
35467	Time Series Analysis	4cp
35469	Statistical Consulting	4cp

Each strand is augmented by two seminar subjects, 35491 Honours Seminar A and 35492 Honours Seminar B.

These strands may be amended as areas of significance and interest in the Department change with time.

Grading of awards

The assessment of students' results will take into account the Honours level coursework subjects, the thesis and the seminar. Honours at the grades of First Class, Second Class (Division 1), Second Class (Division 2) and Third Class will be awarded for the successful completion of the course.

Bachelor of Science in Mathematics/Bachelor of Arts in International Studies

- ◆ *Course code: MM05*
- ◆ *UAC code: 609210*
- ◆ *Testamur title: Bachelor of Science in Mathematics*
  Bachelor of Arts in International Studies
- ◆ *Abbreviation: BSc BA*
- ◆ *Course fee: HECS (local)*
  $6,000 per semester (international)

This course combines the Bachelor of Science in Mathematics with the Bachelor of Arts in International Studies. Mathematics is integrated with a major in the language and culture of another country. Students spend the fourth year of study at a university overseas. Owing to timetabling constraints, the combined degree is only offered on a full-time basis over five years.

Studies in Mathematical Sciences

The Mathematical Sciences component of the combined degree aims to provide students with a broad education in the field, to prepare graduates for professional practice in industry, commerce and government, and to provide the foundation for graduate studies and research. It provides great flexibility by allowing students to follow a course of study that best suits their interests and aspirations. It aims to help the students acquire sufficient experience and understanding in a broad range of mathematical disciplines to enable them to apply mathematical and computing techniques to industrial and commercial problems.

For further information, see the course outline for the Bachelor of Science in Mathematics in this handbook.

An Honours degree in Mathematics (with strands in Statistics, Operations Research and Mathematics), requiring an additional year of full-time study, is also available.

International Studies

The Bachelor of Arts in International Studies is designed to increase awareness and understanding of the non-English-speaking world.

In the International Studies Program, students focus on one of the following countries or majors: Argentina, Chile, China, France, Germany, Indonesia, Italy, Japan, Malaysia, Mexico, Russia, Spain and Thailand. The availability of the Russian major is currently being reviewed. There is also a Heritage Major that permits students with previous exposure to a language and culture to continue their study in countries such as Greece, Hong Kong, Korea, Poland, Taiwan and Vietnam.

Australia and the Asia-Pacific is only available as a major to international students. International students may access one of the other majors offered provided that the country they choose as their major is able to grant them a visa to study there. This would need to be determined prior to commencing subjects within the International Studies major. If a visa cannot be granted, then it will not be possible to undertake the chosen major.

Course structure

The structure of the five-year course in Mathematical Sciences and International Studies is derived from the combination of the Bachelor of Science in Mathematics with the Bachelor of Arts in International Studies.

All arrangements currently in force for both the Bachelor of Science in Mathematics and the Bachelor of Arts in International Studies apply equally to the combined degree programs.

To graduate, a student is required to have completed 240 credit points: 144 credit points in Mathematics and 96 credit points in International Studies.

The Mathematics component of the combined degree is structured in three distinct sections: core studies, a major in an area of the mathematical sciences, and an elective component, precisely as for the Bachelor of Science in Mathematics. The major is taken in the final (fifth) year of study.

The Bachelor of Arts in International Studies requires undergraduates to study a major – a region or country of specialisation – over a minimum of three years. Students study language and culture for at least two years in Sydney, and this is followed by a period of study overseas.

Students are admitted to the International Studies program with no guarantee of entry to a specific major, though every effort is made to meet student preferences.

Each of the specialisations within the International Studies program is 96 credit points, and includes 32 credit points (four 8-credit-point subjects) of instruction in an appropriate Language and Culture; 8 credit

points of study in Comparative Social Change; 8 credit points of study in Contemporary Society; and 48 credit points (two semesters) of study at a university or institution of higher education in the country or region of specialisation.

There are no prior language requirements for the International Studies component of this combined degree, except for programs within the Heritage major.

Arrangements for In-country Study

All students are required to complete four consecutive semesters of study of Language and Culture before proceeding to In-country Study. There are different classes available for students according to their level of language proficiency.

The Institute for International Studies makes arrangements for students to spend two semesters of In-country Study at an institution of higher education in a country of their major. The costs of tuition in host institutions are borne by UTS except in cases where a scholarship has been awarded to the student with provision for these costs. Under those circumstances, the funds that would have otherwise been allocated towards the student's tuition and travel will be directed to support the In-country Study program in general. In most cases, the cost of living for the period of In-country Study will not exceed the cost of living away from home in Sydney. However, students should be aware that the cost of living in some countries – notably Japan – may be higher than in Sydney.

Course program

Year 1

Autumn semester

35100	Mathematical Practice	6cp
35101	Mathematics 1	6cp
35151	Statistics 1	6cp
35170	Introduction to Computing	6cp

Spring semester

35102	Mathematics 2	6cp
35140	Operations Research Modelling	6cp
3xxxx	Electives	12cp

Year 2

Autumn semester

35212	Linear Algebra	6cp
35231	Differential Equations	6cp
971xxx	Language and Culture 1	8cp

Spring semester

35241	Optimisation 1	6cp
35252	Statistics 2	6cp
35281	Numerical Analysis 1	6cp
972xxx	Language and Culture 2	8cp

Year 3

Autumn semester

35111	Discrete Mathematics	6cp
50140	Comparative Social Change	8cp
973xxx	Language and Culture 3	8cp
3xxxx	Elective	6cp

Spring semester

35232	Advanced Calculus	6cp
974xxx	Language and Culture 4	8cp
976xxx	Contemporary Society	8cp

Year 4

Autumn semester

| 977xxx | In-country Study 1 | 24cp |

Spring semester

| 978xxx | In-country Study 2 | 24cp |

Year 5

Autumn semester

35321	Analysis 1	6cp
353xx	Mathematics Major 1	6cp
353xx	Mathematics Major 2	6cp
3xxxx	Electives	12cp

Spring semester

353xx	Mathematics Major 3	6cp
353xx	Mathematics Major 4	6cp
3xxxx	Electives	12cp

Majors

The program for each of the majors corresponds precisely with that in the Bachelor of Science in Mathematics.

Bachelor of Mathematics and Finance

- ◆ *Course code: MM03*
- ◆ *UAC code: 609040 (F/T); 609041 (P/T)*
- ◆ *Testamur title: Bachelor of Mathematics and Finance*
- ◆ *Abbreviation: BMathFin*
- ◆ *Course fee: HECS (local)*
  $6,000 per semester (international)

The years since deregulation of the Australian financial system have witnessed many sweeping changes and a considerable increase in the financial and economic activity of many Australian corporations. During this same period there has been an increasing use by major financial institutions of the sophisticated quantitative techniques that have been developed since the early 1970s. As a consequence, there is a demand for a new type of graduate trained in both mathematics and finance.

To meet this need, the Bachelor of Mathematics and Finance degree is offered jointly by the Department of Mathematical Sciences and the School of Finance and Economics.

Students graduating from the BMathFin will have undertaken an integrated sequence of subjects in mathematics, statistics, finance, economics, accounting, and computing, and will therefore have sound training in both the traditional theory of finance and the mathematical aspects of modern portfolio management techniques. As a result, graduates should find interesting and rewarding employment in major financial institutions such as merchant banks, insurance companies and government instrumentalities.

The Bachelor of Mathematics and Finance is offered as a Pass degree, with an additional year for an Honours degree.

The Pass degree is offered both as a full-time course over three years and as a part-time course over six years. In the first four years of the course, part-time students will be expected to be able to attend classes on one afternoon and two or three evenings per week. The final two years may require attendance at morning classes because some subjects, which form parts of other degrees, are not offered at night. Programs will be arranged individually for part-time students to spread the eight subjects of Year 3 of the full-time course over two years.

Grading of awards

All students eligible to receive the Bachelor of Mathematics and Finance are awarded the degree at the same level.

Course program

Full-time program

Year 1

Autumn semester

22107	Accounting for Business	6cp
25115	Economics for Business	6cp
35101	Mathematics 1	6cp
35151	Statistics 1	6cp

Spring semester

79203	Business Law and Ethics	6cp
25300	Fundamentals of Business Finance	6cp
35102	Mathematics 2	6cp
35140	Operations Research Modelling	6cp

Year 2

Autumn semester

35111	Discrete Mathematics	6cp
35212	Linear Algebra	6cp
35231	Differential Equations	6cp
35170	Introduction to Computing	6cp

Spring semester

25905	Capital Budgeting and Valuation (Honours)	6cp
25410	Corporate Financial Analysis	6cp
35252	Statistics 2	6cp
35241	Optimisation 1	6cp

Year 3

Autumn semester

25621	Financing Decisions and Capital Market Theory	6cp
35321	Analysis 1	6cp
35353	Regression Analysis	6cp
25906	Investment Analysis (Honours)	6cp

Spring semester

25620	Derivative Securities	6cp
25606	Financial Time Series	6cp
35361	Probability and Stochastic Processes	6cp
35281	Numerical Analysis 1[1]	6cp
	or	
35322	Analysis 2[1]	6cp

[1] Students not intending to proceed to Honours must take the subjects 35281 Numerical Analysis 1 in their Year 3 program. Students intending to undertake the Honours degree must include 35322 Analysis 2 in their Year 3 program.

Part-time program

Year 1

Autumn semester

22107	Accounting for Business	6cp
35140	Operations Research Modelling	6cp

Spring semester

35101	Mathematics 1	6cp
35151	Statistics 1	6cp

Year 2

Autumn semester

25115	Economics for Business	6cp
35102	Mathematics 2	6cp

Spring semester

35111	Discrete Mathematics	6cp
35170	Introduction to Computing	6cp

Year 3

Autumn semester

25300	Fundamentals of Business Finance	6cp
35241	Optimisation 1	6cp

Spring semester

25905	Capital Budgeting and Valuation (Honours)	6cp
35212	Linear Algebra	6cp

Year 4

Autumn semester

25906	Investment Analysis (Honours)	6cp
35252	Statistics 2	6cp

Spring semester

25410	Corporate Financial Analysis	6cp
35231	Differential Equations	6cp

Year 5

Autumn semester

25620	Derivative Securities	6cp
79203	Business Law and Ethics	6cp

Spring semester

35321	Analysis 1	6cp
35353	Regression Analysis	6cp

Year 6

Autumn semester

25621	Financing Decisions and Capital Market Theory	6cp
35361	Probability and Stochastic Processes	6cp

Spring semester

25606	Financial Time Series	6cp
35281	Numerical Analysis 1[1]	6cp
	or	
35322	Analysis 2[1]	6cp

[1] Students not intending to proceed to Honours must take the subjects 35281 Numerical Analysis 1 in their Year 6 program. Students intending to undertake the Honours degree must include 35322 Analysis 2 in their Year 6 program.

Bachelor of Mathematics and Finance (Honours)

- ◆ *Course code: MM04*
- ◆ *Testamur title: Bachelor of Mathematics and Finance (Honours)*
- ◆ *Abbreviation: BMathFin(Hons)*
- ◆ *Course fee: HECS (local)*
  $6,000 per semester (international)

The Bachelor of Mathematics and Finance degree (Honours) requires an additional year of advanced study. Honours degree graduates will be particularly sought after and their additional skills will enable them to compete for high-entry-level jobs in the banking sector. It is expected that most students will opt to undertake this additional year.

Admission to the Honours degree will be assessed individually according to the following criteria:

- Students who are eligible to graduate from the BMathFin degree at UTS with an average mark of 65 or more over all subjects in Years 2 and 3 (full-time) will be eligible for entry to the Honours degree, subject to the approval of the Head of the Department of Mathematical Sciences and the Head of the School of Finance and Economics.

- Students who have obtained qualifications equivalent to the BMathFin degree will be considered for entry, upon application, by the Heads of the participating Department and School on the basis of their assessed potential to complete the Honours degree.

The Honours degree will require completion of subjects worth 48 credit points over one year of full-time study. The year consists of coursework subjects of an advanced nature in mathematics, statistics and finance, together with a substantial project. The project will involve a major investigation of some area of finance, and will provide students with the opportunity to apply the skills developed in their coursework. The project will be assessed on the basis of a thesis and a seminar presented to the staff of the Department and the School.

Grading of awards

The assessment of students' results will take into account the Honours level coursework subjects, the thesis and the seminar. Honours at the grades of First Class, Second Class (Division 1), Second Class (Division 2) and Third Class will be awarded for the successful completion of the course.

Course program

Listed below is the course program for the BMathFin(Hons) degree.

Year 4

Autumn semester

25921	Theory of Financial Decision Making	6cp
35438	Nonlinear Dynamical Systems	4cp
35467	Time Series Analysis	4cp
35466	Advanced Stochastic Processes	4cp
35486	Optimal Control 1	4cp

Spring semester

25923	Derivative Security Pricing	6cp
25910	Thesis	12cp
35456	Nonlinear Statistical Models	4cp
35487	Optimal Control 2	4cp

Note: Students are advised to commence preliminary work on their thesis in Autumn semester. The topic and adviser should be chosen and preliminary reading undertaken.

Bachelor of Mathematics and Finance/Bachelor of Arts in International Studies

- ◆ Course code: MM06
- ◆ UAC code: 609220
- ◆ Testamur title: Bachelor of Mathematics and Finance
  Bachelor of Arts in International Studies
- ◆ Abbreviation: BMathFin BA
- ◆ Course fee: HECS (local)[1]

This course combines the Bachelor of Mathematics and Finance with the Bachelor of Arts in International Studies. Studies in mathematics and finance are integrated with a major in the language and culture of another country. Students spend the fourth year of study at a university overseas. Because of timetabling constraints, the combined degree is available only on a full-time basis over five years.

Studies in Mathematics and Finance

Students graduating from this degree will have undertaken an integrated sequence of study in mathematics, statistics, finance, economics, accounting and computing, and thus will have sound training in both the traditional theory of finance and the mathematical aspects of modern portfolio management techniques. With such skills, graduates should find interesting and rewarding employment in major financial institutions such as banks, insurance companies and government instrumentalities.

For further information, see the course outline for the Bachelor of Mathematics and Finance in this handbook.

The Mathematics and Finance components of the course occupy three full-time years. An Honours degree, leading to the qualification of BMathFin(Hons) and requiring an additional year of full-time study, is also available.

International Studies

The Bachelor of Arts in International Studies is designed to increase awareness and understanding of the non-English-speaking world.

In the International Studies Program, students focus on one of the following countries or majors: Argentina, Chile, China, France, Germany, Indonesia, Italy, Japan, Malaysia, Mexico, Russia, Spain and Thailand. The avail-

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[1] This course is not offered to international students.

ability of the Russian major is currently being reviewed. There is also a Heritage Major that permits students with previous exposure to a language and culture to continue their study in countries such as Greece, Hong Kong, Korea, Poland, Taiwan and Vietnam.

Australia and the Asia-Pacific is only available as a major to international students. International students may access one of the other majors offered provided that the country they choose as their major is able to grant them a visa to study there. This would need to be determined prior to commencing subjects within the International Studies major. If a visa cannot be granted, then it will not be possible to undertake the chosen major.

Course structure

The structure of the five-year course in Mathematics and Finance and International Studies is derived from the combination of the Bachelor of Mathematics and Finance with the Bachelor of Arts in International Studies.

All arrangements in force for both the Bachelor of Mathematics and Finance and the Bachelor of Arts in International Studies apply equally to the combined degree programs.

To graduate, a student is required to have completed 240 credit points: 144 credit points in Mathematics and Finance and 96 credit points in International Studies.

The Mathematics and Finance components of the course include an integrated sequence of subjects in mathematics, statistics, finance, economics, accounting and computing.

The Bachelor of Arts in International Studies requires undergraduates to study a major – a region or country of specialisation – over a minimum of three years. Students study language and culture for at least two years in Sydney, and this is followed by a period of study overseas.

Students are admitted to the International Studies program with no guarantee of entry to a specific major, though every effort is made to meet student preferences.

Each of the specialisations within the International Studies program is 96 credit points, and includes 32 credit points (four 8-credit-point subjects) of instruction in an appropriate Language and Culture; 8 credit points of study of Comparative Social Change; 8 credit points of study of Contemporary Society; and 48 credit points (two semesters) of study at a university or institution of higher education in the country or region of specialisation.

There are no prior language requirements for the International Studies component of this degree, except for programs within the Heritage major.

Arrangements for In-country Study

All students are required to complete four consecutive semesters of study of Language and Culture before proceeding to In-country Study at an institution of higher education in a country of their major.

The costs of tuition in host institutions overseas and travel between Sydney and the designated host institution are borne by UTS except in cases where a scholarship has been awarded to the student with provision for these costs. Under those circumstances, the funds would have otherwise been allocated towards the student's tuition and travel will be directed to support the In-country Study program in general. In most cases, the cost of living for the period of In-country Study will not exceed the cost of living away from home in Sydney. However, students should be aware that the cost of living in some countries – notably Japan – may be higher than in Sydney.

Course program

Year 1

Autumn semester

22107	Accounting for Business	6cp
25115	Economics for Business	6cp
35101	Mathematics 1	6cp
35151	Statistics 1	6cp

Spring semester

79203	Business Law and Ethics	6cp
25300	Fundamentals of Business Finance	6cp
35102	Mathematics 2	6cp
35140	Operations Research Modelling	6cp

Year 2

Autumn semester

35170	Introduction to Computing	6cp
35212	Linear Algebra	6cp
35231	Differential Equations	6cp
971xxx	Language and Culture 1	8cp

Spring semester

25905	Capital Budgeting and Valuation (Honours)	6cp
35252	Statistics 2	6cp
35241	Optimisation 1	6cp
972xxx	Language and Culture 2	8cp

Year 3

Autumn semester

35111	Discrete Mathematics	6cp
50140	Comparative Social Change	8cp
973xxx	Language and Culture 3	8cp

Spring semester

25410	Corporate Financial Analysis	6cp
974xxx	Language and Culture 4	8cp
976xxx	Contemporary Society	8cp

Year 4

Autumn semester

977xxx	In-country Study 1	24cp

Spring semester

978xxx	In-country Study 2	24cp

Year 5

Autumn semester

25906	Investment Analysis (Honours)	6cp
25621	Financing Decisions and Capital Market Theory	6cp
35321	Analysis 1	6cp
35353	Regression Analysis	6cp

Spring semester

25620	Derivative Securities	6cp
25606	Financial Time Series	6cp
35281	Numerical Analysis 1	6cp
35361	Probability and Stochastic Processes	6cp

Note: Students intending to proceed to the Honours degree in Mathematics and Finance should substitute 35322 Analysis 2 for the subject 35281 Numerical Analysis 1 in their final year.

Bachelor of Mathematics and Computing

- ◆ *Course code: MM07*
- ◆ *UAC code: 609045*
- ◆ *Testamur title: Bachelor of Mathematics and Computing*
- ◆ *Abbreviation: BMathComp*
- ◆ *Course fee: HECS (local)*
  $6,500 per semester (international)

The increasing dependence of society on information technology has brought with it an increasing requirement for graduates with both computational and analytical skills. This degree is designed for students who are interested in both mathematics and computing, and offers the prospect of careers in fields which require a sound knowledge of computing together with the ability to analyse and model practical situations. Demand for these skills is increasing as quantitative analysis becomes more widespread in dealing with commercial and industrial problems. At the same time, there is a growing need for teachers with skills in computing as well as mathematics, and graduates of this course will be well qualified to fill this role.

The Bachelor of Mathematics and Computing is offered as a Pass degree requiring completion of subjects with a total value of 144 credit points. Students who graduate from the course at a sufficiently high standard will be eligible to enter the Bachelor of Science (Honours) in Mathematics course.

The degree is offered as a full-time course over three years and as a part-time course over six years. The core of the course consists of an integrated sequence of subjects in mathematics, statistics, operations research, computer and systems architecture, programming and information systems analysis and design.

Elective subjects

By choosing appropriate elective subjects in the final year of the full-time course, or Years 5 and 6 of the part-time course, students have an opportunity to further develop their understanding of areas in which they are interested. Three elective subjects must be undertaken in an area of the mathematical sciences and one in an area of computing science. The computing elective is normally chosen from subjects offered at the third year (full-time) level of the Bachelor of Science in Computing Science course, and is subject to the approval of the Electives Coordinator. The mathematics electives must consist of one of two approved

sequences drawn from the Statistics major and the Operations Research major of the Bachelor of Science in Mathematics course.

These sequences are:

Statistics sequence

35353	Regression Analysis
35356	Design and Analysis of Experiments
35361	Probability and Stochastic Processes

Operations Research sequence

35340	Operations Research Practice
35342	Optimisation 2
35363	Simulation Modelling

The following sequence is currently under consideration, and would be well-suited for teachers of mathematics and computing.

Mathematics sequence

35231	Differential Equation
35232	Advanced Calculus
35321	Analysis 1

Grading of awards

All students eligible to receive the Bachelor of Mathematics and Computing are awarded the degree at the same level.

Course program

Full-time program

Year 1

Autumn semester

31415	Principles of Software Development A	6cp
31416	Computer Systems Architecture	6cp
31417	Computing Practice	6cp
35101	Mathematics 1	6cp

Spring semester

31425	Principles of Software Development B	6cp
31429	Procedural Programming	6cp
35102	Mathematics 2	6cp
35140	Operations Research Modelling	6cp

Year 2

Autumn semester

31436	Systems Software and Networks	8cp
35110	Discrete Mathematics (S)	4cp
35151	Statistics 1	6cp
35212	Linear Algebra	6cp

Spring semester

31424	Systems Modelling	6cp
35241	Optimisation 1	6cp
35252	Statistics 2	6cp
35290	Group Project	6cp

Year 3

Autumn semester

31434	Database Design	6cp
31455	Software Development Case Study	12cp
3xxxx	Mathematics Elective 1	6cp
3xxxx	Mathematics Elective 2	6cp

Spring semester

31455	Software Development Case Study (cont.)	
35281	Numerical Analysis 1	6cp
3xxxx	Mathematics Elective 3	6cp
3xxxx	Computing Elective	6cp

Part-time program

Year 1

Autumn semester

31416	Computer Systems Architecture	6cp
31417	Computing Practice	6cp

Spring semester

31415	Principles of Software Development A	6cp
35101	Mathematics 1	6cp

Year 2

Autumn semester

31425	Principles of Software Development B	6cp
35140	Operations Research Modelling	6cp

Spring semester

35110	Discrete Mathematics (S)	4cp
35151	Statistics 1	6cp

Year 3

Autumn semester

31429	Procedural Programming	6cp
35102	Mathematics 2	6cp

Spring semester

31436	Systems Software and Networks	8cp
35212	Linear Algebra	6cp

Year 4

Autumn semester

35241	Optimisation 1	6cp
35252	Statistics 2	6cp

Spring semester

31424	Systems Modelling	6cp
35290	Group Project	6cp

Year 5

Autumn semester

31434	Database Design	6cp
35281	Numerical Analysis 1	6cp

Spring semester

3xxxx	Computing Elective	6cp
3xxxx	Mathematics Elective 1	6cp

Year 6

Autumn semester

31455	Software Development Case Study	12cp
3xxxx	Mathematics Elective 2	6cp

Spring semester

31455	Software Development Case Study (cont.)	
3xxxx	Mathematics Elective 3	6cp

POSTGRADUATE COURSEWORK DEGREES

COMPUTING AND INFORMATION TECHNOLOGY

Master's projects from 2001

Subject to final approval, from 2001, students enrolling in the following programs will undertake a common suite of project subjects:

- Master of Science in Computing
- Master of Business in Information Technology Management
- Master of Internetworking.

Current students (those enrolled in these programs prior to 2001) can elect to complete the existing program or can take the new program.

Students are required to undertake a research methods subject which will be offered either in Summer session or during Autumn semester before undertaking a compulsory introductory project subject. Students may then choose to undertake an optional extensive project subject (6 or 12 credit points) in the Spring semester or they may choose to undertake elective coursework subjects.

Course program

Autumn semester

32930	Information Technology Management Research Methods[1] *or*	6cp
32931	Information Technology Research Methods[1] *and*	6cp
32932	Project A1	6cp

Spring semester

32933	Project B2 *or*	12cp
32934	Project B1	6cp
3xxxx	Elective *or*	6cp
3xxxx	Elective	6cp
3xxxx	Elective	6cp

[1] These subjects can also be taken in Summer session.

All Master's programs will be 72 credit points and will share subject numbers.

Students are required to complete a total of 72 credit points. All students enrol in a 6-credit-point Research Methods subject and a 6-credit-point Project A subject; these subjects are normally taken towards the end of the program of study, i.e. in the final year. The balance of 60 credit points made up of:

- ten 6-credit-point coursework subjects, or
- nine 6-credit-point coursework subjects and the 6-credit-point subject, Project B1, or
- eight 6-credit-point coursework subjects and the 12-credit-point subject, Project B2.

Master of Science in Computing

- ◆ *Course code: MC58*
- ◆ *Testamur title: Master of Science in Computing*
- ◆ *Abbreviation: MSc*
- ◆ *Course fee: $1,200 per 6-credit-point subject (local)[1]*
  $7,250 per semester (international)

The Master of Science in Computing is a professional course. Graduates select a program of study that suits their individual career goals. For example, a program may be chosen which develops specialised expertise in computer systems, which provides a general update of information systems or which equips the student for a position in management.

Attendance pattern

The course may be taken on a part-time basis over six semesters or three years, or on a full-time basis of three semesters or approximately

[1] The Master of Science in Computing is offered with a fixed quota of student places and the course fees have been set in accordance with University policy. For students commencing in 2001, tuition fees will be set at $200 per credit point; students normally take 12 credit points per semester. Course fees are revised from year to year in accordance with University and government policy. Details of the current fee structure may be obtained from the University Graduate School.

18 months. Lectures are normally given only in the evenings and attendance is required at least two evenings per week between 6.00 p.m. and 9.00 p.m.

How to apply

Applicants for the Master of Science in Computing should have a Bachelor's degree with a major in computing, or a Bachelor degree plus a Graduate Diploma in computing, or a Bachelor's degree plus at least three years' full-time (or equivalent) professional computing experience.

As a guide, the level of the applicant's professional knowledge should be at least equivalent to that of a Level 3 Member of the Australian Computer Society.

Criteria for admission to the Master of Science in Computing support the University's Equal Opportunity policy.

Each semester the Faculty publishes the *MSc in Computing Course Guide*. This guide contains much administrative information as well as a detailed statement of the course regulations. Students and prospective applicants are advised to obtain a copy of the Course Guide and to study it carefully. From August each year, an 'Admission package' containing a copy of the Course Guide, the application forms and other relevant information is available from the UTS Student Info & Admin Centre. Please note that completed application forms must be submitted to the University by the published deadline, which is usually the last week of October in the year prior to that in which admission is sought. Applicants may be required to attend an interview.

Prerequisite knowledge

All subjects in the Master of Science in Computing course are presented at the postgraduate level. Students are expected to be familiar with the undergraduate material that lies behind the postgraduate work.

For the subjects offered by the Faculty of Information Technology, a set of references to the presumed undergraduate material is given by each lecturer before the start of each semester. It is important to note that these references are not 'pre-reading', but are a summary of the undergraduate knowledge required for each subject. Students are responsible for ensuring that they are completely familiar with the undergraduate knowledge implied by those references. If they are not, then they should defer their enrolment in that subject and should attend suitable remedial

undergraduate lectures as advised by the Program Leader for the Master of Science in Computing and Master of Science in Computing (Honours).

For a subject offered by other faculties or schools other than the Faculty of Information Technology, students are advised to contact that subject's coordinator before the start of semester, to determine whether they possess the prerequisite knowledge for that subject. If students do not possess the prerequisite knowledge, they should seek advice from those departments or faculties on the feasibility of a remedial program. The Director, Postgraduate Studies, will assist in obtaining this advice.

Course structure

To complete the course, students must obtain 72 credit points. Most coursework subjects are 6 credit points each. Students will normally complete 60 credit points of coursework subjects and 12 credit points of project subjects. There is a wide choice of subjects offered by the Faculty of Information Technology and by other faculties including Business and Engineering. Students may obtain up to 24 of their credit points by passing approved subjects from outside the Faculty of Information Technology.

Students select their program of study with the assistance of an advisor from the Faculty of Information Technology. The subjects chosen by a student should form a coherent plan of study and be consistent with the student's professional career goals. The program of study may be a broad collection of subjects or a series of streams for those who wish to study certain areas in more depth. The underlying theme is information technology in a distributed environment. The subjects offered in this program are revised regularly to preserve the currency of the course.

Admission

Exemptions

Exemption from subjects in the MSc program is not given on the basis of previous study. Some exemptions are granted to students who are undertaking joint qualifications at the University of Technology, Sydney.

Advanced standing for UTS MBA graduates

Under an agreement between the Faculty of Information Technology and the Faculty of Business at UTS, students who have completed a UTS MBA and who then proceed to the

Master of Science (Computing) may be granted exemptions from some elective subjects.

Students entering the MSc program, who intend to apply subsequently for admission to the University's MBA program, should first discuss the matter both with the Program Leader for the Master of Science in Computing and Computing Honours and the Director of the MBA program in the Faculty of Business, preferably *before* they commence their studies for the MSc.

MSc subjects

The MSc subjects are shown below. Each MSc subject is of one semester's duration. There are three semesters in a year. In what follows: 'A'

stands for Autumn semester, 'S' stands for Spring semester. Also 'B' stands for block mode meaning that the subject is presented in a semi-intensive format; for example, attendance may involve a whole weekend. Not all subjects are presented each year. They are dependent on the availability of specialist lecturing staff and sufficient interest in a subject from students. Some of the MSc subjects have prerequisites.

At present the intention is to offer the above MSc subjects on a two-year cycle, however the Masters program is constantly under review. The list of MSc subjects offered is expected to expand. The contents and sequence of existing MSc subjects may be revised to reflect changes in the area.

Subject number	Subject name	Credit points	Semester offered
32108	Applications of Artificial Intelligence	6	S
32204	Advanced Data Management	6	A
32208	Information Processing Strategy	6	S
32510	Principals of Object-oriented Programming in C++	6	S
32520	Unix Systems Administration[1]	6	A
32521	Internetworking[1]	6	A
32523	Operating Systems for Internetworking[1].	6	A
32524	LANs and Routing[1]	6	S
32525	Distributed Software Programming[1]	6	S
32527	Internetwork Design[1]	6	S
32528	Network Management[1]	6	S
32531	Global Information Systems	6	A
32532	Conducting Business Electronically	6	S
32533	Networking Communities	6	A
32534	Knowledge Management	6	S
32535	Databases in Distributed Environments	6	S
32536	Systems Development (Objects and Processes)	6	A
32537	Enterprise Wide Software Systems	6	S
32545	Multi-agent Systems	6	S
32546	Business Process Engineering	6	A
32604	Systems Integration	6	S
32541	Project Management	6	A
32702	Contemporary Telecommunications	6	S
32704	Strategic IT Contract Management[2]	6	B
32910	Project 1	6	all
32911	Project 2	6	all
95560	Multimedia Industry and Process[3]	8	A & S
95561	Multimedia Products and Technology[3]	8	A & S

[1] Prerequisite: must satisfy admission requirements for the Master of Science in Internetworking course, and subject to space being available.

[2] Prerequisite: must satisfy admission requirements for the Master of Business in Information Technology Management course, and subject to space being available.

[3] Prerequisite: must satisfy admission requirements for the Master of Interactive Multimedia course, and subject to space being available.

Other possible subjects

These subjects present specialised material and will thus depend on the availability of specialist staff and on a student meeting the prerequisites. These subjects usually share lectures with senior undergraduate students. The following subjects will be available but not in every semester; the Faculty timetable shows the availability of subjects each semester. A maximum of two subjects from this list may be included in your program.

31601	Programming for Performance	6cp
31921	Objectbases	6cp
32501	Computer Graphics	6cp
32509	Human–Computer Interaction in Information Systems	6cp
32513	Advanced Machine Learning	6cp
32516	Internet Programming	6cp
32517	Commerce on the Internet	6cp
32530	Building Intelligent Agents	6cp
32542	Advanced Cognitive Modelling	6cp
32543	Advance 3D Computer Animation	6cp
32544	Advanced Image Synthesis Techniques	6cp

Subjects from other departments or faculties

Postgraduate subjects from the Department of Mathematical Sciences or the Faculties of Law and Business are available to students in the MSc in Computing as electives. Students should contact the relevant department or faculty for prerequisites.

Choosing a program in 2001

Students will be issued with a Master's handbook which will detail suggested subject patterns and themes, and when individual subjects will be available. These will also be available in the more up-to-date version of the online edition of this handbook.

Project

The project entails a substantial investigation of a topic, in an area of current research interest in information technology. The project should be related to the student's professional career goals. Students are required to enrol in and pass the two project subjects: 32910 Project 1 and 32911 Project 2. The project work is normally undertaken in the final two semesters of study. In the first semester of project work, students enrol in Project 1. In the second semester of project work, students enrol in Project 2. Students should be enrolled in the Project 2 subject in the semester in which they submit their written report.

The topic for the project should be:

- of direct interest to the student, and
- of value to the student's professional development.

The topic for the project may be closely related to the student's current employment. Alternatively, the topic may be chosen to be of value to the student's future career. The project should be a vehicle for importing the knowledge learned from the coursework to the student's professional life. The topic should be chosen with this professional goal in mind. Students must:

- obtain the agreement of a member of the lecturing staff to act as project supervisor, and
- deliver a 500-word description of the project to the Program Leader for the Master of Science in Computing and Computing Honours for approval.

The two outputs of the project work are:

- a *written report*, and
- a verbal *research seminar.*

The dates for submitting the two outputs of the project work are:

- The due date for submitting the *written report* is 31 May if the student wishes to be certain that the project will be examined in the Autumn semester. The corresponding date for the Spring semester is 31 October. In any case, the examination of the written report must be completed before the Faculty's Examination Review Committee meeting for that semester. This meeting takes place near the end of each semester. If a student submits the written report after the due date and if the examination of the written report has not been completed in time for that meeting, then a 'fail' result will be recorded for that student's project work.

- The *research seminar* is normally presented early in the semester following the submission of the written report. That is, the seminars will normally be presented by students who are not formally enrolled. The research seminars are presented at that time to avoid overloading staff and students at the end of semester. Students are advised of the date of the research seminar presentations.

The *written report* is a substantial document which describes the project work in detail. Three copies of the written report should be

lodged with the Program Leader for the Master of Science in Computing and Computing Honours in the Faculty of Information Technology. All three copies of the written report will be retained by the University, one by the Faculty of Information Technology, one by the Project Supervisor and one by the University Library. The written report should be typed and bound in accordance with the University's specification for Master's theses (available from either the University Graduate School or the Faculty of Information Technology). To avoid the possible expense of rebinding, students are advised to submit one copy of a typed but unbound report for examination. When submitted for examination, the written report should be accompanied with a Certificate of Originality form and a Retention of Report form. These forms are available from the office of the Faculty of Information Technology.

The *research seminar* is a 40-minute verbal presentation. The research seminars are followed by 20 minutes of discussion. Students do not need to be formally enrolled when they present their research seminar. The aim of the research seminar is to discuss the controversial or technical issues within the written report. A 'satisfactory' or 'unsatisfactory' result will be awarded for this presentation. If a student receives an 'unsatisfactory' result for their research seminar then the student will be given the opportunity to present the research seminar again. All students are required to present a satisfactory research seminar before they will be permitted to graduate.

The project work is examined on the contents and standard of presentation of the written report and the research seminar. The examiner of the written report is usually the project supervisor. If a student disputes the marks awarded for the project work, the written report is examined by another member of the academic staff.

Subject failure

Students are permitted, at the most, two failures during the MSc in Computing. Note the resolution of the Faculty Board, FBMC/92/70, that any Master's degree candidate enrolled in the MSc in Computing who records any three failures will have his or her registration from the course discontinued. In addition, students are bound by the Rules of the University and are advised to refer to them.

Minimum and maximum time

There are two important University Rules concerning minimum and maximum time of which students should be aware:

- A Master's degree candidate shall not normally be eligible for the award of a Master's degree by coursework until he or she has completed at least six semesters of a part-time course. A student who is specially qualified in a relevant discipline may, with the approval of the Academic Board, be allowed to complete the course in less than the minimum time (Rule 3.3.5.2).

- A student who fails to complete all of the work prescribed for the higher degree within nine semesters from the time of his or her registration as a part-time Master's degree candidate will only be permitted to continue with the approval of the University Graduate School Board (Rule 3.3.7.1).

Graduate Certificate in Information Technology Management

- *Course code: MC63*
- *Testamur title: Graduate Certificate in Information Technology Management*
- *Abbreviation: none*
- *Course fee: $1,650 per 6-credit-point subject (local)[1]*

Graduate Diploma in Information Technology Management

- *Course code: MC75*
- *Testamur title: Graduate Diploma in Information Technology Management*
- *Abbreviation: GradDipInfTechM*
- *Course fee: $1,650 per 6-credit-point subject (local)[1]*

Master of Business in Information Technology Management

- *Course code: MC85*
- *Testamur title: Master of Business in Information Technology Management*
- *Abbreviation: MBus*
- *Course fee: $1,650 per 6-credit-point subject (local)[1]*

These courses form a joint program between the Faculty of Information Technology and the School of Management in the Faculty of Business. Administration of these courses is the responsibility of the Faculty of Information Technology. All inquiries regarding these courses should be directed to Alison Waugh, Professional Programs Manager, on (02) 9514 1925. The courses aim to:

- develop professional skills necessary for successfully undertaking the role of manager in terms of people, resources and processes in a variety of organisational contexts (which may include business, community, public, manufacturing, consultancy or professional contexts)
- enable the acquisition of conceptual and analytical understanding of the corporate/organisational needs from the differing perspectives of individuals and groups within the organisation, necessary for successful management
- provide a well-balanced selection of subjects from both advanced information technology (IT) and management, in an integrated program which is relevant to the current and future demands of the IT industry
- develop an understanding of the IT business environment, and to extend knowledge and skills in specialist areas of management related to management of IT in business, and
- enhance and develop a partnership between UTS and the IT industry.

Admission requirements

Master's degree

- A recognised Bachelor's degree (or equivalent) in an appropriate discipline such as Business or Computing. Normally students are expected to have a minimum of five years' professional work experience in the IT industry. Selection for admission is based on merit. Applicants should also provide references and a CV outlining their practical experience

or

- the prior successful completion of the Graduate Diploma in Information Technology Management (such students will therefore be exempt from Semesters 1, 2, 3 and 4)

or

- the successful completion of an approved bridging program for non-graduate entry – that is, the Graduate Certificate in Information Technology Management – with passes in all subjects and a credit average over the entire course.

Graduate Diploma

- A recognised Bachelor's degree (or equivalent) in an appropriate discipline such as Business or Computing. Normally students are expected to have a minimum of five years' professional work experience in the IT industry. Selection for admission is based on merit. Applicants should also provide references and a CV outlining their practical experience

or

- the prior successful completion of the Graduate Certificate in Information Technology Management (such students

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[1]   This course is not offered to international students.

will therefore be exempt from Semesters 1 and 2), where entry to the Graduate Certificate was based on a recognised Bachelor's degree (or equivalent) in an appropriate discipline such as Business or Computing

or

- the successful completion of an approved bridging program for non-graduate entry – that is, the Graduate Certificate in Information Technology Management – with passes in all subjects and a credit average over the entire course.

Graduate Certificate

- A recognised Bachelor's degree (or equivalent) in an appropriate discipline such as Business or Computing. Normally students are expected to have a minimum of five years' professional work experience in the IT industry. Selection for admission is based on merit. Applicants should also provide references and a CV outlining their practical experience

or

- evidence of general and professional qualifications, such as other post-secondary school qualifications that can establish the applicant's aptitude, knowledge and practical experience, which will satisfy the Faculty Board in Information Technology that the applicant possesses the educational preparation and capacity to pursue postgraduate studies. (Experience in the IT industry will be especially important in this regard e.g. five years' minimum vocational experience.)

It should be noted that applicants for these courses may be required to attend an interview.

Presumed knowledge and prerequisites

Subjects in the Graduate Certificate, Graduate Diploma and Master's courses are presented at postgraduate level. Students are expected to be familiar with the undergraduate material on which the postgraduate work is based. For the subjects offered by either the Faculty of Information Technology or the School of Management, before the start of each semester a set of references to the presumed under-graduate material is given by each lecturer. It is important to note that these references are not 'pre-reading' but are a summary of the undergraduate knowledge required for each subject. Students are responsible for ensuring

that they are completely familiar with the undergraduate knowledge implied by those references. If they are not, then they should seek advice from the Program Leader for the Information Technology Management Program, in the first instance and may then be advised to contact the Subject Coordinator before the start of semester, to determine whether they possess the prerequisite knowledge for that subject.

For subjects offered by faculties or schools other than the Faculty of Information Technology and the Faculty of Business, students are advised to contact that subject's coordinator before the start of semester to determine whether they possess the prerequisite knowledge for that subject. If students do not possess the prerequisite knowledge, then they should seek advice from that school or faculty on the feasibility of a remedial program. The Program Leader for the Information Technology Management Program, will assist in obtaining this advice.

In addition, there are prerequisite require-ments within the structure of the course itself (see below).

Course structure

All subjects will be assessed to the Master's standard, regardless of the course in which a student is enrolled. Therefore, a student who takes several individual subjects may later gain credit towards a Graduate Certificate.

The courses have been designed to allow freedom of choice at the individual subject level. The subjects at the Graduate Certificate level aim to teach the student skills and competencies for IT management. At the Graduate Diploma level, the subjects aim to focus on organisational strategies and plan-ning. At the Master's level, the subjects are related to organisational development and research for the IT industry.

The full Master's degree course is normally completed in three years (six semesters) of part-time study. The project is normally commenced in the fifth semester, together with one subject related to research methodology.

Core subjects are to be offered by the Faculties of Information Technology and Business on a regular basis. Additional subjects available on an **elective** basis will be offered depending on demand and the availability of specialist staff (see Electives policy below). The industrially linked project must build on the core/elective

subjects already taken by the student and should ideally be related to his or her place of work.

Electives policy

Students may take postgraduate level subject(s) from another UTS discipline or another institution, at the discretion of the Program Leader for the Information Technology Management Program. Where more than one subject is involved, the subjects would be expected to form a coherent, staged group. The student will be expected to provide a written justification as to how the subjects form a coherent, staged group and a coherent plan of study that is consistent with their professional career goals.

The student is responsible for ensuring that they have the necessary qualifications and presumed knowledge for any subjects taken from other disciplines or institutions. Students should also be aware that such subjects may not be presented or documented at the level normally associated with the program.

Exemptions will not normally be granted to students for elective subjects. Students may commence the course in either the Autumn or Spring semester.

Level 1 – Non-award

A student may take any number of subjects relevant to his or her professional needs. Subject prerequisites, if any, will need to be taken into account.

All subjects will be presented and assessed to the Master's level. Therefore, a student who takes several appropriate subjects may later gain credit towards a Graduate Certificate.

No formal qualification will be awarded by UTS.

Level 2 – Graduate Certificate in Information Technology Management (24cp)

A student must complete the following **three core** subjects:

21788	Effective People Management	6cp
21789	Contemporary Management Practices	6cp
32601	Advanced Project Management	6cp

plus one elective subject selected from

24704	Managing Client Relations	6cp
32602	Impact of Information Technology	6cp
32604	Systems Integration	6cp
32605	Managerial Analysis and Evaluation of Information Systems	6cp
32701	Advances in Information Technology	6cp

32702	Contemporary Telecommunications	6cp
32703	Information Technology Strategy	6cp
32704	Strategic IT Contract Management	6cp

or

An elective approved by the Program Leader for the Information Technology Management Program

Level 3 – Graduate Diploma in Information Technology Management (48cp)

A student must complete the requirements for the Graduate Certificate in Information Technology Management (24cp)

plus complete the following **two core** subjects:

21806	Managing Organisational Change	6cp
21808	Strategic Business Management	6cp

plus two elective subjects selected from the electives listed under Level 2 or an elective approved by the Program Leader for the Information Technology Management Program or one of the following:

21807	Total Quality and Productivity Management	
25742	Financial Management	
22746	Managerial Accounting	
22747	Accounting for Managerial Decisions	

Level 4 – Master of Business in Information Technology Management (66cp)

A student must complete the requirements for the Graduate Diploma in Information Technology Management (48cp);

plus complete the following subjects:

21751	Management Research Methods	6cp
32806	Project A	6cp
32812	Project B	6cp

The major project must involve applied organisational research and development in the IT industry. It must be industrially linked and conducted in conjunction with the student's industry sponsor.

A student must make one oral presentation of his or her project work at a satisfactory standard during the final year of enrolment in the Master's course.

In all cases, the subjects chosen must form a coherent plan of study and must be consistent with the student's professional career goals. Each student's program of study will be discussed with, and approved by, the Program Leader for the Information Technology Management Program at the time of entry into a course.

Project

The project entails a substantial investigation of a topic, in an area of current research interest in information technology and related to the student's professional career goals. The project is normally taken in the last part of the Master's course and must be taken and passed by all Master's students.

A student may wish to select a topic that is closely related to his or her current employment. Alternatively, a student may wish to choose a topic that should be of value to his or her future career. The project should be a vehicle for importing the knowledge learnt from the coursework into the student's professional life. The topic should be chosen with this professional goal in mind. Students are advised to seek the assistance of the lecturing staff in finalising the topic for their project.

Graduate Certificate in Interactive Multimedia

- *Course code: MC72*
- *Testamur title: Graduate Certificate in Interactive Multimedia*
- *Abbreviation: none*
- *Course fee: $1,500 per 6-credit-point subject (local)[1,2]*

Graduate Diploma in Interactive Multimedia

- *Course code: MC71*
- *Testamur title: Graduate Diploma in Interactive Multimedia*
- *Abbreviation: GradDipIM*
- *Course fee: $1,500 per 6-credit-point subject (local)*
  $7,250 per semester (international)[1]

Master of Interactive Multimedia

- *Course code: MC70*
- *Testamur title: Master of Interactive Multimedia*
- *Abbreviation: MIM*
- *Course fee: $1,500 per 6-credit-point subject (local)*
  $7,250 per semester (international)[1]

This is a set of articulated offerings:

- Graduate Certificate in Interactive Multimedia 22-26cp (core + 6-10cp)
- Graduate Diploma in Interactive Multimedia 48cp (core + 32cp)
- Master of Interactive Multimedia 72cp (core + 56cp)

The Graduate Certificate, Graduate Diploma and the Master's degree are offered on a part-time and full-time basis. Because of visa requirements, international students can enrol on a full-time basis only. Full-time courses normally take 1, 2 and 3 semesters to complete respectively. Part-time courses normally take 1, 2 and 3 years to complete respectively. They are fee-paying courses. While the program will be managed by the Faculty of Information Technology, it is a joint program between the Institute for Interactive Media and Learning and a number of teaching faculties.

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[1] All fees are subject to annual review.

[2] This course is not offered to international students.

The program is designed for students from a wide variety of educational and professional backgrounds who may or may not already be working in areas of multimedia. It aims to educate the future innovators and leaders in the different professions that make up the multimedia industries. For this reason, the program combines a broad set of core subjects with a wide range of elective subjects to enable students to gain new areas of knowledge or broaden existing areas. It has also been designed as an articulated program commencing with a Graduate Certificate, then a Graduate Diploma and finally a Master's degree. Some non-graduate entry (into the Graduate Certificate only) will be possible for applicants with substantial multimedia industry experience. Successful completion of the Graduate Certificate with a credit grade average or better will permit students to articulate into the Graduate Diploma.

All students will undertake a core course of study leading to the award of Graduate Certificate. This will consist of two 8-credit-point core subjects and between six and 10 credit points of elective subjects. The two core subjects will be taught by the Institute for Interactive Media and Learning with some guest lecturers from other faculties. There will be no exemptions granted for these subjects.

Students will then be asked to undertake specialised elective(s) from the range of postgraduate coursework units available across the university. Popular choices to date for electives have been in various areas of Engineering, Computing, Design, Project Management, Media and Communication, Information Studies, and Education.

The final component of the Graduate Certificate will be between six and 10 credit points of electives from one of these areas.

The Graduate Diploma consists of the Graduate Certificate plus a further 22-26 credit points of electives. This means that in total the students will do 32 credit points of electives, of which 24 should constitute a coherent stream from one of the sets of electives on offer from the faculties, and the remaining eight credit points may be chosen from any of the other available electives. Most of these electives are existing graduate subjects within the relevant faculties.

The third component of the program for students progressing to the Master's will be the development and completion of a multimedia project. Students will form multidisciplinary groups for this purpose. Supervision of the final product will be carried out by relevant staff in the faculties who have been identified as having a suitable background for each project.

Each student should plan an individual course based on available electives, with the Course Adviser.

Course Structure

Graduate Certificate in Interactive Multimedia

Core:

95560	Multimedia Industry and Process	8cp
95561	Multimedia Products and Technology	8cp
xxxxx	Elective	6-10cp

Graduate Diploma in Interactive Multimedia

Graduate Certificate plus:

xxxxx	Elective stream	22-26cp

Master of Interactive Multimedia

Graduate Diploma plus:

95562	Multimedia Project	24cp

Admission requirements

Graduate Certificate in Multimedia (Course Code MC72)

Applicants need to have one of the following:

- a three-year undergraduate degree (or equivalent), or
- a diploma and considerable relevant professional experience.

Graduate Diploma in Multimedia (Course Code MC71)

Applicants need to have one of the following:

- a three-year undergraduate degree (or equivalent), plus relevant professional experience, or
- a Credit average or better in a Graduate Certificate in Multimedia, or
- a diploma and substantial relevant professional experience.

Master of Multimedia (Course Code MC70)

Applicants need to have one of the following:

- an honours degree (or equivalent), or
- a three-year undergraduate degree (or equivalent) plus either two years of relevant professional experience, or
- a Credit average or better in a Graduate Certificate or Graduate Diploma in Multimedia, or outstanding professional experience at a senior level.

'Relevant professional experience' is not restricted to experience in multimedia, the traditional media or computing, but may include experience in any field which will enrich the applicant's capacity to become a good multimedia professional. The onus is on the applicant to demonstrate relevance. Applicants are also expected to demonstrate that they possess sound communication, analytical and critical skills.

Exemptions

Given the interdisciplinary focus and team-work emphasis of these courses, advanced standing and subject exemptions will not normally be granted for other postgraduate study or work experience.

Graduate Certificate in Internetworking

- ♦ *Course code: MC82*
- ♦ *Testamur title: Graduate Certificate in Internetworking*
- ♦ *Abbreviation: none*
- ♦ *Course fee: $1,500 per 6-credit-point subject (local)[1]*

Graduate Diploma in Internetworking

- ♦ *Course code: MC81*
- ♦ *Testamur title: Graduate Diploma in Internetworking*
- ♦ *Abbreviation: GradDipInternetworking*
- ♦ *Course fee: $1,500 per 6-credit-point subject (local)[1]*

Master of Science in Internetworking

- ♦ *Course code: MC80*
- ♦ *Testamur title: Master of Science in Internetworking*
- ♦ *Abbreviation: MSc*
- ♦ *Course fee: $1,500 per 6-credit-point subject (local)[1]*

This is a set of articulated offerings:

- • Graduate Certificate in Internetworking 24cp
- • Graduate Diploma in Internetworking 48cp (24cp + Grad Cert)
- • Master of Science in Internetworking 72cp (24cp + Grad Dip)

This course is only offered in part-time mode.

The program is designed to meet the growing needs of industry for networking specialists. It is intended for computing or engineering graduates with or without networking experience who wish to learn or extend their knowledge of networking. As students will have a variety of backgrounds, there is a degree of subject choice in the program to meet individual's needs.

[1] This course is not offered to international students.

Course structure

Graduate Certificate in Internetworking

32516	Internet Programming	6cp
32521	Internetworking	6cp
32524	LANS and Routing	6cp
32522	C for Systems Programmers	6cp
	or	
32547	UNIX Systems Programming	6cp

Graduate Diploma in Internetworking

Graduate Certificate plus:

Any four of the following electives (total 24cp):

32520	UNIX Systems Administration	6cp
32523	Operating Systems for Internetworking	6cp
32525	Distributed Software Programming	6cp
32527	Internetwork Design	6cp
32528	Network Management	6cp
3xxxx	An elective approved by the Program Director	

Master of Science in Internetworking

Graduate Diploma plus:

32518	Internetworking Research	6cp
32519	Internetworking Project (18cp)	18cp
	or	
32529	Internetworking Project (12cp)	12cp
	plus	
3xxxx	An elective from the Graduate Diploma list (above)	6cp

Admission requirements

Applicants should have a first degree. A first degree in Computing Science, Computer Systems Engineering, Telecommunications or cognate discipline is an advantage but not essential.

Entry, based on experience in the networking industry, is possible. An applicant's suitability for the program, in this case, will be determined by academic staff and may require an interview.

Experience/Background

Two years experience in networking or other positions in the IT industry is desirable.

Aim/Objective

1   To meet the growing needs of industry for networking specialists.

2   To allow the student to gain a University qualification and prepare them for CCNA (Cisco Certified Network Associate) industry certification within the UTS/Cisco Local Network Academy.

3   To retrain IT professionals wishing to move into networking and internetworking.

4   To provide a thorough and practical grounding in networking, network design, network administration and network management.

5   To provide a solid foundation for the writing of networked applications using Java and other WWW technologies.

6   To meet students' needs through project work and elective subjects, for some specialisation, at any layer of the OSI reference model.

Exemptions

Exemptions are only granted for subjects from the Graduate Certificate level. These may be applied for if you have successfully completed studies of a comparable standard, or you can demonstrate equivalent, comparable, relevant experience.

Graduate Certificate in Information Technology

- ◆ *Course code: MC67*
- ◆ *Testamur title: Graduate Certificate in Information Technology*
- ◆ *Abbreviation: none*
- ◆ *Course fee: $1,200 per 6-credit-point subject (local)[1]*

The Graduate Certificate is offered as a full-fee-paying part-time course usually extending over two semesters. It consists of 18 credit points. It replaces all previous general Graduate Certificates and is designed to offer flexibility to the student. It articulates into the Graduate Diploma in Information Technology. Students who complete subjects which are core subjects in the Graduate Diploma in Information Technology will be able to carry the credit forward to that course.

Its aims are to provide opportunities for some computing practitioners to update their knowledge, to provide opportunities for graduates in other disciplines to commence study in Information Technology, and to provide flexibility for students in their study of computing subjects.

As explained above, the Graduate Certificate will consist of three 6-credit-point subjects, for a total of 18 credit points. Some combinations of subjects are shown below, with indications of expected times to complete them. In addition, applicants will be able to choose other combina-

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[1]   This course is not offered to international students.

tions from the undergraduate subjects offered by the Faculty of Information Technology, subject to the approval of the Program Leader for Graduate Certificates and Diplomas in Computing Science and Information Technology. Approval will involve consideration of such aspects as prerequisite structures, subject timetables and the student's interest.

Admission requirements

Applicants with a recognised Bachelor's degree (or equivalent) are normally deemed eligible for the course. Consideration may be given to applicants whose background does not fit this requirement, provided that a case can be made to establish that their aptitude, knowledge and practical experience are sufficient. Experience in the information technology industry is especially important in this regard.

Maximum time rule

Students will have their registration discontinued for failure to complete the course in three semesters from the time of registration in the case of part-time students, not inclusive of periods of leave of absence (Rule 3.2.6.1).

Unsatisfactory progress

Students will have their registration discontinued for any two failures in the course (unsatisfactory progress as defined by the Faculty Board resolution, FBMC/94/80) (Rule 3.2.6.2).

Option	Subjects		Comments
A	31414	Information Systems	Start Autumn or Spring,
	31424	Systems Modelling	finish in one year
	31434	Database Design	
B	31511	Systems Design	Start in Spring,
	31434	Database Design	finish in 18 months
	31443	Distributed Databases and Client/Server Computing	
C	31510	Operating Systems	Start in Autumn,
	31513	Networking 2	finish in one year
	31512	Networking 1	
D	31509	Computer Fundamentals	Start Autumn or Spring,
	31508	Programming Fundamentals	finish in one year
	31414	Information Systems	
E	31508	Programming Fundamentals	Start in Autumn,
	31928	Applications Development with Delphi	finish in one year
	31931	Software Quality Assurance	
F	31424	Systems Modelling	Start in Autumn,
	31511	Systems Design	finish in one year
	31454	Project Management and the Professional	
	or		
	31777	Human–Computer Interaction	

Graduate Diploma in Information Technology

+ *Course code: MC52*
+ *Testamur title: Graduate Diploma in Information Technology*
+ *Abbreviation: GradDipInfTech*
+ *Course fee: $1,200 per 6-credit-point subject (local)*
  $7,000 per semester (international)[1]

The Graduate Diploma in Information Technology is intended to provide students with the basic knowledge and skills required for a professional career in the computing and/or information systems area. It is designed for people who have already taken a first degree in which computing has not been included, or only covered lightly.

It is anticipated that students entering the course will have previously studied courses from a wide range of disciplines. Some will have graduated with no previous contact with computing; for such, the course is essentially a re-training degree, aiming to lay the foundations for a new career in the computing and/or information systems area. Other students entering the course will have had some familiarisation with computing, while still others will be familiar with computing concepts in areas such as programming, systems analysis and information retrieval, and will be seeking to consolidate and extend their present knowledge by attaining a formal computing qualification. It is not intended that applicants have extensive computing experience, given the re-training emphasis of the course.

Satisfactory completion of the course leads to the award of Graduate Diploma in Information Technology. It is anticipated that holders of this award will be eligible for Level 1 membership of the Australian Computer Society.

Admission requirements

The Graduate Diploma in Information Technology may be taken on a full- or part-time basis, with an intake in either Autumn or Spring semester.

Applicants should have a first degree, equivalent to an undergraduate three-year degree from the University of Technology, Sydney. Candidates who are unsure of the exact ranking of their degree should either contact:

University Graduate School
telephone (02) 9514 1523

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[1]   All fees are subject to annual review.

or write to

National Office of Overseas Skills Recognition
PO Box 25
Belconnen ACT 2616

The number of applicants for the Graduate Diploma is expected to be in excess of the number of places. In addition to the Application for Admission to Graduate Coursework form, applicants should complete a Supplementary Application form, and support their application with whatever documentation they consider to be appropriate. The selection committee may invite some applicants in for an interview.

For further information, applicants should contact (within the Faculty):

Graduate Research and Liaison Officer
telephone (02) 9514 1806

or

Peter Bebbington
Program Leader for Graduate Certificates and Diplomas in Computing Science and Information Technology
telephone (02) 9514 1828

Attendance pattern

The course is normally taken on a part-time basis over two years, and will usually entail attending two to three evenings per week. Occasionally one afternoon per week (plus one to two evenings per week) may be required, depending on the choice of subjects. Some students may be unable to pursue the normal attendance pattern or may wish, for some reason, to take longer to complete the course; this is allowable, but students must be aware of the University's maximum time rule which is described in the 'Progression rules' section below. The course may also be taken on a full-time basis over one year.

Electives

Electives must be chosen from the list of allowable undergraduate electives offered by the Faculty of Information Technology. Students wishing to take electives outside this list must discuss the matter with the Program Leader for Graduate Certificates and Diplomas in Computing Science and Information Technology.

Exemptions

Under normal circumstances, exemption from any core subject may be granted on the basis of equivalent study. A maximum of 12 credit

points may be exempted. Students will **not** be granted exemptions from elective subjects. The Graduate Certificate in Information Technology articulates into this course.

Progression rules

All students enrolled in this course should be aware of the following University Rules under which a student's registration will be discontinued.

Maximum time

Students will have their registration discontinued for failure to complete the course within four semesters from initial registration in the case of a full-time student, or within eight semesters from initial registration in the case of a part-time student. This is not inclusive of periods of approved leave of absence (Rule 3.2.6.1).

Unsatisfactory progress

Students will have their registration discontinued for any three failures in the course (unsatisfactory progress as defined by the Faculty Board resolution, FBMC/94/80) (Rule 3.2.6.2).

Course structure

To gain the Graduate Diploma, students must complete a minimum of 48 credit points.

Students may commence either the full-time or part-time program in either semester.

Recommended part-time program

There may be some subject changes in 2002.

Year 1

Semester 1		
31414	Information Systems	6cp
31509	Computer Fundamentals[2]	6cp

Semester 2		
3xxxx	Programming subject[1]	6cp
31424	Systems Modelling[2]	6cp

Year 2

Semester 3		
31434	Database Design[2]	6cp
31512	Networking 1[2]	6cp

Semester 4		
3xxxx	Two elective subjects from IT Faculty	12cp

Recommended full-time program

Semester 1

31414	Information Systems	6cp
31509	Computer Fundamentals[2]	6cp
3xxxx	Programming subject[1]	6cp
31424	Systems Modelling[2]	6cp

Semester 2

31434	Database Design	6cp
31512	Networking 1[2]	6cp
3xxxx	Two elective subjects from IT Faculty	12cp

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[1] The programming subject may be one of:
  • 31508 Programming Fundamentals
  • 31429 Procedural Programming
  according to the student's background and interest.

[2] The prerequisites for the core subjects are that 31424 Systems Modelling must be taken before 31434 Database Design and 31509 Computer Fundamentals must be taken before 31512 Networking 1.

All students are permitted to take any modules they wish from the subject 31417 Computing Practice. These modules, which will not be liable for fees, will be additional to the standard course program and credit will not be given.

MATHEMATICAL SCIENCES

Master of Science in Operations Research

- ◆ *Course code: MM53*
- ◆ *Testamur title: Master of Science in Operations Research*
- ◆ *Abbreviation: MSc*
- ◆ *Course fee: $1,200 per 6-credit-point subject (local)*
  $6,500 per semester (international)

Operations research is also known as management science. It may be defined as the application of the methods of science to complex problems arising in the direction and management of large systems of people, materials and money in industry, business, government and defence. Problems typically dealt with include production scheduling, logistics, transportation planning, aircrew scheduling, inventory control, health management, environmental management and financial applications.

This course aims to prepare graduates for high-level professional work in the application of management science to the problems of modern society. The subjects in the program provide students with a suite of advanced techniques in such areas as optimisation, mathematical programming and simulation, together with skills for their effective utilisation in the workplace. A broad spectrum of case studies is used to support and strengthen the student's appreciation, understanding and application of operations research to high-level professional work in industries dealing with production, service, health, and all areas of business and finance.

Applicants for the course must be graduates who have completed studies in operations research or management science corresponding to the Graduate Diploma in Operations Research, or the Operations Research major of the BSc in Mathematics, or an equivalent course.

The course has a requirement of two years relevant work experience. Applicants not satisfying the academic prerequisites are advised to consider enrolling in the Graduate Diploma in Operations Research or the Graduate Certificate in Mathematical Sciences offered by the Department. All applicants should discuss their eligibility for entry with the Program Leader for Postgraduate Programs (Mathematics), and must complete an application form which includes a description of prior work experience.

Course structure

Students are required to complete 48 credit points comprising of two core subjects (each six credit points), 12 credit points of electives and a substantial project of 24 credit points. It is offered full time over two semesters or part time over four semesters. Part-time students should be aware that some attendance at day classes may be unavoidable.

Depending on demand, electives may be developed and offered within the Department of Mathematical Sciences in such areas as quantitative business management, neural networks, cybernetics, large-scale optimisation and scheduling, with varying mathematical prerequisites. Electives that are currently offered by the Department of Mathematical Sciences include 35542 Applied Mathematical Programming; 35544 Network Modelling; and 35563 Applied Simulation Modelling. The subjects in the Bachelor of Science (Honours) in Mathematics are also available for this purpose for suitably qualified students. Electives may also be chosen from the Faculty of Business. Applicants who must first undertake the Graduate Diploma in Operations Research may be able to combine elective choices from both courses to form a useful sequence of three or four subjects.

The project is the main component of the subject 35599 Report, extending over two semesters. Studies for the project will normally be related to the applicant's prior work experience. An oral presentation in the form of a seminar is also required.

Students will have their registration discontinued for failure to complete the course in three years from the time of registration in the case of a full-time student, or in four-and-a-half years in the case of a part-time student (not inclusive of periods of leave of absence) (Rule 3.3.7.1), or for recording any three failures in the course (unsatisfactory progress as defined by the Faculty Board resolution, FBMC/92/70) (Rule 3.3.7.2).

Course program

The program consists of the following subjects:

35545	Further Methods in Operations Research	6cp
35549	Case Studies in Management Science	6cp
35599	Report	24cp
3xxxx	Electives	12cp

Graduate Diploma in Applicable Mathematics

- *Course code: MM67*
- *Testamur title: Graduate Diploma in Applicable Mathematics*
- *Abbreviation: GradDipApplicMath*
- *Course fee: $1,200 per 6-credit-point subject (local)*
  $6,000 per semester (international)

The Graduate Diploma in Applicable Mathematics is designed to offer suitably qualified graduates the background in mathematics required to pursue further studies in an area of mathematics, and particularly in the area of mathematical finance. Students will be expected to have a sound background in mathematics and statistics to approximately second-year level.

The subjects in the Graduate Diploma include the necessary undergraduate mathematics background that will enable its graduates to proceed into the Bachelor of Mathematics and Finance (Honours) degree, provided an acceptable standard is reached. Exemption from some subjects, due to prior study, may be approved where warranted.

Students are required to complete 48 credit points, comprising of seven core subjects and one elective. The elective would generally be chosen from one of the major areas of Mathematics, Statistics or Operations Research, in the Bachelor of Science in Mathematics degree. The course is offered full-time over two semesters or part-time over four semesters. Part-time students should be aware that attendance at daytime classes for some subjects may be unavoidable.

Applicants for the Graduate Diploma should discuss their eligibility with the Program Leader for Postgraduate Programs (Mathematics). Those who have not completed the necessary prerequisites will be required to enrol in appropriate subjects, either as non-award students or in a Graduate Certificate in Mathematical Sciences.

Students will have their registration discontinued for failure to complete the course in eight semesters from the time of registration in the case of a part-time student, or four semesters from that time in the case of a full-time student, not inclusive of periods of leave of absence (Rule 3.2.6.1), or for any three failures in the course (unsatisfactory progress as defined by the Faculty Board resolution, FBMC/94/80) (Rule 3.2.6.2).

Course program

The course program consists of the following subjects:

35231	Differential Equations	6cp
35252	Statistics 2	6cp
35232	Advanced Calculus	6cp
35321	Analysis 1	6cp
35353	Regression Analysis	6cp
35322	Analysis 2	6cp
35361	Probability and Stochastic Processes	6cp
3xxxx	Elective	6cp

Graduate Diploma in Mathematics and Finance

- *Course code: MM66*
- *Testamur title: Graduate Diploma in Mathematics and Finance*
- *Abbreviation: GradDipMathFin*
- *Course fee: $1,200 per 6-credit-point subject (local)*
  $6,000 per semester (international)

The Graduate Diploma in Mathematics and Finance is designed to allow suitable graduates in one area of mathematics, say statistics or pure mathematics, to be retrained so that they will have sufficient knowledge of relevant aspects of financial modelling to enable them to participate authoritatively in the area of finance. Students will be expected to have a sound background in mathematics and statistics to first-year level.

The subjects in the Graduate Diploma range from necessary background material at undergraduate level through to Honours-level subjects in time-series analysis and financial modelling. Exemptions from subjects, due to prior study, may be approved where warranted.

Students are required to complete 48 credit points comprising of eight core subjects and one elective. The course is offered full time over three semesters or part time over four semesters. Part-time students should be aware that attendance at daytime classes for some subjects may be unavoidable.

Applicants for the Graduate Diploma should discuss their eligibility with the Program Leader for Postgraduate Programs (Mathematics). Those who have not completed the necessary prerequisites will be required to enrol in appropriate subjects, either as non-award students or in a Graduate Certificate in Mathematical Sciences.

Students will have their registration discontinued for failure to complete the course in eight semesters from the time of registration in the case of a part-time student, or four semesters from that time in the case of a full-time student, not inclusive of periods of leave of absence (Rule 3.2.6.1), or for any three failures in the course (unsatisfactory progress as defined by the Faculty Board resolution, FBMC/94/80) (Rule 3.2.6.2).

Course program

The program consists of the following subjects:

33401	Introductory Mathematical Methods	6cp
35252	Statistics 2	6cp
35361	Probability and Stochastic Processes	6cp
35384	Financial Modelling	6cp
35241	Optimisation 1	6cp
35353	Regression Analysis	6cp
35467	Time Series Analysis	4cp
35485	Advanced Financial Modelling	4cp
3xxxx	Elective	4cp

Graduate Diploma in Operations Research

- ◆ *Course code: MM52*
- ◆ *Testamur title: Graduate Diploma in Operations Research*
- ◆ *Abbreviation: GradDipOR*
- ◆ *Course fee: $1,200 per 6-credit-point subject (local)*
  $6,000 per semester (international)

This course is designed to train professional people in the application of operations research principles and methods. It may be regarded as a training or retraining course for graduates from a wide range of disciplines, provided they have a sound foundation in mathematics, statistics and computing to approximately first-year level. It is ideally suited for subsequent entry into the Master of Science in Operations Research, provided a suitable standard is attained and the work experience requirement is satisfied.

The subjects in the Graduate Diploma cover standard operations research techniques and their theoretical foundations. The range of topics and the level of presentation are commensurate with those found in senior undergraduate studies in this discipline.

Students are required to complete 48 credit points comprising six core subjects and two electives. The two electives may be combined into a single 12-credit-point project taken over two semesters. The course is offered full time over two semesters or part time over four semesters. For part-time students, attendance at daytime classes for some subjects may be unavoidable.

Applicants for the Graduate Diploma program should discuss their eligibility with the Program Leader for Postgraduate Programs (Mathematics).

Students will have their registration discontinued for failure to complete the course in eight semesters from the time of registration in the case of a part-time student, or four semesters from that time in the case of a full-time student, not inclusive of periods of leave of absence (Rule 3.2.6.1), or for any three failures in the course (unsatisfactory progress as defined by the Faculty Board resolution, FBMC/94/80) (Rule 3.2.6.2).

Course program

The program consists of the following subjects:

33401	Introductory Mathematical Methods	6cp
35241	Optimisation 1	6cp
35151	Statistics 1	6cp
35363	Simulation Modelling	6cp
35342	Optimisation 2	6cp
35340	Operations Research Practice	6cp
3xxxx	Electives	12cp

Graduate Diploma in Statistics

- ◆ *Course code: MM65*
- ◆ *Testamur title: Graduate Diploma in Statistics*
- ◆ *Abbreviation: GradDipStats*
- ◆ *Course fee: $1,200 per 6-credit-point subject (local)*
  $6,000 per semester (international)

The Graduate Diploma in Statistics aims to train graduates in the methods and principles of applied statistics. The course provides access to training or retraining in statistics to at least the level of skill attained by students completing the BSc in Mathematics degree with the Statistics major. Students will be expected to have some statistical and mathematical background.

A knowledge of statistical methodology is becoming ever more important for graduates in many disciplines. Degree courses in the sciences, in engineering and in business often do not provide the exposure to statistics which graduates find they need in employment. This course is suitable for such graduates and also

for those who have completed degrees in pure or applied mathematics without a major in statistics.

The subjects in the Graduate Diploma cover standard statistical techniques and their theoretical foundations. The range of topics and the level of presentation are commensurate with those found in senior undergraduate studies in this discipline.

Students are required to complete 48 credit points comprising of five core subjects and three electives. Two of these elective subjects may be combined into a single 12-credit-point project extending over two semesters. It is also possible to choose Honours level subjects as electives, depending on satisfaction of prerequisites at a suitable level.

The course is offered full time over two semesters or part time over four semesters. Part-time students should be aware that attendance at daytime classes for some subjects may be unavoidable.

Applicants for this course will be graduates from a variety of disciplines who satisfy the basic entry requirements. These consist of a knowledge of statistics and pure and applied mathematics equivalent to the subjects 35252 Statistics 2 and 35102 Mathematics 2. Prospective applicants will be assessed by the Program Leader for Postgraduate Programs (Mathematics), and those who have not completed the necessary prerequisites will be required to enrol in appropriate subjects, either as non-award students or as part of a Graduate Certificate in Mathematical Sciences.

Students will have their registration discontinued for failure to complete the course in eight semesters from the time of registration in the case of a part-time student, or four semesters from that time in the case of a full-time student, not inclusive of periods of leave of absence (Rule 3.2.6.1), or for any three failures in the course (unsatisfactory progress as defined by the Faculty Board resolution, FBMC/94/80) (Rule 3.2.6.2).

Course program

The program consists of the following subjects:

35170	Introduction to Computing	6cp
35353	Regression Analysis	6cp
35355	Quality Control	6cp
35356	Design and Analysis of Experiments	6cp
35361	Probability and Stochastic Processes	6cp
3xxxx	Electives	18cp

Graduate Certificate in Mathematical Sciences

- ◆ *Course code: MM56*
- ◆ *Testamur title: Graduate Certificate in Mathematical Sciences*
- ◆ *Abbreviation: none*
- ◆ *Course fee: $1,200 per 6-credit-point subject (local)[1]*

The Graduate Certificate in Mathematical Sciences has been developed in response to a demand for short courses in mathematics, statistics, operations research and computational mathematics. It provides those employed in industry with access to additional training or retraining in quantitative disciplines.

The course has a flexible structure and the wide range of subjects offered in the other postgraduate and undergraduate courses in the Mathematical Sciences is available to intending students. Students may undertake any sequence of subjects offered by the Department with a total value of 12 credit points, provided that individual subject prerequisites are satisfied. The course is offered part time over two semesters.

Applicants will normally be expected to hold a Bachelor's degree, or higher qualification, from a recognised tertiary institution. Applicants who do not possess such qualifications will be considered on an individual basis. Prior to their admission, all applicants will be required to discuss their preferred program of study with the Program Leader for Postgraduate Programs (Mathematics) in order to ensure that they have the requisite background knowledge for their chosen subject sequences.

Students will have their registration discontinued for failure to complete the course in three semesters from the time of registration in the case of a part-time student, or two semesters from that time in the case of a full-time student, not inclusive of periods of leave of absence (Rule 3.2.6.1).

Course program

A number of coherent subject sequences in the areas of mathematics, computational mathematics, operations research and statistics are possible. Samples of these are listed below. Some computing subjects require extra attendance for laboratory work. Details are given in the Subject Descriptions section of this handbook.

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[1] This course is not offered to international students.

Computational Mathematics

Sequence A
Theme: Elementary Numerical Methods

Presumed knowledge
Equivalent to introductory courses in calculus, linear algebra and differential equations, and an elementary knowledge of a symbolic algebra package such as *Mathematica*.

Program of study

35170	Introduction to Computing	6cp
35281	Numerical Analysis 1	6cp

Sequence B
Theme: Numerical Analysis

Presumed knowledge
Equivalent to introductory courses in calculus, linear algebra and differential equations, an elementary knowledge of the C language and a symbolic algebra package such as *Mathematica*.

Program of study

35281	Numerical Analysis 1	6cp
35382	Numerical Analysis 2	6cp

Mathematics

Sequence A
Theme: Differential Equations

Presumed knowledge
Equivalent to introductory courses in calculus and linear algebra.

Program of study

35102	Mathematics 2	6cp
35231	Differential Equations	6cp

Sequence B
Theme: Modern and Linear Algebra

Presumed knowledge
Equivalent to introductory courses in matrix algebra and discrete mathematics.

Program of study

35212	Linear Algebra	6cp
35314	Pure Mathematics 3B	6cp

Sequence C
Theme: Analysis with Applications to Probability Theory

Presumed knowledge
Equivalent to introductory courses in calculus, differential equations and linear algebra.

Program of study

35321	Analysis 1	6cp
35322	Analysis 2	6cp

Operations Research

Sequence A
Theme: Financial Modelling

Presumed knowledge
Equivalent to intermediate courses in calculus, linear algebra and statistics.

Program of study

35241	Optimisation 1	6cp
35340	Operations Research Practice	6cp

Sequence B
Theme: Techniques of Mathematical Programming

Presumed knowledge
Equivalent to intermediate courses in calculus and linear algebra.

Program of study

35241	Optimisation 1	6cp
35342	Optimisation 2	6cp

Sequence C
Theme: Simulation and Decision Support

Presumed knowledge
Equivalent to intermediate courses in calculus and statistics.

Program of study

35361	Probability and Stochastic Processes	6cp
35363	Simulation Modelling	6cp

Statistics

Sequence A
Theme: Analysis of Experimental Data

Presumed knowledge
Equivalent to introductory courses in calculus and statistics.

Program of study
35252	Statistics 2	6cp
35353	Regression Analysis	6cp

Sequence B
Theme: Industrial Applications of Statistics

Presumed knowledge
Equivalent to intermediate courses in calculus and statistics.

Program of study
35355	Quality Control	6cp
35361	Probability and Stochastic Processes	6cp

Sequence C
Theme: Mathematical Statistics

Presumed knowledge
Equivalent to intermediate courses in calculus and statistics.

Program of study
35356	Design and Analysis of Experiments	6cp
35361	Probability and Stochastic Processes	6cp

FACULTY RESEARCH DEGREES

General inquiries should be directed to:

University Graduate School
telephone (02) 9514 1523

or (within the Faculty)

Graduate Research and Liaison Officer
telephone (02) 9514 1806

Applicants for research degrees should discuss their proposed research with either the Associate Dean (Research, Policy and Planning), or their chosen supervisor before submitting applications. The Faculty's Graduate Research and Liaison Officer can assist applicants in contacting members of staff and in completing the application form.

COMPUTING AND INFORMATION TECHNOLOGY

Research areas

Areas of particular interest for work towards research degrees in the Faculty of Information Technology include:

- computer graphics, image processing
- computer performance evaluation
- computer-supported cooperative work
- distributed and object databases
- distributed multimedia
- distributed systems
- information processing strategy, systems management
- local networks and network interface technology
- logic in computer science
- machine intelligence, knowledge-based systems
- multiagent systems
- object technology
- parallel processing and transputers
- quality of systems and software: software process improvement
- semantics and design of programming languages
- usability of systems and software.

Computing Sciences research laboratories

Within the Department, a wide range of information technology research is supported by a variety of research laboratories. Graduate research students, academics, visiting researchers and research assistants undertake collaborative research within these laboratories. The quality and relevance of research in the laboratories is enhanced by well-established links, both with industry and with overseas research institutions.

The major laboratories are:

Parallel Processing Laboratory – examines and applies transputer technology to real-world tasks, distributed operating systems and compilation. The laboratory has a configuration of over 40 transputer systems (contact: Ury Szewcow).

Computer Graphics Laboratory – using seven Silicon Graphics workstations, this laboratory is concerned with the development of realistic images and computer animation. Other areas include efficient contour algorithms, human movement, image animation and textual modelling (contact: Dr Kevin Suffern).

Cooperative Systems Laboratory – focuses on the implementation and data modelling of distributed databases, client-server computing, cooperative workgroup systems, the development of methods for integrating databases with expert systems, the modelling of constraints, the development of design tools and the integration of groupware with data-bases (contact: Dr George Feuerlicht, Professor Igor Hawryszkiewycz or Professor John Debenham).

Software Research Laboratory – includes two groups:

- *Algorithms and Languages Group* – investigates programming languages and paradigms, logic in computer science, database theory, concurrency, software engineering and formal methods, and category theory (contact: Dr Barry Jay).
- *Artificial Intelligence Group* – interests include multiagent systems, case-based reasoning, cognitive modelling, knowledge engineering (contact: Professor John Debenham).

CRC Distributed Systems Technology Laboratory – the primary focus is on management security and performance for controlled and efficient access to the resources of distributed systems such as databases, collaboration software and distributed software tools (contact: Professor Michael Fry).

Distributed Multimedia Laboratory – examines technology, protocols and implementation issues for very high-band-width multimedia technology over computer networks. Work includes distance interaction of design, editing and performance groups and network traffic performance, supporting diverse components (contact: Professor Michael Fry).

Usability Laboratory – investigates the methods and measurement techniques for developing effective and usable human–computer interaction methods for different kinds of operating environments, including design and system development (contact: Dr Toni Robertson).

Doctor of Philosophy

- *Course code: MC54*
- *Testamur title: Doctor of Philosophy*
- *Abbreviation: PhD*
- *Course fee: HECS/scholarship (local)[1]*
  $7,500 per semester (international)

The Doctor of Philosophy (PhD) is intended for students who wish to pursue research at the highest level. Such research is expected to demonstrate significant originality and make a substantial contribution to computing knowledge. For specific areas of interest in research work in the Faculty of Information Technology, refer to the Faculty Research Degrees section.

Attendance pattern

The Doctor of Philosophy degree is available on both a full-time and a part-time basis. The normal duration of enrolment is three years for full-time attendance and six years for part-time attendance. Candidates who already possess a degree at the Master's level may be permitted to complete their PhD in two years of full-time research, or three years of part-time research. The maximum duration of enrolment is five years for full-time students and seven-and-a-half years for part-time students.

The Faculty of Information Technology has a strong preference for research work that proceeds at a full-time pace. This preference should not be seen as a deterrent to those students who wish to remain in employment. Students who are working in a full-time job are encouraged to select a topic for their research which is closely aligned with their professional work. Once such a topic has been selected, the Faculty usually requires that the student's employer provide a statement to the effect that at least half of the student's working week will be devoted to work which is directly relevant to the research. The student is then expected to contribute some of his or her own time to the project so that the total number of hours devoted to research is that expected of full-time attendance.

How to apply

Application forms for all postgraduate courses may be obtained from the UTS Student Info & Admin Centre. Applicants should hold a First Class or Second Class (Division 1) Honours degree with a major computing component,

[1] Fees will be levied in accordance with University policies and DETYA guidelines. Details will be available in early 2001.

or a Master's degree in an appropriate area, or have previously undertaken other postgraduate studies in computing. Prospective applicants are expected to have developed interests in a specific area of research, and should have one or more outline proposals for research work in that area. Before submitting a formal application for admission to this degree course, applicants should first seek the approval of the Faculty for their proposed research work. To gain this approval, applicants should initially:

- send a summary proposal of approximately 1,000 words to the Associate Dean (Research, Policy and Planning), Faculty of Information Technology, containing references to seminal works in the area of proposed research. If the proposal is appropriate for the Faculty, the Director will then refer the applicant to a suitable member of staff for further detailed discussion, or

- approach a suitable member of the Faculty's academic staff directly and discuss the proposed research area.

All Doctor of Philosophy students at UTS are required to have at least two supervisors for their research work, one of whom should be an academic staff member of the University and, normally, one of whom should hold a Doctoral degree. Of the two supervisors, one will be the principal supervisor and the other the co-supervisor.

Prospective applicants should seek agreement from a member of the Faculty's academic staff to act as a (principal) supervisor for the proposed research if the application is successful. Once this agreement has been obtained, applicants may then apply formally for admission by completing an Application for Candidature – Doctoral Degrees form and the Faculty's Supplementary Doctoral Application form. These forms must be signed by the applicant, the proposed supervisor and the Head of Department.

Progress reports

All Doctor of Philosophy students are required to submit, in consultation with their supervisors, a progress report at the end of each semester. The University Graduate School contacts each`student and their supervisor(s) to initiate this process. Students are also required to complete a Doctoral Assessment and seminar.

Submission of thesis

All candidates for the degree of Doctor of Philosophy should give the Registrar two months' written notice of intention to submit their written thesis. Appropriate forms and the information brochure *Presentation and Submission of Theses for Higher Degrees* are available from the University Graduate School.

Master of Science

- ◆ *Course code: MC51*
- ◆ *Testamur title: Master of Science*
- ◆ *Abbreviation: MSc*
- ◆ *Course fee: HECS/scholarship (local)[1]*
  $7,500 per semester (international)

The Master of Science degree enables graduates to extend and deepen their knowledge of a specialised area in computing by undertaking research under the supervision of a member of the academic staff. For specific areas of interest in research work in the Faculty of Information Technology, refer to the Faculty Research Degrees section.

Attendance pattern

This degree is available on both a full-time and a part-time basis. The normal duration of enrolment for this degree is two years for full-time attendance or three years for part-time attendance. The maximum time to complete the course is three years for full-time students and four-and-a-half years for part-time students.

The Faculty of Information Technology has a strong preference for research work that proceeds at a full-time pace. This preference should not be seen as a deterrent to those students who wish to remain in employment. Students who are working in a full-time job are encouraged to select a topic for their research which is closely aligned with their professional work. Once such a topic has been selected, the Faculty usually requires that the student's employer provide a statement to the effect that at least half of the student's working week will be devoted to work which is directly relevant to the research. The student is then expected to contribute some of his or her own time to the project which brings the total number of hours devoted to research within that expected of full-time attendance.

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[1] Fees will be levied in accordance with University policies and DETYA guidelines. Details will be available in early 2001.

How to apply

Application forms for all postgraduate courses may be obtained from the UTS Student Info & Admin Centre. Applicants should hold a First Class or Second Class (Division 1) Honours degree with a major computing component, or have previously undertaken other post-graduate studies in computing. Prospective applicants are expected to have developed interests in a specific area of research, and should have one or more outline proposals for research work in that area. Before submitting a formal application for admission to this degree course, applicants should first seek the approval of the Faculty for their proposed research work. To gain this approval, applicants should initially:

- send a summary proposal of approximately 1,000 words to the Associate Dean (Research, Policy and Planning), Faculty of Information Technology, containing references to seminal works in the area of proposed research. If the proposal is appropriate for the Faculty, the Director will then direct the applicant to a suitable member of staff for further detailed discussion, or

- approach a suitable member of the Faculty's academic staff directly and discuss the proposed research area.

Every Master of Science student at UTS is required to have at least two supervisors for their research work, one of whom should be an academic staff member of the University. Of the two supervisors, one will be the principal supervisor and the other the co-supervisor.

Prospective applicants should seek agreement from a member of the Faculty's academic staff to act as a supervisor for the proposed research if the application is successful. Once this agreement has been obtained, applicants may then apply formally for admission by completing an Application for Admission – Graduate Courses form and the Faculty's Details of Proposed Study form. These forms must be signed by the applicant, the proposed supervisor and the Head of Department.

Progress reports

All thesis students are required to submit, in consultation with their supervisors, a progress report at the end of each semester. The University Graduate School contacts each student and their supervisor(s) to initiate this process.

Submission of thesis

Each candidate for the degree of Master of Science should give the Registrar two months' written notice of their intention to submit their written thesis. Appropriate forms and the information brochure *Presentation and Submission of Theses for Higher Degrees* are available from the University Graduate School.

MATHEMATICAL SCIENCES

The Master of Science (by thesis) (MSc) and Doctor of Philosophy (PhD) degrees provide the opportunity for graduates to extend and deepen their knowledge in specialised areas of mathematics by undertaking research under the supervision of a member of academic staff.

The main interests within the Department of Mathematical Sciences are in quantitative finance and statistics. Particular interests and specialisations exist in the following areas:

Quantitative Finance

Financial markets and asset price modelling; capital structure; dividend policy; investment policy.

Experimental Design and Data Analysis

Fractional factorial designs; randomised response designs; super-saturated designs; analysis of data from medical trials; process capability indices.

Mathematics and Statistics Education

Theories of learning; assessment; ethnomathematics; use of technology in undergraduate mathematics.

Computational Number Theory

Numerical Integration

Scheduling Theory

Wave Theory

Doctor of Philosophy

- ◆ *Course code: MM54*
- ◆ *Testamur title: Doctor of Philosophy*
- ◆ *Abbreviation: PhD*
- ◆ *Course fee: HECS/scholarship (local)[1]*
  $7,500 per semester (international)

The Doctor of Philosophy (PhD) program provides an opportunity for graduates to acquire high-level research skills and substantially deepen their knowledge in an area of the mathematical sciences by working under the guidance of a supervisor. The research program entails survey and mastery of a large body of literature in the chosen topic, together with a substantial body of high-level original work by the candidate. Students are also required to present seminars during the time of their enrolment and at the completion of their program.

The course is offered in full-time and part-time modes. For full-time enrolments, the normal duration of the program is three years; for part-time enrolments, it is six years. It is expected that part-time students will be able to devote 20 hours per week to work towards the degree. All students are expected to maintain regular contact (at least weekly) with their supervisor.

Master of Science

- ◆ *Course code: MM51*
- ◆ *Testamur title: Master of Science*
- ◆ *Abbreviation: MSc*
- ◆ *Course fee: HECS/scholarship (local)[1]*
  $7,500 per semester (international)

The Master of Science (MSc) program provides an opportunity for graduates to acquire research skills and deepen their knowledge in some areas of the mathematical sciences. Students work under the guidance of a supervisor who is a member of the full-time academic staff of the Department of Mathematical Sciences. The research program entails survey and mastery of a substantial body of literature in the chosen topic, together with original work from the candidate. The degree is examined through the presentation of a thesis. Students are also required to present seminars during the time of their enrolment and at the completion of their program.

The course is offered in full-time and part-time modes. For full-time enrolments, the normal duration of the program is two years; for part-time enrolments, it is four years. It is expected that part-time students will be able to devote 20 hours per week to work towards the degree. All students are expected to maintain regular contact (at least weekly) with their supervisor.

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[1]   Fees will be levied in accordance with University policies and DETYA guidelines. Details will be available in early 2001.

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[1]   Fees will be levied in accordance with University policies and DETYA guidelines. Details will be available in early 2001.

SUBJECT DESCRIPTIONS

31136

Preparation and Review of IT Experience

6cp; corequisite(s): 31137 IT Experience 1; available only to students of the Diploma in IT Professional Practice

This subject involves formal planning of and regular reporting on your work experience undertaken in 31137 IT Experience 1. There is particular emphasis on the skills you hope to gain, both technical and social.

31137

IT Experience 1

0cp; prerequisite(s): 31414 Information Systems; 31415 Principles of Software Development A; 31416 Computer Systems Architecture; 31417 Computing Practice; 31424 Systems Modelling; 31429 Procedural Programming; 31434 Database Design; 31436 Systems Software and Networks, or equivalent; corequisite: 31136 Preparation and Review of IT Experience

To pass this subject and 31139 Industrial Experience 2 students must complete a total of nine months' full-time employment in suitable IT related work.

31138

Review of IT Experience

6cp; prerequisite(s): 31136 Preparation and Review of IT Experience; 31137 IT Experience 1; corequisite 31139 IT Experience 2; available only to students of the Diploma in IT Professional Practice

This subject involves continued regular reporting and concluding structured reflection on your work experience undertaken for 31139 IT Experience 1. Assessment will also include a report and an oral presentation given to fellow students on completion of your work experience.

31139

IT Experience 2

0cp; prerequisite(s): 31136 Preparation and Review of IT Experience; 31137 IT Experience 1; corequisite 31138 Review of IT Experience

This subject is a continuation of 31137 IT Experience 1.

31140

Introduction to Computer Graphics

6cp; prerequisite(s): 31425 Principles of Software Development B; 31429 Procedural Programming

This subject provides a thorough introduction to the computer representation, manipulation and display of pictorial information. Topics covered include: passive and interactive graphics; hardware devices and programming; mathematical tools for two- and three-dimensional graphics; two- and three-dimensional graphics and algorithms; graphics standards; human–computer interaction and graphical design; application areas of computer graphics.

31352

Project

6cp; prerequisite(s): 31444 Systems Design and Development or equivalent

This project is intended to give students experience in working independently and, typically, responsibility for the development of a small system from initial analysis to user documentation. Project may be drawn from any area of information technology. Each project is supervised by a member of academic staff.

31414

Information Systems

6cp

This subject deals with information systems in their organisational context.

The effects of information systems on society, organisations and individuals are discussed. Examples from typical organisations are used to illustrate information systems concepts. Techniques for analysing and describing user requirements are introduced.

Throughout the subject there is an emphasis on human activities, the importance of the user in the analysis phase and the usability of systems. Another theme is communication skills i.e. the ability of the analyst and designer of an information system to interview, write reports and manuals, design efficient and effective interfaces and communicate their design ideas to others.

31415
Principles of Software Development A
6cp; corequisite(s): 31417 Computing Practice

The principles and practice of object-oriented software construction are introduced using the programming language Eiffel. Topics include the object-oriented concepts of classes, objects, clients and suppliers, inheritance, genericity, dynamic binding and polymorphism.

31416
Computer Systems Architecture
6cp

This subject introduces students to the internal organisation and operation of computer systems. The functions, characteristics and inter-relationships of the hardware components of computer systems will be studied. Other topics include binary arithmetic, data representation, digital logic, and data transmission. This subject will provide a sound basis for understanding how computer hardware supports higher-level software constructions.

31417
Computing Practice
6cp

This subject deals with the principles of responsible computer use; computer skills; touch typing; DOS commands; Microsoft Windows; introductory word processing; spreadsheets and graphics; the UNIX environment, FTP, telnet, electronic mail; file conversions; backups; introductory library research skills; and introduction to report writing.

31424
Systems Modelling
6cp

This subject introduces information system concepts, including their static and dynamic components. It describes how these concepts can be used to model information systems to correctly capture their structure and needs. It outlines how the ability to capture information about the system in ways understood by its eventual users will improve the final quality of the system.

The subject introduces analysis using various approaches found in contemporary system development, including object-oriented methods, data flow diagrams and Entity-Relationship modelling, and describes the relationships between these techniques and their application.

31425
Principles of Software Development B
6cp; prerequisite(s): 31415 Principles of Software Development A or another programming subject

The specification and implementation of stacks, queues, lists and trees are discussed as abstract data types. Formal mathematical specification of software and program correctness are discussed. Program-testing methods are emphasised throughout the subject, as are aspects of software quality such as usability.

31428
Quantitative Modelling
6cp

This subjects covers reasoning with data, descriptive statistics, probability theory, distributions, estimation, hypothesis testing, spreadsheet exercises, report writing, principles of modelling, queuing models, utility models, adaptive methods, and case studies of some basic models.

31429
Procedural Programming
6cp; prerequisite(s): 31415 Principles of Software Development A

This subject deals with top-down structured program design techniques and their application to the development of commercial programming applications. Emphasis will be on the quality and usability of the resultant systems. Debugging and testing skills are developed. The language used is C.

31434
Database Design
6cp; prerequisite(s): 31424 Systems Modelling

This subject introduces the students to basic database design and implementation concepts. Database design techniques, including relational design and E-R analysis, are presented. Database programming using SQL is covered in lectures and supported by practical exercises. Object database and distributed database concepts are introduced.

31436
Systems Software and Networks
8cp; prerequisite(s): 31429 Procedural Programming; 31416 Computer Systems Architecture

This subject builds on 31416 Computer Systems Architecture to provide an understanding of the operating system, and communications

hardware and software that provide support for user applications. Particular attention is paid to the role of systems software in distributed systems.

31443
Distributed Databases and Client/Server Computing
6cp; prerequisite(s): 31434 Database Design

This subject introduces the students to basic distributed databases and client/server concepts. The classical approach to distributed databases is described in detail, and supported with both theoretical and practical exercises. Modern client/server and database server techniques are introduced.

31444
Systems Design and Development
10cp; prerequisite(s): 31434 Database Design; corequisite(s): 31436 Systems Software and Networks

This is a project-based subject that guides students through an information systems development process. The requirements for the information system are specified in a series of Use Cases. The development involves designing the user interface and data system and then designing and implementing the system. The emphasis throughout the development is on meeting the user's requirements, implementing a distributed solution and integrating the new systems with the existing information systems infrastructure. Attention to the quality of the system outcomes is maintained throughout the development process. Students will work in managed teams of 10. There are no formal lectures and no exams in this subject; staff/student contact takes place at regular structured project meetings and discussion meetings. Students are expected to have at least four hours of contact with their team each week and, given that this is a 10-credit-point subject, to do significant work outside of this contact time.

31454
Project Management and the Professional
6cp; prerequisite(s): 31444 Systems Design and Development

This subject covers the management of the development and implementation of information technology solutions, with particular emphasis on information systems project management, managing software quality assurance and the professional ethics of software developers.

31455
Software Development Case Study
12cp; prerequisite(s): 31444 Systems Design and Development

In the first semester, lectures will run in two strands: one devoted to projects, and the other to automata theory and new theory and skills. Laboratories will work on the projects.

The major project will incorporate the following stages: modular decomposition of the system; development of interfaces to the user (GUIs), between modules, to class libraries and to other applications (code-wrapping); coping with change of specifications; detailed coding; and verification, documentation and testing. This is a full-year subject.

31464
Information Technology Planning and Design
6cp; prerequisite(s): 31428 Quantitative Modelling; 31436 Systems Software and Networks; 31444 Systems Design and Development; 31454 Project Management and the Professional

This subject is a capstone subject for the course and incorporates knowledge gained in previous subjects, including industrial experience. Students are required to work in groups to produce a large report based on case study material. The objective is to produce a strategic solution to the problem presented in the case study involving both planning and design. The subject emulates the commercial environment in that students work in project groups and hold weekly project review meetings. A presentation to management occurs at the end of the subject.

31507
Australian IT Industry
6cp

An overview of information technology in Australia. Key market areas and current trends will be studied, as well as the global nature of information technology.

31508
Programming Fundamentals
6cp

Students learn programming concepts, and learn to write medium-sized programs in an object-oriented language.

31509

Computer Fundamentals

6cp

This subject introduces students to the internal organisation and operation of computer systems. The functions, characteristics and inter-relationships of the hardware components of computer systems will be studied. Other topics include binary arithmetic, data representation, digital logic, and data transmission. This subject will provide a sound basis for understanding how computer hardware supports higher-level software constructions.

31510

Operating Systems

6cp; prerequisite(s): 31429 Procedural Programming

This subject introduces students to modern operating systems, and shows how the systems support applications programs.

31511

Systems Design

6cp; prerequisite(s): 31424 Systems Modelling

This subject focuses on the user and business aspects of systems design. User interface issues cover dialogue, screen, report and forms design, as well as designing and writing user documentation. Integration with business environment includes business procedures, security, control and implementation. A variety of design and implementation strategies are introduced, such as prototyping and CASE tools.

31512

Networking 1

6cp; prerequisite(s): 31509 Computer Fundamentals

This subject introduces students to data communications, emphasising the Physical, Data Link and Network Layers of the OSI Model. It emphasises the problems of providing a physical local area network, introduces a range of communications equipment, and addresses the problems of message delivery through a network. A range of upper layer topics is also introduced. The course material is supported by a range of hands on practical sessions.

31513

Networking 2

6cp; prerequisite(s): 31512 Networking 1 or equivalent

This subject examines, in detail, the role and operation of routers in a range of computer networks, but with a primary emphasis on local area networks. A range of routing protocols is discussed. The course material is supported by extensive hands on practical work. Network management is also introduced.

31514

Computing Theory

6cp

This subject introduces students to some of the theory underlying computing science. It includes such topics as formal methods and computational complexity.

31515

Introduction to Australian IT Industry

6cp

This subject introduces students to the language, history and culture of Australia. It also introduces students to academic study in Australia.

31516

Networking Fundamentals

6cp

Computer networks have taken a major role in many modern organisations and business enterprises, and indeed, in everyday life. This subject introduces students to the fundamentals of data communications and computer networks, and imparts an understanding of the principles and practices of computer networking. The core set of protocols employed on the global Internet, TCP/IP, will be studied, and students will learn the mechanisms of the support which networks provide to net-based application programs.

Taken by itself, this subject provides a 'breadth first' introduction to networking. As part of a networking sub-major, this subject provides a firm foundation for other subjects that deal with distributed applications and networked organisations.

31601

Programming for Performance

6cp; prerequisite(s): 31425 Principles of Software Development B or equivalent; 31429 Procedural Programming

FISh is a new programming language developed at UTS which combines a high level of abstraction (no pointers!) with efficient code. Latest experiments shows quicksort in FISh is twice as fast as in C!

This subject will appeal to (computer) scientists and (software) engineers who want: broader or deeper knowledge of algorithms; exposure to the latest theoretical developments; and the opportunity to connect to an exciting research project.

Assessment will be by assignment and project. The assignment will test understanding of basic concepts. The project will implement in FISh an algorithm or software library chosen by the student in consultation with the coordinator.

31603

3D Computer Animation

6cp; prerequisite(s): 31140 Introduction to Computer Graphics

This subject covers the major areas of 3D computer animation. It provides students with the opportunity to learn a major commercial 3D modelling, animation, and rendering package. Students will also gain experience with Silicon Graphics workstations and the Irix environment. The subject also covers the principles and practice of pre-production planning, production management, and post-production of an animation project. The subject is project-based, and each student will develop an animation of their choice.

31605

Computer Graphics Rendering Techniques

6cp; prerequisite(s): 31140 Introduction to Computer Graphics

This subject covers the major rendering techniques used for image synthesis in computer graphics: scan-line algorithms, ray tracing, and radiosity. Topics covered include shading and illumination models, the scan conversion of graphics primitives, recursive ray tracing, textures, anti-aliasing, shadows, constructive solid geometry, acceleration techniques for ray tracing, and radiosity for diffuse and specular environments.

31606

Virtual Communities

6cp

This subject describes ways in which computer networking components can be integrated into workspaces that foster virtual communities. It first concentrates on the formation of virtual communities that focus on common interests of their members. It considers factors that influence the growth and success of such communities both within large enterprises and within widely distributed community groups. The subject then describes ways to use information technology to combine a variety of components into workspaces that support such communities.

31696

Industrial Training (F/T)[1]

0cp; prerequisite(s): 31414 Information Systems; 31415 Principles of Software Development A; 31416 Computer Systems Architecture; 31417 Computing Practice; 31424 Systems Modelling; 31429 Procedural Programming; 31434 Database Design; 31436 Systems Software and Networks or equivalent

For subject details see 31697 Industrial Training (F/T).

[1] For pre-2000 students only.

31697

Industrial Training (F/T)[1]

0cp; prerequisite(s): 31696 Industrial Training (F/T); (first semester)

The first and second semesters of Industrial Training are a compulsory requirement for the course. All full-time students must enrol in these subjects and obtain a minimum of nine months of full-time employment. Students must normally have completed the equivalent of at least four full-time semesters before obtaining employment.

[1] For pre-2000 students only.

31698

Industrial Training (P/T)[1]

0cp; prerequisite(s): 31414 Information Systems; 31415 Principles of Software Development A; 31416 Computer Systems Architecture; 31417 Computing Practice; 31424 Systems Modelling; 31429 Procedural Programming; 31434 Database Design; 31436 Systems Software and Networks or equivalent

For subject details see 31699 Industrial Training (P/T).

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[1] For pre-2000 students only.

31699

Industrial Training (P/T)[1]

0cp; prerequisite(s): 31698 Industrial Training (P/T) (first year)

The first and second years of Industrial Training are a compulsory requirement for the course, normally taken for a total of four semesters in Stages 5 and 6. All part-time students must enrol in these subjects and obtain a minimum of 18 months of full-time employment.

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[1] For pre-2000 students only.

31718

Contemporary Information Technology 1

6cp

This is a self-paced learning subject that provides basic skills students will use in a variety of other subjects and in industry – including word processing, spreadsheets, graphics, email etc. The self-paced learning will be complemented by lectures from partner organisations about the industry and the first industry semester.

31722

Commercial Programming

5cp; prerequisite(s): 31414 Information Systems; 31415 Principles of Software Development A

The subject deals with commercial structured design techniques and commercial programming in either a batch or online environment. Students will be taught the design technique and language of the particular industry organisation using approved assignment work.

31735

Information Systems and Organisation Development

6cp

This subject introduces theories dealing with the behaviour of people in organisations, the structure of organisations, and the relation between the two. Systems thinking is used to bring these views together as a basis for organisation development in an environment changing through the influence of information systems.

31736

Business Processes and IT Strategy

6cp; 3hpw

This subject aims to provide students with the skills and knowledge required to creatively plan for the strategic use of information systems in organisations. Students will be provided with an awareness of the problems in developing corporate strategies in general, and information technology strategies in particular. Their skills in the selection and use of information technology planning methods will be developed. They will learn how to use methods designed to analyse and restructure organisational processes through the innovative use of information systems technology. Current proposals for organisational restructuring are introduced and evaluated through comparison with previous theories of restructuring.

31743

Machine Learning

6cp; prerequisite(s): 31428 Quantitative Modelling

This subject is concerned primarily with machine learning: automatic construction of computable models from data. Symbolic and non-symbolic methods are studied. Topics include: statistical learning, clustering and correlations; neural networks methods; genetic algorithms; genetic programming; Shannon information; rule induction; and first-order learning.

31744

Case-based Reasoning

6cp

This subject builds on fundamental work in knowledge technology and introduces students to the concepts of case-based reasoning; neural architecture; human memory; semantic nets; memory indexing; case-based

reasoning; case finding; case evaluation; case adaptation; building a case base; planning – adaptation, correctness; case-based planning; expectations; and explanation-based learning.

31745
Knowledge-based Systems

6cp; prerequisite(s): 31743 Machine Learning or 31744 Case-based Reasoning

This subject addresses the important issues relating to the design of flexible Knowledge-Based Systems (KBS). These include understanding analytical techniques for KBS, bases for deep-level representation of the world, knowledge acquisition techniques, design principles and case studies of how these principles are implemented in the current KBS.

31746
Artificial Intelligence Applications

6cp; prerequisite(s): 31743 Machine Learning or 31744 Case-based Reasoning

This subject builds on fundamental work in knowledge technology and introduces students to issues in building a substantial artificial intelligence system. Use of artificial intelligence languages. Knowledge acquisition. Application selection. Knowledge engineering, computer-assisted knowledge engineering. Designing for maintainability. Truth maintenance systems. Review of artificial intelligence applications.

31748
Programming on the Internet

6cp; prerequisite(s): 31436 Systems Software and Networks or equivalent

The Internet and the World Wide Web are revolutionising software development with multimedia-intensive, platform-independent code for conventional Internet-, Intranet- and Extranet-based applications. This subject carefully explains how to program multi-tiered, client/server, database-intensive, web-based applications. Particularly, it involves programming in Java, website administration, HTML authoring, CGI programming, website design tools, XML and e-commerce.

31749
Internet Commerce

6cp

This subject aims to give students exposure to Internet commerce and will develop an understanding of the stakeholders and their capabilities and limitations in the strategic convergence of technology and business. Topics will include business models for Internet commerce, security, and legal and ethical issues. Students will develop skills in identifying the advantages and disadvantages of the various electronic payment options. Students will complete computer-based activities on Internet commerce.

31750
Intelligent Agents in Java

6cp; prerequisite(s): 31748 Programming on the Internet or an equivalent knowledge of programming in Java

This subject introduces students to the concepts of agent computing, and applies those concepts in the context of intelligent Internet-based systems. Students will gain sufficient knowledge to be able to take more specialised subjects in Internet-based computing and artificial intelligence. By the end of this subject, students should be able to design a simple intelligent agent and to implement a simple intelligent agent in Java.

31756
Project Management

5cp; prerequisite(s): 31444 Systems Design and Development

This subject provides students with the practical knowledge and skills that are necessary to effectively manage project teams and software development projects. The major topics are: planning a software project; software time and cost estimation; controlling a software project; development aids and alternatives; and leadership and people management. This subject will provide an essential understanding of project management issues and identify the knowledge required of a project manager in the IT industry.

31769
Contemporary Information Technology 2

4cp; prerequisite(s): 31718 Contemporary Information Technology 1

This subject covers topical issues in the development, implementation and use of information systems, and the professionalism, ethics and social responsibility in the IT industry.

31770

Industry Project 1

5cp

This subject provides students with an understanding of the function of the Information Systems Department (IS) in an organisation and also of at least one user business function serviced by IS. Understanding is developed through a number of strategies such as interviewing, observation and work experience. Students will be taught human communication skills in conjunction with the project work, with a special emphasis on oral and written communication. Training will also be provided in a variety of development tools used in the information systems development process in order to build up a defined skills profile in conjunction with the subject '31790 Industry Project 2.

31771

Business Requirements Analysis

5cp; prerequisite(s): 31414 Information Systems

Topics in this subject include: applications of systems analysis (data flow diagrams, relational modelling etc.) in a business setting; the roles of the business analyst and the systems analyst; systems research and requirements analysis (interviewing, document analysis etc.) for data processing, management information systems etc. top-down enterprise-wide perspective; evolution of the business environment; business, product and other life cycles; and industry case studies.

31777

Human–Computer Interaction

6cp; prerequisite(s): 31444 Systems Design and Development or equivalent

This subject focuses on the design, evaluation and implementation of interactive computing systems for human use within actual situations. Students will gain an understanding of human–computer interaction (HCI) principles, including the main concepts, tools and techniques available to build user-centred systems. This subject considers the effects on use of the different metaphors for human activity that designers use in their systems and how user-centred design and evaluation methods can improve the useability of computer systems.

31778

Resources Management for IT Professionals

6cp

This subject aims to instil the knowledge and skills required for effective management of hardware and software resources within an information systems organisation. The major topics include: resource acquisition; developing software; workplace environments; hardware and software security; operations management; and contracting and outsourcing.

31779

Applications of Information Technology 1

5cp; prerequisite(s): 31414 Information Systems

Formal and practical exposure to, and understanding of, a variety of specific applications of information technology, such as management information systems, databases, decision support systems, process control, graphics etc. are covered in the subject. Subject material will complement that of 31789 Applications of Information Technology 2 to ensure a common level of experience for all students. This is an industry subject for Bachelor of Information Technology.

31781

Business Systems Design

5cp; prerequisite(s): 31424 Systems Modelling or 31511 Systems Design

Topics in this subject include: understanding systems design in a business setting; performance and quality criteria; alternative implementation strategies; approaches to systems construction and estimation (including package evaluation and prototyping); implementation issues; productivity issues; methods engineering; information technology in business; industry and product differences; and case studies. This is an industry subject for BInfTech.

31789

Applications of Information Technology 2

5cp; prerequisite(s): 31779 Applications of Information Technology 1

Formal and practical exposure to, and understanding of, a variety of specific applications of information technology, such as management information systems, databases, decision support systems, process control, graphics etc. are covered in this subject. Subject material will

complement that of 31779 Applications of Information Technology 1 to ensure a common level of experience for all students.

31790

Industry Project 2

5cp; prerequisite(s): 31770 Industry Project 1

Students in this subject gain practical 'hands-on' experience of the role of members of an information systems development team in relation to business organisational goals and objectives; and are incorporated as members of a project team in a sponsoring company. Training will also be provided in a variety of development tools in order to build up a defined skills profile in conjunction with the subject 31770 Industry Project 1. Students will also undertake a group investigative project focusing on an issue of current concern to the IT industry.

31860

Object-oriented Programming and C++

6cp; prerequisite(s): 31424 Systems Modelling; 31429 Procedural Programming or equivalent

This subject introduces ANSI C++ as a language to implement object-oriented programming. The subject covers objects, classes, inheritance, polymorphism and memory management in C++. Students will build upon their object-oriented experience in Eiffel, and their syntax knowledge of C.

31876

Operating Systems Facilities

6cp; prerequisite(s): 31436 Systems Software and Networks or equivalent

The development of applications to make use of the facilities offered by an operating system offering support for a graphical user interface, such as Microsoft Windows or Macintosh, will be covered in this subject. Included is the methodology involved in building applications that are driven by user actions such as the mouse as well as input from a keyboard. Issues related to inter-application communication will also be explored.

31902

Auditing the Computer

6cp; prerequisite(s): 22615 Accounting Information Systems

Topics covered include: audit concepts and techniques in the EDP audit field; control measures that must be embedded in computer accounting and information systems; different systems of control: administrative, operational and security; audit techniques and the DP audit function; and risk analysis, quality assurance.

The subject emphasis is oriented to control measures possible and desirable in various computer systems e.g. billing, creditors, payroll etc. and non-monetary information systems.

31904

Systems Programming

6cp; prerequisite(s): 31429 Procedural Programming

This subject enhances the student's C and UNIX system knowledge. The student learns advanced C features, UNIX system calls, system utilities, shell and perl programming.

31916

Cognitive Modelling

6cp

This subject examines recent developments in cognitive science. It brings together research from: psychology, neurophysiology, philosophy and AI. It investigates mechanisms and models underlying intelligent and adaptive behaviour with a view to their use in system design. Topics include philosophy of the mind, learning paradigms, memory systems, attention, neurophysiology, neural assemblies, feature discovery and identification, physical symbol hypothesis and Human Information Processing, and AI technologies.

31917

Commercial Programming in Cobol

6cp; prerequisite(s): 31429 Procedural Programming

The subject deals with top-down structured program design techniques, and their application to the development of commercial programming applications. The emphasis will be on the quality and usability of the resultant systems. Debugging and testing skills will be developed. The language used will be COBOL.

31919

Distributed Software Programming

6cp; prerequisite(s): 31436 Systems Software and Networks or equivalent and 31904 Systems Programming or equivalent

This subject builds on material learned in 31436 Systems Software and Networks and 31904 Systems Programming. Students apply the knowledge and skills obtained in those subjects to explore the design and construction of Distributed Software Applications. Skills in

the use of network communication libraries, thread and RPC libraries are developed. At the present time, the C language and the UNIX environment are used.

31921
Objectbases
6cp; prerequisite(s): 31434 Database Design

This subject introduces the students to OODB concepts. It reviews the basic OO principles and discuss their application to databases. The theoretical discussion of the topic will be supported with practical exercises using a commercially available OODBMS.

31922
Object-oriented Methodologies
6cp; prerequisite(s): 31424 Systems Modelling

This subject introduces the object-oriented methods of analysing the problem domain and creating an implementation-independent formal representation of the system requirements. Elements of the object-oriented analysis (OOA) process, OOA representation and OOA complexity management are introduced and compared with the related concepts of structured analysis methodologies. The differences between the two approaches, and the advantages and disadvantages of each of them, are discussed. While UML is predominantly used, various object-oriented modelling methodologies are compared and their applicability to different application domains is assessed. The transition from implementation independent results of the OOA to the object-oriented design (OOD) for different implementation platforms is also covered.

31925
Smalltalk
6cp; prerequisite(s): 31415 Principles of Software Development A; 31424 Systems Modelling

This subject provides an introduction to the Smalltalk programming language and environment. Topics include the syntax and semantics of Smalltalk, the Smalltalk programming tools, the Smalltalk class library, Smalltalk programming style and design, and adding graphical interfaces to Smalltalk programs.

31927
Applications Development with Visual Basic
6cp; prerequisite(s): 31414 Information Systems; and one of 31415 Principles of Software Development A or 31429 Procedural Programming; corequisite(s): 31424 Systems Modelling or 31434 Database Design

This subject introduces event-driven programming. Students will use Visual Basic to build an interactive system. The system will be designed using dialogue-oriented prototyping. Students will also learn how to connect to various application packages using OLE.

31928
Applications Development with Delphi
6cp; prerequisite(s): 31414 Information Systems; and one of 31415 Principles of Software Development A or 31429 Procedural Programming; corequisite(s): 31424 Systems Modelling or 31434 Database Design

This subject aims to give students exposure to the development of user-orientated applications using visual programming languages. Students will be required to apply software tools and packages which have different strengths and weaknesses to create an application. The technical environment for this subject is Borland Delphi and a database package.

31931
Software Quality Assurance
6cp; prerequisite(s): 31424 Systems Modelling or equivalent

The subject aims to provide students with the practical knowledge and skills that are necessary to effectively measure and control the quality of software products. Major topics include: quality assurance principles; quality metrics; verification, validation and testing; implementing quality assurance, and software engineering methods and tools.

31950
Networked Enterprise Design
6cp

This subject describes evolution of systems towards distributed business environments with more emphasis on processes that require people to work together over distance. It describes how people work together and the changes to work practices resulting from the distribution of such work. The subject covers collaboration technologies such as email,

video-conferencing, co-authoring and work-flows needed to support distributed business processes. The subject emphasises the design process, describing how to choose and implement collaborative technologies based on systems such as the World Wide Web or Lotus Notes to provide business benefits.

32106
Object-oriented Process
6cp; prerequisite(s): 32536 Object-oriented Modelling or equivalent knowlege/experience

This subject deals with the use of object-oriented techniques in the full lifecycle of developing software, addressing both technical and management issues, focusing on pre-coding issues. These techniques will also be explored practically in a project-based systems development assignment.

Lectures will primarily discuss the third generation OO methodology, OPEN. There will be software engineering focus through the subject, including discussion of project management, reuse and metrics appropriate for an object-oriented systems development environment.

32108
Applications of Artificial Intelligence
6cp

This subject covers some important areas of artificial intelligence and their applications. These areas include, broadly: knowledge representation; problem solving; planning; knowledge-based systems; dealing with uncertainty; explanation facilities; machine learning and applications of AI. The subject quickly introduces students to the basic AI techniques and then deals with individual topics in depth.

32204
Advanced Data Management
6cp

This subject covers a range of advanced database topics, including relational, object-oriented database systems and distributed databases. The subject area is treated mainly from a technological viewpoint, but also includes a discussion of management issues.

32208
Information Processing Strategy
6cp

This subject is designed to provide students with an awareness of the problems in developing corporate strategies for information processing, and to develop skills in the selection and use of appropriate techniques.

32307
Operating Systems
6cp

This subject discusses topics in modern operating systems: concurrency in multiprocessor operating systems, programming support environments, user friendly system interfaces, object-based systems, fault-tolerant systems, and secure systems.

32501
Computer Graphics
6cp

This subject demonstrates why computer graphics are important and, through the lectures and practical work, gives students a working knowledge of elementary two- and three-dimensional graphics programming algorithms.

32509
Human–Computer Interaction in Information Systems
6cp

This subject introduces the fundamentals of Human–Computer Interaction including the nature and scope of human use of computers in everyday contexts. Topics covered include the cognitive frameworks used in system design, user-centred design methods and use-ability design and evaluation principles and methods. Students are encouraged to critically engage with the technology they encounter in their work so as to develop a understanding of how the design of computer systems relates to their use, and their useability, in practice.

32510
Principles of Object-oriented Programming in C++
6cp; prerequisite(s): 32106 Object-oriented Process

Topics in this subject include: review of object-oriented design principles and practice; and objects, classes, run-time instantiation, inherit-

ance, information hiding, polymorphism and libraries, and their implementation in ANSI C++ are covered in the subject.

32511

Principles of Object-oriented Programming in Smalltalk

6cp; prerequisite(s): 32106 Object-oriented Process

The Smalltalk language and programming environment are covered in the first half of the subject. The second half uses the Smalltalk class library to build an interactive system with a graphical user interface (GUI).

32513

Advanced Machine Learning

6cp

This subject is concerned primarily with machine learning: automatic construction of computable models from data. Symbolic and non-symbolic methods are studied. Topics include: statistical learning, clustering and correlations; neural networks methods; genetic algorithms; genetic programming; Shannon information; rule induction; and first-order learning.

32516

Internet Programming

6cp

Internet Programming covers an introduction to programming in Java, and website construction using programmatic techniques including Javascript, style sheets, CGI and Java applets. Students implement a small web-based application combining elements of programming techniques covered during the subject.

32517

Commerce on the Internet

6cp

This subject aims to give students exposure to Internet commerce and will develop an understanding of the stakeholders and their capabilities and limitations in the strategic convergence of technology and business. Topics will include business models for Internet commerce, security, and legal and ethical issues. Students will develop skills in identifying the advantages and disadvantages of the various electronic payment options. Students will complete computer-based activities on Internet commerce.

32518

Internetworking Research

6cp; prerequisite(s): subjects in Graduate Diploma in Internetworking

This subject will familiarise students with a range of approaches used in IT research, with particular emphasis on the use of scientific research (a problem-solving driven approach) as a tool to analyse and solve business problems for organisations. The advantages and limitations of different research approaches will be examined, as well as their applicability in Internetworking environments, especially in the student's own workplace. Experience will be provided in the design of research studies, the analysis and interpretation of data and report presentation and in critical analysis of others' research.

32519

Internetworking Project (18cp)

18cp; corequisite(s): 32518 Internetworking Research

Students will undertake a project in an area of internetworking and prepare a project report.

32520

UNIX Systems Administration

6cp

Students will learn about basic UNIX systems administration, including: registering users; file systems; networking; and performance management. Students should be competent users of UNIX. There will be a laboratory component to the subject.

32521

Internetworking

6cp; prerequisite(s): 32524 LANs and Routing

This subject extends the work covered in 32524 LANs and Routing with VLANSs and WAN protocols. WAN and LAN design is introduced. Use of the UTS Cisco Academy resources are used for practical work and threaded case study. After completing this subject students may sit for the industry certification CCNA (Cisco Certified Network Associate).

32522

C for Systems Programmers

6cp; prerequisite(s): Ability to write simple programs, preferably in procedural language

This subject develops skills in programming 'system level' code in C. UNIX shell programming and use of UNIX utilities is practiced.

32523
Operating Systems for Internetworking
6cp

This subject looks at the principles of operating systems and the fundamental differences between systems currently used in Internetworking, such as UNIX and NT.

32524
LANs and Routing
6cp; prerequisite(s): 32523 Operating Systems for Internetworking

This subject provides students with knowledge of LAN hardware and physical layer standards, and basic computer networking concepts and principles, and introduces local area network (LAN) design and the use of routers and routing in autonomous system intranets. It also explains how these access WANS. Use of the Cisco Academies on-line resources and practical work in wiring and configuring LANs, including Cisco routers, is an integral part of this subject.

32525
Distributed Software Programming
6cp; prerequisite(s): 32547 UNIX Systems Programming or 32522 C for Systems Programmers

This subject builds on material learnt in the prerequisite subjects. It furthers an understanding of the underlying technology used in implementing distributed systems software. Students design and develop distributed applications.

32527
Internetwork Design
6cp; prerequisite(s): 32524 LANs and Routing

This subject combines the principles studied in 32524 LANs and Routing, and 32521 Internetworking and extends them. These are then applied to the design of internetworks.

32528
Network Management
6cp; prerequisite(s): 32524 LANs and Routing

This subject explains the role of the network manager and the network management system. It discusses the components of network management i.e. fault management, performance management, configuration management, security management and accounting management. The integration of the components into an enterprise manage-

ment system is addressed. The lecture material is integrated with laboratory sessions throughout, which allow students to experience aspects of network management.

32529
Internetworking Project (12cp)
12cp; prerequisite(s): 32518 Internetworking Research

Students will undertake a project in an area of internetworking and prepare a project report.

32530
Building Intelligent Agents
6cp

This subject introduces students to the concepts of agent computing, and applies those concepts in the context of intelligent Internet-based systems. Students will gain sufficient knowledge to be able to take more specialised subjects in Internet-based computing and artificial intelligence. By the end of this subject, students should be able to design a simple intelligent agent and to implement a simple intelligent agent in Java.

32531
Global Information Systems
6cp

This subject covers new requirements placed on information systems arising out of the globalisation of business operations. It covers new ways of doing business in global environments, including formation of alliances and joint ventures, and ways that information systems must be developed to support them. The interaction of technical issues and social issues, including culture, will be studied.

32532
Conducting Business Electronically
6cp

This subject describes ways to assess an organisation's computer networking needs and identify those business operations that will benefit most from using Web or groupware technologies in business-to-business and Intranet applications. It then covers ways for designing the applications by identifying ways of doing business using such technologies and by specifying workspaces that allow users to share information and knowledge while working towards organisational goals. Different kinds of workspaces will be identified, including those for information exchange, developing personal relationships and knowl-

edge sharing. Ways of using Web technologies to implement workspaces will then be described.

32533
Networking Communities
6cp

This subject describes ways in which computer networking components can be integrated into workspaces that foster virtual communities. It first concentrates on the formation of virtual communities that focus on the common interests of their members. It considers factors that influence the growth and success of such communities both within large enterprises and within widely distributed community groups. The subject then describes ways to use information technology to combine a variety of components into workspaces that support such communities.

32534
Knowledge Management
6cp

This elective subject addresses the business of managing the generation, dissemination, retention, application and development of corporate knowledge. It addresses knowledge discovery in databases which is the non-trivial process of identifying valid, novel, potentially useful, and ultimately understandable patterns in data.

32535
Databases in Distributed Environments
6cp

This subject covers a range of topics in distributed databases. The main topics include: discussion of distributed database design; distributed transactions and queries; and data replication strategies. Modern database server techniques are introduced.

32536
Object-oriented Modelling
6cp

The value of full lifecycle processes is explored for object-oriented software development, focusing on the details of the third-generation, public domain OPEN methodological approach. All process aspects of OO software development are considered from the documentation of deliverables (using UML notation, which will be reviewed), through details of what activities and tasks (units of work) are useful to a discussion of appropriate techniques which describe the way in which these units of work can be optimally effected. As well as technical software development issues, a large part of the subject deals with more management-focused issues such as project management, re-use strategies and software engineering metrics. Finally, OPEN is contrasted with other methodologies/processes for OO software development.

32537
Enterprise Wide Software Systems
6cp

This subject looks at software from an enterprise point of view. It investigates issues concerning the incorporation of legacy code versus a new system; maintenance; costs; and the effect of a business re-engineering process on software systems or the opportunities provided by the necessity to introduce new systems.

32541
Project Management
6cp

This subject covers the management of the development and implementation of information technology solutions, with particular emphasis on information systems, project management, and contemporary issues in the delivery of information technology solutions to the business. It considers the role of project management in business and identifies the managerial control and reporting aspects necessary from inception to implementation of a software development project.

32542
Advanced Cognitive Modelling
6cp

This subject is designed to provide an overview of recent developments in the exciting field of cognitive science. Bringing together work from several disciplines, including psychology, neurophysiology, philosophy and AI, this subject will investigate the biological mechanisms underlying human intelligence in order to provide a theoretical model for emulating such behaviour artificially. Topics include: philosophy of mind; memory systems; selective attention; learning; and emerging AI techniques such as neural networks.

32543

Advanced 3D Computer Animation

6cp; prerequisite(s): 32501 Computer Graphics

This subject covers the major areas of 3D computer animation. It provides students with the opportunity to learn a major commercial 3D modelling, animation and rendering package. Students will also gain experience with Silicon Graphics workstations and the Irix environment. The subject also covers the principles and practice of pre-production planning, production management and post-production of an animation project. The subject is project-based, and each student will develop an animation of their choice.

32544

Advanced Image Synthesis Techniques

6cp; prerequisite(s): 32501 Computer Graphics

This subject covers the three major rendering techniques used for image synthesis in computer graphics: scan-line algorithms, ray tracing and radiosity. Topics covered include: shading and illumination models, the scan conversion of graphics primitives, recursive ray tracing, textures, anti-aliasing, shadows, constructive solid geometry, acceleration techniques for ray tracing, and radiosity for diffuse and specular environments.

32545

Multi-agent Systems

6cp

This subject aims to introduce students to current research and state-of-the-art applications of multi-agent technology, and to teach them how to recognise a problem that should be addressed by multi-agent technology.

32546

Business Process Engineering

6cp

This subject aims to introduce current approaches to modelling process; designing, implementing and maintaining business process systems; and current approaches to managing process systems and to managing the application of business process engineering technology.

32547

UNIX Systems Programming

6cp; prerequisite(s): ability to program in C

This subject allows students to enhance their C and UNIX knowledge and develop skills appropriate for professional practice in a UNIX/C environment. The subject also exposes students to high level 'scripting' utilities. This is of general benefit and is not covered elsewhere in the course.

32548

Network Security

6cp

This subject consolidates the student's understanding of network security by considering security principles, methodologies and technologies from a technical and management perspective. Issues such as Policy Based Networking, Directory Services, IPsec, as well as basic methodologies such as firewalls, proxies, encryption and authentication are dealt with.

32549

Advanced Internet Programming

6cp; prerequisite(s): 32516 Internet Programming or equivalent

This subject complements and extends 32516 Internet Programming. It focues on server side issues and the construction of medium to large scale web-based business to business (B2B) applications. In this subject application servers, integration of data from multiple sources, transactions, and delivery of resultant data as XML or WAP to multiple client mechanisms are dealt with. Topics include Java Server Pages (JSP), servlets, Java Data Base Connectivity (JDBC), Java Naming and Directory Interface (JNDI) and Enterprise Java Beans (EJB). Consideration is also given to dealing with legacy systems. RMI and CORBA are discussed.

32601

Advanced Project Management

6cp

This subject covers the management of developing and implementing information technology solutions, with particular emphasis on information systems, project management, and contemporary issues in the delivery of information technology solutions to the business. It considers the role of project management in business and identifies the

managerial control and reporting aspects necessary from inception to implementation of a software development project.

32604
Systems Integration
6cp; prerequisite(s): 32601 Advanced Project Management

Systems integrators are facing new challenges as a result of the increasing complexity of information systems and the fast evolving technologies used in their construction. This subject introduces students to various topics relating to systems integration. The subject covers both the technological and management issues in this area. The focus is on frameworks, architectures, and standards that facilitate component-based systems integration.

32606
Database
6cp; prerequisite(s): 32607 Systems Analysis
Postgraduate

This subject introduces the basic database design and implementation concepts and presents database design techniques including relational design and E-R modelling. It discusses the implementation of relational database and describes database query techniques using the Structured Query Language (SQL). It also introduces object-oriented databases and discusses their applicability to various problem domains.

32607
Systems Analysis
6cp

This subject deals with information systems in their organisational context.

The effects of information systems on society, organisations and individuals are discussed. Examples from typical organisations are used to illustrate information systems concepts. Techniques for analysing and describing user requirements are introduced.

Throughout the subject there is an emphasis on human activities, the importance of the user in the analysis phase and the usability of systems. Another theme is communication skills i.e. the ability of the analyst and designer of an information system to interview, write reports and manuals, design efficient and effective interfaces, and give presentations on the system.

32702
Contemporary Telecommunications
6cp

This subject explores management perspectives on contemporary telecommunications, data communications and networks. Topics covered include: network architecture and standards; new communications technologies; Internetworking; domestic and international communications environments; application-oriented services; network resource architectures; client/server systems; introduction to distributed processing; distributed databases; emerging technologies; and business and telecommunications planning.

32703
Information Technology Strategy
6cp

Designed to provide students with an awareness of the problems in developing corporate strategies for information processing, and to develop students' skills in the selection and use of appropriate techniques.

32704
Strategic IT Contract Management
6cp

Designed to provide students with an understanding and practical knowledge of IT contracting and intellectual property laws relating to the IT industry, and of implementing contract design and negotiation strategies to achieve project objectives.

32806
Project A
6cp; prerequisite(s): Graduate Diploma in Information Technology Management; corequisite(s): 21751 Management Research Methods

All students in the MBus in IT Management are required to enrol in and pass the project subjects. The project is normally undertaken in the final year of study. The project entails a substantial investigation, under the supervision of a member of the academic staff, and is examined on the quality of both a written report and an oral presentation of the project work. The oral presentation must be made in the final year of enrolment in the Master's course and must be presented at a satisfactory standard.

32812

Project B

6cp; prerequisite(s): 32806 Project A; 21751 Management Research Methods

All students in the MBus in IT Management are required to enrol in and pass the project subjects. The project is normally undertaken in the final year of study. The project entails a substantial investigation, under the supervision of a member of the academic staff, and is examined on the quality of both a written report and an oral presentation of the project work. The oral presentation must be made in the final year of enrolment in the Master's course and must be presented at a satisfactory standard.

32910

Project 1

6cp

The project is split into two subjects. In the first, students will learn about the nature of research: both academic and professional. A variety of appropriate research methodologies will be presented. The subject will also cover the cost of research; evaluation of research; significance of research; timeliness of research; and execution of a research project. Students will be required to present a substantial literature survey and workshop a research proposal. In the second subject, the student will undertake a substantial investigation under the supervision of a member of staff, which is examined on the quality of both the written work and a research seminar.

32911

Project 2

6cp

The project is split into two subjects. In the first, students will learn about the nature of research: both academic and professional. A variety of appropriate research methodologies will be presented. The subject will also cover the cost of research; evaluation of research; significance of research; timeliness of research; and execution of a research project. Students will be required to present a substantial literature survey and workshop a research proposal. In the second subject, the student will undertake a substantial investigation under the supervision of a member of staff, which is examined on the quality of both the written work and a research seminar.

32930

Information Technology Management Research Methods

6cp; prerequisite(s): to be undertaken in final year of study

This subject will familiarise participants with a range of approaches used in management research, with an emphasis on approaches commonly used in practical settings. The advantages and limitations of different research approaches will be examined, as well as their applicability in different IT contexts. Experience will be provided in the design of research studies, in the analysis and interpretation of data, and in report presentation. Participants will acquire skills which will be useful in the conduct of research agendas in their own IT organisations and in the critical evaluation of others' research work.

32931

Information Technology Research Methods

6cp; prerequisite(s): to be undertaken in final year of study

This subject will familiarise participants with a range of approaches used in information technology research, with an emphasis on approaches commonly used in practical settings. The advantages and limitations of different research approaches will be examined, as well as their applicability in different information technology contexts. Experience will be provided in the design of research studies, in the analysis and interpretation of data, and in report presentation. Participants will acquire skills which will be useful in the conduct of research agendas in their own information technology organisations and in the critical evaluation of others' research work.

32932

Project A1

6cp; prerequisite(s): 32390 Information Technology Management Research Methods or 32931 Information Technology Research Methods

Project A1 is the compulsory part of the final Masters project. Participants will practise the methods and techniques introduced in the prerequisite research methods subject by undertaking a literature review and producing a research proposal. The research proposal may then optionally be undertaken as either Project B1 or Project B2.

32933

Project B1

6cp; prerequisite(s): 32932 Project A1

Project B1 is the second and optional part of the final Masters project. Participants will undertake the research proposal developed in Project A – this will involve a substantial investigation under the supervision of a member of academic member of staff, and will be examined on the quality of both a written report and an oral presentation of the project work.

32934

Project B2

6cp; prerequisite(s): 32932 Project A1

Project B2 is the second and optional part of the final Masters project. Participants will undertake the research proposal developed in Project A – this will involve a substantial investigation under the supervision of a member of academic member of staff, and will be examined on the quality of both a written report and an oral presentation of the project work.

33401

Introductory Mathematical Methods

6cp; 3hpw

Topics covered include: matrices and determinants; gaussian reduction; solution of linear equations; eigenvalues and eigenvectors; vectors; products of vectors; equations of lines and planes; complex numbers; polar form and de Moivre's theorem; linear independence of vectors; rank of a matrix; symmetric matrices; quadratic forms; differentiation and integration of functions of one variable; functions of several variables; partial derivatives; maxima and minima; Taylor's theorem; gradient and Hessian; and classification of critical points.

35010

Foundation Mathematics

6cp; 6hpw

This subject aims to increase a student's chance of success at university by developing essential mathematical knowledge. It establishes essential knowledge and skills in the areas of algebra, functions, calculus and probability. Students will be required to actively participate in their learning by oral presentations, group activities and individual work. Students will use the computer algebra system *Mathematica* in applied problems.

35100

Mathematical Practice

6cp; 4hpw

This subject covers: an overview of mathematics and its applications in historical and current contexts; an introduction to reading, writing and speaking mathematics; perspectives on communication and mathematical communication; inductive and deductive reasoning and proof techniques; problem solving and modelling; scientific method; and mathematical practice case studies.

35101

Mathematics 1

6cp; 6hpw

This subject covers the topics: limits, continuity and differentiation for functions of a single variable; mean value theorem; curve sketching; related rates and maxima and minima; integration; Riemann sums; the fundamental theorem of calculus; applications to areas, volumes and lengths of curves; logarithm and exponential functions; trigonometric and hyperbolic functions; inverse trigonometric and hyperbolic functions; L'Hôpital's rule; methods of integration; and improper integrals.

35102

Mathematics 2

6cp; 6hpw; prerequisite(s): 35101 Mathematics 1; corequisite(s): 35140 Operations Research Modelling

This subject covers the topics: complex numbers; first order variable separate and linear ordinary differential equations; higher order linear differential equations with constant coefficients; oscillation problems; sequences and series; power series and radius of convergence; Taylor and Maclaurin series; solution of homogeneous linear differential equations about an ordinary point; vectors; products of vectors; equations of lines and planes; functions of several variables; partial derivatives and gradient; and double integrals.

35106

Mathematics in Sport

6cp; 3hpw

The subject covers a selection of major topics from: the assignment problem and its use for team selection, graphical statistics for performance prediction, graph theory and tournament construction, ranking methods, the mathematics of balls in flight and instances of the use

of mathematics in (alphabetically) athletics, basketball, blackjack, cricket, darts, football, snooker, tennis, among others.

35110
Discrete Mathematics (S)
4cp; 3hpw

This subject cover the topics: set operations, countability, pigeonhole principle; counting, permutations and combinations; linear difference equations; relations, equivalence relations, partitions, partially ordered sets; functions, bijections, inverse functions; equivalent sets, cardinality; graph terminology, matrix representation of graphs; Euler and Hamiltonian cycles; spanning trees; colouring problems; Boolean algebra; switching circuits; Karnaugh maps; finite-state automata; and turing machines.

35111
Discrete Mathematics
6cp; 4hpw

Topics in this subject include: logical connectives, truth tables, tautologies; propositional and predicate logic; proof techniques, induction, analysis of algorithms; set operations, countability, pigeonhole principle; counting, permutations and combinations; linear difference equations; relations, equivalence relations, partitions, partially ordered sets; functions, bijections, inverse functions; equivalent sets, cardinality; graph terminology, matrix representation of graphs; Euler and Hamiltonian cycles; spanning trees; colouring problems; Boolean algebra; switching circuits; Karnaugh maps; finite-state automata; and turing machines.

35140
Operations Research Modelling
6cp; 4hpw

This subject is an introduction to operations research methodology. A variety of problems from manufacturing, construction, transportation and finance will be considered, together with approaches to the formulation of the corresponding mathematical models. Solutions for the models will be obtained using decision support software with particular emphasis on spreadsheets and their uses in business applications. The art of model building will be discussed in conjunction with an introductory description of several important solution methods including matrices, determinants and vectors.

35151
Statistics 1
6cp; 6hpw

Topics covered include: describing and exploring data; producing data; probability; random variables; introduction to inference; inference for distributions; inference for categorical data; regression; analysis of variance; and distribution-free inference.

35170
Introduction to Computing
6cp; 6hpw

Topics in this subject include: an introduction to computer systems; the use of editors, interfaces and operating systems; an introduction to the C language and its application to the implementation of numerical algorithms. Examples used include numerical solutions of linear and nonlinear equations and the numerical calculation of integrals.

35205
History of Mathematics
6cp; 4hpw

This subject covers the topics: overview of general history; overview of the history of mathematics; mathematics before the Greeks; Greek mathematics and the development of logical argument and rigour; the decline of Greek mathematics; Indian and Arabic contributions to notation and calculation, and the preservation of Greek knowledge; scholastic and Renaissance mathematics: the rediscovery of classical knowledge in Western Europe; the scientific revolution and the discovery of the calculus; development of the calculus and its applications in continental Europe; the search for a rigorous foundation for the calculus and the rise of analysis; and the resurgence of geometry and algebra in the 19th century.

35212
Linear Algebra
6cp; 4hpw; prerequisite(s): 35140 Operations Research Modelling

Topics covered include: systems of linear equations, decompositions; vector spaces; inner product spaces; Gram-Schmidt orthogonalisation; the eigenvalue problem; symmetric matrices, diagonalisation, quadratic forms; Jordan form; and matrix exponentials.

35231
Differential Equations
6cp; 4hpw; prerequisite(s): 35102 Mathematics 2; corequisite(s): 35212 Linear Algebra

Topics in this subject include: existence and uniqueness of solutions; variation of parameters; qualitative theory of linear and nonlinear systems; limit cycles; Poincaré-Bendixson theorem; applications; boundary value problems, separation of variables; Fourier series; heat and wave equations; Laplace's equation; and transform methods.

35232
Advanced Calculus
6cp; 4hpw; prerequisite(s): 35102 Mathematics 2

This subject covers the topics: vector fields; divergence and curl; line and surface integrals; integral theorems; functions of a complex variable; analytic functions; Cauchy–Riemann equations; complex integrals; Cauchy's theorem; residues and poles; and contour integration.

35241
Optimisation 1
6cp; 4hpw; prerequisite(s): 35102 Mathematics 2; 35140 Operations Research Modelling

Topics covered include: fundamental ideas of optimisation; the two-phase simplex method and the revised simplex method; duality theory; the dual simplex method and the cutting plane method; sensitivity analysis; and first- and second-order optimality conditions for nonlinear programming.

35252
Statistics 2
6cp; 4hpw; prerequisite(s): 35102 Mathematics 2; 35151 Statistics 1

Topics in this subject include: probability; random variables and their probability distributions; multivariate probability distributions; functions of random variables; sampling distributions and the Central Limit Theorem; applications to estimation; and multivariate normal distribution.

35254
Health Statistics
6cp; 4hpw; prerequisite(s): 35151 Statistics 1

This subject covers the topics: the place of statistical inference in the health sciences; planning of statistical investigations; further

experimental designs including nested designs and crossover designs; multiple regression models; time series and repeated measurements; categorical data analysis; survival analysis; statistical methods in epidemiology; biological assay; and ethical issues in health statistics.

35281
Numerical Analysis 1
6cp; 4hpw; prerequisite(s): 35170 Introduction to Computing; corequisite(s): 35231 Differential Equations

This subject is an introduction to numerical analysis, including the study of: solution methods for nonlinear equations, systems of linear equations (LU factorisation and iterative methods), interpolation, numerical differentiation and integration, orthogonal polynomials and approximation theory, the Euler and Runge-Kutta methods for initial value problems, and finite difference methods for boundary value problems. Further work on the use of spreadsheet modelling, including coverage of command macros is also dealt with.

35290
Group Project
6cp; 4hpw; corequisite(s): 35241 Optimisation 1; 35252 Statistics 2

A project-based subject in which students work in groups to produce a design and a working implementation of a specified problem. The groups will be expected to acquire and implement project management techniques, including regular meetings, production of action minutes and the joint development of a solution.

35292
Project
2cp; prerequisite(s): by consent; corequisite(s): by arrangement

A supervised investigation of a topic in an area of interest, providing the student with additional skills of direct use in employment or in further academic studies.

35293
Project
3cp; prerequisite(s): by consent; corequisite(s): by arrangement

A supervised investigation of a topic in an area of interest, providing the student with additional skills of direct use in employment or in further academic studies.

35294

Project

4cp; prerequisite(s): by consent; corequisite(s): by arrangement

A supervised investigation of a topic in an area of interest, providing the student with additional skills of direct use in employment or in further academic studies.

35295

Project

5cp; prerequisite(s): by consent; corequisite(s): by arrangement

A supervised investigation of a topic in an area of interest, providing the student with additional skills of direct use in employment or in further academic studies.

35296

Project

6cp; prerequisite(s): by consent; corequisite(s): by arrangement

A supervised investigation of a topic in an area of interest, providing the student with additional skills of direct use in employment or in further academic studies.

35313

Pure Mathematics 3A

6cp; 4hpw; prerequisite(s): 35231 Differential Equations; 35232 Advanced Calculus

Topics covered include: projective geometry: Euclidean and non-Euclidean geometry, Pappus' and Desargues' theorems, transformations in the plane, collineations, projectivities, incidence matrices, Latin squares; and differential geometry: vector fields, vector fields on surfaces, Gauss map, Weingarten map, curvature of curves and surfaces.

35314

Pure Mathematics 3B

6cp; 4hpw; prerequisite(s): 35111 Discrete Mathematics

Topics in this subject include: number theory: the division algorithm and unique factorisation in Z, number-theoretic functions, congruences, Fermat's theorem, Euler's theorem, linear diophantine equations, continued fractions; groups: basic definitions, symmetry groups, cyclic groups, generators, relations and presentations of a group, subgroups and cosets, conjugacy and normal subgroups, quotient groups, solvable groups, prime power groups, Sylow theorems; group homomorphisms and isomorphism theorems; and introduction to rings: homomorphisms, subrings, ideals, quotient rings.

35321

Analysis 1

6cp; 4hpw; prerequisite(s): 35102 Mathematics 2

This subject covers the topics: algebraic and order properties of R; countable and uncountable sets; least upper bound axiom; sequences and their convergence; continuous and uniformly continuous functions; properties of continuous functions on a closed interval; differentiability; series and their convergence; tests for convergence; upper and lower sums; the Riemann integral; sequences and series of functions; uniform convergence; properties of uniformly convergent series; and Weierstrass M-test.

35322

Analysis 2

6cp; 4hpw; prerequisite(s): 35321 Analysis 1; 35212 Linear Algebra

Topics covered include: metric and normed spaces, Banoch spaces; compact subsets of R, the Heine-Borel theorem; topological spaces: Hausdorff spaces, homeomorphisms; operators and functionals on normed spaces, the dual space; inner product spaces; Hilbert space; Hilbert space isomorphism; measures and outer measures; lebesgue and Lebesgue-Stieltjes measure; borel sets; the Cantor set; measurable functions, step functions; the Lebesgue integral; Lp spaces: Hölder and Minkowski inequalities, completeness; product measures; probability spaces: random variables, distribution functions, independence, expectation and variance; modes of convergence: Borel-Cantelli lemmas, laws of large numbers; the Radon-Nikodym theorem; and conditional expectation and conditional probability.

35333

Applied Mathematics 3A

6cp; 4hpw; prerequisite(s): 35232 Advanced Calculus; corequisite(s): 35335 Mathematical Methods

Topics in this subject include: modelling mechanical properties: force, work, energy, power, projectiles, oscillation, orbits; and modelling electromagnetic properties: electric

fields, magnetic fields, Coulomb's law, Biot-Savart law, Ampere's circuital law, Faraday's law, Maxwell's equations.

35334
Applied Mathematics 3B

6cp; 4hpw; prerequisite(s): 35333 Applied Mathematics 3A; 35335 Mathematical Methods

Topics in this subject include: acoustic waves in fluids; waves on a liquid surface; elastic waves in solids; and electromagnetic waves.

35335
Mathematical Methods

6cp; 4hpw; prerequisite(s): 35231 Differential Equations

Topics covered include: vector integral theorems; Bessel and Legendre equations; applications to boundary value problems; and integral transform methods for solving boundary value problems.

35340
Operations Research Practice

6cp; 4hpw; prerequisite(s): 35241 Optimisation 1; 35252 Statistics 2

Topics in this subject include: financial modelling: mathematics of finance, compound interest, various types of annuities, perpetuities, bond pricing, contingent payments, consumption and investment decisions under certainty, investment decisions under uncertainty, utility theory and risk analysis, Markowitz portfolio theory, single index model, capital asset pricing model; and inventory control: economic order quantity, production lot size model, quantity discounts, shortage models, single period model, safety stock approach, service level approach, periodic review system, dynamic EOQ, classical optimisation methods, materials requirements planning.

35342
Optimisation 2

6cp; 4hpw; prerequisite(s): 35241 Optimisation 1

This subject covers the topics: dual simplex method; basic ideas of cutting plane and branch-and-bound methods for integer programming; primal-dual algorithm; parametric linear programming; goal programming; numerical methods for unconstrained non-linear optimisation; Newton's method; conjugate direction methods; numerical methods for constrained nonlinear optimisation; feasible direction methods; penalty and barrier methods; and introduction to stochastic programming.

35344
Network Optimisation

6cp; 4hpw; prerequisite(s): 35241 Optimisation 1

Topics covered include: transportation problems; the transportation simplex method; assignment problems; trans-shipment problems; shortest path problems; maximum flow problems; project planning and scheduling; CPM cost models; network simulation models; minimum-cost network flow problems; network simplex method; out-of-kilter algorithms; algorithm analysis; auction algorithm; and solution of problems using commercially-available software.

35353
Regression Analysis

6cp; 4hpw; prerequisite(s): 35252 Statistics 2

Topics in this subject include: simple and multiple linear regression; general linear models; weighted regression; diagnostics and model building; analysis of covariance; regression graphics; and introduction to nonlinear regression.

35355
Quality Control

6cp; 4hpw; prerequisite(s): 35252 Statistics 2

This subject covers the topics: total quality management; process control for attributes and variables, introducing Shewhart, Cusum, and EWMA control charts and covering regular, short, multiple-stream and serially correlated processes; acceptance sampling for attributes and variables; process capability analysis, including nonconforming ppm, capability ratios and Taguchi quality loss; tolerance analysis covering linear and nonlinear combinations of components, and Taguchi's method; and reliability analysis, including reliability measures, bounds and estimation for individual components and systems, and spare parts provisioning.

35356
Design and Analysis of Experiments

6cp; 4hpw; prerequisite(s): 35212 Linear Algebra; 35252 Statistics 2

Topics covered include: introduction to general concepts of the design of experiments; completely randomised, randomised complete

block and Latin square designs; multiple comparisons; factorial designs; and introduction to Taguchi designs and response surface designs.

35361
Probability and Stochastic Processes
6cp; 4hpw; prerequisite(s): 35252 Statistics 2

Topics in this subject include: probability; random variables and expectations; limit theorems; Markov chains; the Poisson process; and birth and death processes.

35363
Simulation Modelling
6cp; 4hpw; prerequisite(s): 35170 Introduction to Computing

This subject covers the topics: Bayesian statistics and Bayesian decision making; Monte Carlo simulation; prior distributions; decision trees and influence diagrams; conjugate distributions; various queuing models and applications; simulation studies; modelling systems and various representations; statistical modelling; input data analysis; verification and validation; output analysis; comparison of systems designs; random number generation and tests; random variate generation; and variance reduction techniques.

35382
Numerical Analysis 2
6cp; 4hpw; prerequisite(s): 35281 Numerical Analysis 1

Topics covered include: numerical linear algebra: the algebraic eigenvalue problem, the singular value decomposition and least squares methods; extrapolation and multistep methods for initial value problems, stiff problems; boundary value problems: variational and finite element methods; and symbolic computation: programming styles in *Mathematica* (imperative, functional and rule-based), the evaluation engine, use of pattern matching, implementation of standard symbolic and numerical packages.

35384
Financial Modelling
6cp; 3hpw; prerequisite(s): 35102 Mathematics 2; 35151 Statistics 1

Topics in this subject include: an introduction to models of the standard problems of financial management and the mathematical techniques for their solutions: asset and liability management, planning day-to-day operations and the

firm's financing and investment decisions; net-present value; capital budgeting problems; investment under certainty; investment decisions under uncertainty; the debt-capacity decision; debt maturity and timing decisions; dividend policy; and internal financing and growth.

35391
Seminar (Mathematics)
6cp; 4hpw; prerequisite(s): by arrangement

The subject involves group studies in mathematics. The topics will vary from year to year and will be chosen in accordance with the interests of students and staff, and the availability of staff.

35392
Seminar (Operations Research)
6cp; 4hpw; prerequisite(s): by arrangement

The subject involves group studies in operations research. The topics will vary from year to year and will be chosen in accordance with the interests of students and staff, and the availability of staff.

35393
Seminar (Statistics)
6cp; 4hpw; prerequisite(s): by arrangement

The subject involves group studies in statistics. The topics will vary from year to year and will be chosen in accordance with the interests of students and staff, and the availability of staff.

35394
Seminar (Computing)
6cp; 4hpw; prerequisite(s): by arrangement

The subject involves group studies in computing. The topics will vary from year to year and will be chosen in accordance with the interests of students and staff, and the availability of staff.

35418
Analytic Number Theory
4cp; 3hpw; prerequisite(s): 35314 Pure Mathematics 3B; 35232 Advanced Calculus

This subject covers the topics: divisibility, prime numbers and the fundamental theorem of arithmetic; arithmetical functions and Dirichlet multiplication; some asymptotic analysis involving arithmetical functions; characters of finite Abelian groups; Dirichlet's theorem on primes in arithmetic progressions; the Riemann zeta function; and analytic proof of the prime number theorem.

35419
Advanced Algebra
4cp; 3hpw; prerequisite(s): 35314 Pure Mathematics 3B

Topics covered include: ring theory: commutative rings, integral domains, field of fractions of an integral domain, polynomial rings, principal ideal domains and unique factorisation; module theory: left and right modules, submodules, free modules, direct sums of modules, structure of finitely generated modules over a principal ideal domain, application to Abelian groups and linear transformations of a vector space; Galois theory: classical problems of constructibility and solution of algebraic equations by radicals, extension fields and splitting fields of a polynomial, Galois groups, fundamental theorem of Galois theory and applications.

35427
Functional Analysis
4cp; 3hpw; prerequisite(s): 35322 Analysis 2

Topics in this subject include: Banach spaces; bounded linear transformations; spectrum; dual space; adjoint operator; Hahn-Banach theorem; compact operators; Riesz theory; Fredholm integral equations; Fredholm alternative; application to potential theory; Hilbert spaces; operators and adjoints; Riesz representation theorem; orthogonality; orthonormal bases; abstract Fourier theory; self-adjoint operators; projections; compact operators; spectral theory for compact operators; application to Sturm-Liouville theory; and Fourier series.

35428
Convexity and Optimisation
4cp; 3hpw; prerequisite(s): 35322 Analysis 2

This subject covers the topics: convex sets in a linear space; affine sets and hyperplanes; algebraic interior and closure; separation theorems; geometric Hahn-Banach theorem; convex functions; epigraphs; subdifferentiability and differentiability; duality; polars; support functions; linear and convex programming; Kuhn-Tucker conditions; general constrained optimisation theory; application to calculus of variations; and introduction to applications in optimal control theory.

35436
Advanced Mathematical Methods
4cp; 3hpw; prerequisite(s): 35334 Applied Mathematics 3B

Topics covered include: generalised functions; Green's functions; applications in electrostatics and electro-magnetism; tensor analysis: tensors from a geometrical viewpoint, metric and curvature tensors, differential forms, Stokes' theorem, applications in special relativity and Maxwell's equations; and use of the symbolic package MathTensor.

35437
Partial Differential Equations
4cp; 3hpw; prerequisite(s): 35335 Mathematical Methods

Topics in this subject include: first-order equations; classification of second-order linear equations; wave equation; D'Alembert's formula; Poisson's formula; Huygen's principle; heat equation; maximum principles; regularity of solutions; nonlinear problems; Laplace's equation; properties of harmonic functions; Green's functions; method of images; integral equations; Fredholm theory; application to Dirichlet and Neumann problems; introduction to scattering theory; and scattering of plane waves by cylinders.

35438
Nonlinear Dynamical Systems
4cp; 3hpw; prerequisite(s): 35231 Differential Equations; 35321 Analysis 1

This subject covers the topics: review of linear systems; nonlinear systems; phase plane analysis; linearisation; local stability and instability; global asymptotic stability; stable and unstable manifolds; limit cycles and strange attractors; introduction to chaos theory; asymptotic methods; the methods of Poincaré and Lindstedt; the method of averaging; and applications to the theory of finance.

35443
Advanced Mathematical Programming
4cp; 3hpw; prerequisite(s): 35342 Optimisation 2

Topics covered include: decomposition methods for large-scale mathematical programming problems; ellipsoid methods; Karmarkar's projective algorithm; stochastic programming; and two-stage stochastic programming problems.

35446

Scheduling Theory

4cp; 3hpw; prerequisite(s): 35342 Optimisation 2; 35447 Discrete Optimisation

Topics in this subject include: examples of scheduling problems in manufacturing and service; deterministic and stochastic mathematical models for scheduling, resources, task systems, sequencing constraints, performance measure; polynomial-time scheduling algorithms; computational complexity of scheduling problems; enumerative methods, branch-and-bound algorithms, dynamic programming; approximation algorithms; and scheduling and controlling manufacturing.

35447

Discrete Optimisation

4cp; 3hpw; prerequisite(s): 35111 Discrete Mathematics; 35342 Optimisation 2

This subject covers the topics: examples of discrete optimisation problems; computational complexity, deterministic and nondeterministic Turing machines, NP-completeness and Cook's theorem; examples of the proofs of NP-completeness; cutting plane algorithms; enumerative methods; partitioning algorithms; modern heuristic techniques; and performance guarantees for approximation algorithms.

35448

Dynamic Optimisation

4cp; 3hpw; prerequisite(s): 35241 Optimisation 1; 35361 Probability and Stochastic Processes; corequisite(s): 35447 Discrete Optimisation

Topics covered include: sequential decision processes; deterministic dynamic programming, principle of optimality and recursive relations; relation to other fields of mathematical programming; computational efficiency; stochastic dynamic programming; applications of dynamic programming: equipment replacement, resource allocation, inventory control, (s, S)-policies, dynamic portfolio analysis; Markovian decision processes, policy iteration and linear programming, successive approximation; and applications of the Markov decision model.

35456

Nonlinear Statistical Models

4cp; 3hpw; prerequisite(s): 35353 Regression Analysis

This subject is an introduction to nonlinear regression models; obtaining least-squares estimates of parameters; obtaining good initial parameter estimates; obtaining convergence of parameter estimates; assessing model nonlinearity; reducing nonlinearity with reparameterisation; and nonlinear mixture models and segmented models.

35457

Multivariate Statistics

4cp; 3hpw; prerequisite(s): 35353 Regression Analysis

This subject covers the topics: multivariate normal distribution: definition, moments, characteristic function, estimation of mean and covariance matrices, Wishart distribution, Hotelling's T2; multivariate linear regression; principal components; factor analysis; and cluster analysis.

35458

Loglinear Modelling

4cp; 3hpw; prerequisite(s): 35353 Regression Analysis

Topics covered include: revision of linear models and exponential families; generalised linear models; applications including logistic regression and contingency tables; modelling using statistical distributions; continuous distribution models; and discrete distribution models.

35459

Linear Models and Experimental Design

4cp; 3hpw; prerequisite(s): 35353 Regression Analysis; 35356 Design and Analysis of Experiments; 35457 Multivariate Statistics

Topics in this subject include: linear models: the linear model of less than full rank, the analysis of variance, completely randomised and randomised block designs; response surfaces; incomplete block designs; and repeated measures designs.

35466

Advanced Stochastic Processes

4cp; 3hpw; prerequisite(s): 35322 Analysis 2; 35361 Probability and Stochastic Processes

This subject covers the topics: formal definitions of probability space and stochastic processes; Martingales; Riemann-Stieltjes integration; Brownian motion and related processes; stochastic calculus and stochastic differential equations; and financial applications.

35467

Time Series Analysis

4cp; 3hpw; prerequisite(s): 35361 Probability and Stochastic Processes

This subject deals with nonseasonal and seasonal time series model identification, estimation, diagnostic examination and forecasting. Topics covered include: time series regression; exponential smoothing; spectral analysis; and Box-Jenkins ARIMA models including stationarity/invertibility criteria, transfer functions, intervention analysis and ARCH/GARCH models.

35469

Statistical Consulting

4cp; 3hpw; prerequisite(s): 35353 Regression Analysis; 35355 Quality Control; 35361 Probability and Stochastic Processes; corequisite(s): enrolment in any 12cp of core statistics subjects in the Honours program

This subject is an introduction to the general framework of statistical consulting, including a large practical component. Topics covered include: job estimation and business aspects of consulting; recognition of and searching for appropriate techniques to solve particular problems; constraints imposed by the analysis time frame; communication of results in written, graphical and oral forms to lay and technical audiences; and ethical issues.

35485

Advanced Financial Modelling

4cp; 3hpw; prerequisite(s): 35340 Operations Research Practice

Topics in this subject include: options and futures: concepts and valuation models, current issues and developments; and capital structure and the theory of the firm: the effects of corporate and personal taxation on the capital structure of a firm, dividend policy and current issues.

35486

Optimal Control 1

4cp; 3hpw; prerequisite(s): 35231 Differential Equations; 35241 Optimisation 1

The subject deals with the problems of the calculus of variations and optimal control. Topics covered include: terminology and notation; historical development; formulation; necessary and sufficient conditions for optimality; the maximum principle; various endpoint conditions; the inclusion of constraints of various types; bang-bang and singular controls; infinite horizon problems; dynamic programming; applications in continuous and discrete time.

35487

Optimal Control 2

4cp; 3hpw; prerequisite(s): 35466 Advanced Stochastic Processes; 35486 Optimal Control 1

Topics in this subject include: formulation of stochastic control problems; examples of controls; the Hamilton-Jacobi-Bellman equation; necessary and sufficient conditions; reduction to Markov controls; dynamic portfolio strategies; the optimal portfolio selection problem; and discussion of solutions in particular cases.

35491

Honours Seminar A

4cp; 3hpw; prerequisite(s): by consent

This subject will provide an opportunity for students to benefit from the specialist knowledge of a visitor to the Department or to undertake a course in an area of specific staff research or knowledge.

35492

Honours Seminar B

4cp; 3hpw; prerequisite(s): by consent

This subject will provide an opportunity for students to benefit from the specialist knowledge of a visitor to the Department or to undertake a course in an area of specific staff research or knowledge.

35496

Thesis Seminar A

4cp; 3hpw; prerequisite(s): by consent

This subject is intended to provide essential background to the Thesis (Honours) or opportunities for study in areas related to the thesis, complementing the project or providing

further research in the area. The subject is operated as a reading course, with the studies being coordinated by the thesis supervisor.

35497
Thesis Seminar B
4cp; 3hpw; prerequisite(s): by consent

This subject is intended to provide essential background to the Thesis (Honours) or opportunities for study in areas related to the thesis, complementing the project or providing further research in the area. The subject is operated as a reading course, with the studies being coordinated by the thesis supervisor.

35498
Thesis (Honours)
16cp; prerequisite(s): by consent

Students in this subject will perform an independent investigation of an area of the mathematical sciences chosen in consultation with a supervisor who will be appointed by the Head of Department. This is a year-long subject. Students are expected to spend three hours per week on their project in Autumn semester and six hours per week in Spring semester.

35542
Applied Mathematical Programming
6cp; 4hpw; prerequisite(s): admission to the course

This subject covers the topics: duality theory for linear programming; the dual simplex method, the primal-dual algorithm; parametric linear programming; goal programming; unconstrained nonlinear optimisation, constrained nonlinear optimisation, optimality conditions; feasible-point methods; penalty and barrier methods; introduction to integer programming; and introduction to stochastic programming.

35544
Network Modelling
6cp; 4hpw; prerequisite(s): admission to the course

Topics covered include: network notation; minimal spanning trees; minimal cost network flow problems; the simplex method for network flow problems; transportation problems; the transportation simplex method; assignment and trans-shipment problems; the out-of-kilter algorithm; maximal flow problems; shortest path problems; project planning and scheduling; and CPM cost models.

35545
Further Methods in Operations Research
6cp; 4hpw; prerequisite(s): 35151 Statistics 1; 35342 Optimisation 2

Topics in this subject include: financial, manufacturing, service and transportation applications of discrete optimisation and deterministic and stochastic dynamic programming; and approximation algorithms and modern heuristic techniques for discrete optimisation.

35549
Case Studies in Management Science
6cp; 4hpw; prerequisite(s): 35340 Operations Research Practice; 35342 Optimisation 2; 35363 Simulation Modelling

This subject covers the topics: problem summary using rich pictures; problem identification; identification of the structure, transformation processes, components, inputs and outputs of a system; project proposal development; mathematical modelling; modelling costs, benefits, constraints, time, uncertainty and multiple goals; validation and performance testing; and sensitivity and error analysis.

35563
Applied Simulation Modelling
6cp; 4hpw; prerequisite(s): admission to the course

Topics covered include: queuing models; activity-cycle diagrams; simulation languages; input data analysis; output data analysis; comparison of alternative designs; variance reduction; and decision theory.

35592
Project (Postgraduate)
4cp; prerequisite(s): by arrangement

This subject is a supervised investigation of a topic in an area of interest providing the student with additional skills of direct use in employment.

35593
Project (Postgraduate)
6cp; prerequisite(s): by arrangement

This subject is a supervised investigation of a topic in an area of interest providing the student with additional skills of direct use in employment.

35594

Project (Postgraduate)

8cp; prerequisite(s): by arrangement

This subject is a supervised investigation of a topic in an area of interest providing the student with additional skills of direct use in employment.

35595

Project (Postgraduate)

10cp; prerequisite(s): by arrangement

This subject is a supervised investigation of a topic in an area of interest providing the student with additional skills of direct use in employment.

35596

Project (Postgraduate)

12cp; prerequisite(s): by arrangement

This subject is a supervised investigation of a topic in an area of interest providing the student with additional skills of direct use in employment.

35599

Report

24cp; prerequisite(s): by consent

This subject is an applied or theoretical study in an area chosen in consultation with the project supervisor who will be appointed by the Head of Department. This is a year-long subject. Students are expected to spend three hours per week on their project in Autumn semester and six hours per week in Spring semester. The subject also includes a series of optional master classes to introduce some of the common contemporary web development tools and techniques.

SUBJECTS OFFERED BY OTHER FACULTIES

015110

Aboriginal Cultures and Philosophies

8cp
TA21 BEd (Adult Ed), TA25 BEd BA
Undergraduate

This subject will introduce participants to Aboriginal culture and social organisation as expressions of Aboriginal cosmology. Contemporary Aboriginal culture will be presented as an evolving response to colonialism and as an assertion of cultural empowerment.

015168

Politics of Aboriginal History, The

8cp; prerequisite(s): Aboriginal Studies subjects at 100 and 200 levels

Introduces students to the wide range of historical work by Aboriginal and non-Aboriginal people over the last three decades, and encourages students to develop skills in the critical evaluation of this work in its political and social contexts. Students will enhance their knowledge of primary research materials for the field of Aboriginal history, and will develop their skills in the analysis and use of these sources.

015395

Aboriginal Social and Political History

8cp; prerequisite(s): 015100 Multi-literacies in the Workplace or Social and Political Theory 200 level

This subject is a campus-wide elective. It will examine and analyse the impact of colonialism on indigenous people, with particular reference to the Aboriginal inhabitants of this region. The emergence of Aboriginal social and political movements will be presented as the basis for repossession of traditional heritages in land and culture.

21128

International Business

6cp
Undergraduate

Introduces students to the multidimensional nature of international business. Discusses the importance of globalisation and how it has changed the competitive environment of business. Introduces the role of multinational

corporations and the complexity of international operations and management. Discusses current debates surrounding multilateral bodies. An Australian perspective is adopted throughout with students also developing an understanding of business in Asia.

21129
Managing People and Organisations
6cp
Undergraduate

Introduces students to the fundamentals of management and organisational behaviour in the context of today's contemporary global business environment. Examines the major theories and models in areas of communication, group dynamics, individual behaviour and motivation, decision making, leadership, power and politics, and ethics and social responsibility. Places particular emphasis upon the application of theory to dilemmas and issues likely to confront managers today and in the future.

21306
International Employment Relations
6cp; prerequisite(s): 21129 Managing People and Organisations
Undergraduate

Introduces the theories, issues and practices involved in the management of employment relations within an increasingly competitive global market. As well as gaining a broad understanding of the context and nature of different systems of international employment relations, students are encouraged to explore the cross-national similarities and differences between Australia and its geographical neighbours and trading partners through the completion of case studies and the research of current literature on the topic. Exposes students to the human resources policies and practices of multinational corporations, and explores how they are utilised for competitive advantage.

21407
Strategic Human Resource Management
6cp
Undergraduate

Focuses on the strategic nature of human resource management (HRM) functions within various organisations and builds on general issues first raised in 21306 International Employment Relations. Develops an appreciation of critical HRM issues through an exploration of conceptual issues such as alternative ways of viewing the HRM field, how HRM should relate to changes in the organisational environment, and the relationships between organisation strategy and HRM functions. The underlying concept considered in this subject is how an organisation in a changing environment can best manage its human resources in such a way as to provide long-term benefits to the organisation.

21531
Managing the International Organisation
6cp; prerequisite(s): 21591 International Management
Undergraduate

Develops the focus of international management from a country and organisational approach to the implementation of management plans to operate an organisation in an international location.

21591
International Management
6cp; prerequisite(s): 21129 Managing People and Organisations
Undergraduate

Develops an understanding of the management practices required to successfully conduct business in other countries. Develops an appreciation of the distinctive features of selected countries and their particular management practices. Explores the ways in which management theories and behaviours may be adapted to suit their application in an international setting. Aims to enhance the skills of Australian managers operating internationally through the development of a more integrated view of international business and related management practices.

21751
Management Research Methods
6cp
Postgraduate

Contributes to the students' vocational and professional competencies by giving training in the analytic and research skills that can be applied to the solution of problems encountered in their professional lives. Provides the necessary expertise in research methodology for the project-based subjects which are a part of the students' postgraduate programs. Topics include survey research, experiments and quasi-experiments, case studies, content analysis and interviews.

21788

Effective People Management

6cp

Deals with a range of management skills, competencies and understandings necessary for effective people management. It seeks to develop enhanced competence in managing others and, recognising the importance of continuing personal learning and development in management, seeks to develop an increased sensitivity and understanding of self and others in organisational contexts.

21789

Contemporary Management Practices

6cp

This subject addresses a range of management practices appropriate to contemporary organisations. The unit provides students with an understanding of key aspects of current management practices, including: managerial relationships; intercultural management; leadership, status and power; negotiation; interviewing; team building; managerial audits; and managerial ethics.

21806

Managing Organisational Change

6cp

This subject examines the role of the manager in planning and facilitating change in an IT environment, as well as the managerial challenges to be faced. It explores and suggests organisational change interventions. Change issues relevant to IT, such as technology assessment, will receive special emphasis.

21807

Total Quality and Productivity Management

6cp; prerequisite(s): Graduate Certificate in Information Technology Management

Productivity and quality are both key factors in successful performance in the IT industry. This subject aims to develop a clear understanding of the practical and managerial aspects of quality management and productivity management, including the fundamentals of TQM and its relationship to productivity. Students completing this subject will have a sound philosophical and practical basis for evaluating productivity and quality improvement programs and total quality implementation programs.

21808

Strategic Business Management

6cp; prerequisite(s): Graduate Certificate in Information Technology Management; 21806 Managing Organisational Change

The nature of strategic issues; arenas of strategy; the information technology industry; context and issues; concepts of strategy; environmental analysis; capability analysis; development of strategic alternatives; evaluation and choice of strategic alternatives; stability, change and transformation; the process of strategy implementation; and strategic control and monitoring.

22107

Accounting for Business

6cp
Undergraduate

In most economies business success is measured in financial terms. It is the accountants who undertake this measurement. Many decisions in business are made based on accounting information, both historical (based on past events) and projected (based on estimates of the future). Understanding accounting as a systematic way of measuring and communicating financial information on the financial status of various business entities is the foundation for any successful career in both the private and public business sectors.

22206

Government Accounting

6cp; prerequisite(s): 22107 Accounting for Business
Undergraduate

Gives a general coverage of the broad principles underlying public sector accounting, auditing and budgeting, with particular emphasis on ministerial departments and statutory bodies at federal, State and local government levels in Australia. Topics covered include the nature and environment of government accounting; implications of the fund theory of accounting for the public sector; federal, State and local government accounting processes and procedures; the role of accrual accounting in the public sector; formulating government budgets and the mechanisms of budgeting; management techniques in government business enterprises; accounting standards in the public sector; and developments and innovations in government accounting.

22207

Accounting Transactions and Business Decisions

6cp; prerequisite(s): 22107 Accounting for Business
Undergraduate

Continues the study of accounting as an information system and equips students with the appropriate accounting skills necessary to participate in a managerial capacity in the analysis of accounting information as it is used to facilitate and enhance decision-making, accountability and control. Ethical implications of decisions will be considered throughout the subject. Covers areas in both financial and management accounting, including the preparation and examination of accounting reports for partnerships and companies; the development of relevant cost concepts used in cost systems and the use of this information in performance evaluation. A computer software package is used in the review and presentation of accounting information.

22240

International Accounting

6cp; prerequisite(s): 22207 Accounting Transactions and Business Decisions
Undergraduate

In a rapidly changing world environment, the significance of international accounting has grown substantially, along with the expansion of international business activity. This subject enables students to explore the complexity and diversity of the international dimensions of accounting. Introduces a range of issues with special reference to the comparative development of national accounting systems, international accounting standards and transnational reporting issues. Covers a number of important areas and will not only inform students about the major issues, ideas and developments, but will also stimulate further inquiry and debate.

22320

Accounting for Business Combinations

6cp; prerequisite(s): 22207 Accounting Transactions and Business Decisions
recommended: to be taken at the same time as 22420 Accounting Standards and Regulations
Undergraduate

Together with 22420 Accounting Standards and Regulations, this subject deals with the application and analysis of prescribed accounting treatments. Surveys the institutional and legal framework of modern Australian accounting. Refers to international accounting standards and local and overseas standards and exposure drafts. Emphasises reporting – main topics include accounting for companies including debt and equity and its restructuring, accounting for acquisition of assets including business enterprises, valuation and goodwill, consolidated accounts of complex economic entities, accounting for associate companies and joint ventures, corporate restructuring and liquidation. Deals with preparation of accounts to meet corporate law and professional disclosure requirements. Looks at emerging issues and exposure drafts. Makes extensive use of spreadsheet programs. Students will be expected to produce business-quality reports using word-processing programs.

22321

Cost Management Systems

6cp; prerequisite(s): 22207 Accounting Transactions and Business Decisions
Undergraduate

Introduces students to the basic concepts underlying management accounting with a particular emphasis on current developments. Introduces appropriate cost management concepts, techniques and skills such as cost planning, cost behaviour, cost estimation, and cost accumulation and allocation systems (job, process and activity-based costing). Emphasises using accounting information to understand and make decisions about the management of the cost structure of an organisation.

22420

Accounting Standards and Regulations

6cp; prerequisite(s): 22207 Accounting Transactions and Business Decisions
recommended: to be taken at the same time as 22320 Accounting for Business Combinations
Undergraduate

Provides students with the ability to understand, critically evaluate and apply accounting standards and interpret financial reports. Considers the financial reporting environment and factors influencing the form of financial reporting, and addresses a range of accounting issues from within a contracting cost framework.

22421
Management Decisions and Control
6cp; prerequisite(s): 22321 Cost Management Systems
Undergraduate

Introduces students to the use of management accounting information to support managerial decisions and control various aspects of an organisation. Emphasises decision and control issues in a contemporary environment. Introduces appropriate decision and control concepts, techniques and skills such as short- and long-term operational decisions, target costing and life-cycle costing, inventory management and just-in-time, responsibility accounting systems, transfer pricing, perform-ance evaluation systems, and the behavioural impacts of management control systems. Emphasises the ways in which accounting information can be used to understand and make decisions about the operational and strategic management of an organisation, and to control the implementation and ongoing management of such decisions.

22566
Accounting for Small Business 1
6cp
Undergraduate

Develops the knowledge and skills required by accountants in dealing with the problems which are unique to their professional work in the small business sector. Highlights and emphasises the practical matters associated with the initiation and growth of a small business.

Topics covered include an overview; the requirements of establishing a business – the steps and structures; economic business cycles' growth and future; acquiring and/or financing the business; accounting – records, control, costing and pricing; financial analysis and management; appraisals and acquisitions; the growing trend towards franchising as a form of small business; taxation and tax planning; insurance and risk; business disaster planning and recovery; and business and financial planning and budgeting.

22567
Accounting for Small Business 2
6cp; prerequisite(s): 22207 Accounting Transactions and Business Decisions
Undergraduate

Provides students with the skills and knowl-edge of the techniques used to analyse finan-cial data for small and medium enterprises; how to apply these techniques with the aid of microcomputers and appropriate software; and how to develop integrated business plans to assist in the decision-making process in those enterprises.

Topics covered include an outline and a revision of basic spreadsheet terminology and function; data collection and analysis; cost–volume–profit relationships; budgeting and other planning models; cash-flow analysis and capital expenditure budgets; business valuation; and performance evaluation.

22610
Accounting for Insolvency
6cp
Undergraduate

Provides students with the accounting knowl-edge needed for businesses which are being liquidated; studies the characteristics and financial management mistakes leading to the failure of such businesses; and introduces the accounting requirements of deceased estates. Topics covered include executorship; bank-ruptcy; the practice of termination accounting; and case studies, including financial manage-ment aspects of failed businesses.

22615
Accounting Information Systems
6cp

This subject presents a range of fundamental accounting principles. This subject is intended to provide basic skills in financial accounting and to apply this knowledge of accounting to evaluating computerised accounting systems. An accounting system is an example of an information system.

22746
Managerial Accounting
6cp
Postgraduate

Management accounting information systems are one of the main decision-support systems in organisations. This subject equips students with the skills and knowledge to design and

use effective management accounting information for planning and controlling organisational activities. Topics include absorption costing, cost behaviour and cost–volume–profit analysis, budgetary planning and control, differential costs, activity-based costing, and standard costing and variance analysis.

22747
Accounting for Managerial Decisions
6cp
Postgraduate

Introduces students to the basics of financial and management accounting. Topics include the nature and purpose of accounting, accounting reports (balance sheets, profit and loss statements, cash flow statements) and analysing accounting; accounting reports and financial reports; the nature of management accounting and cost concepts; strategic planning and budgeting; cost accumulation systems (traditional costing systems and activity-based costing systems); and responsibility accounting (the management control structure, and analysing and reporting on performance).

24108
Marketing Foundations
6cp
Undergraduate

Covers the basic principles of marketing. Develops an understanding of the overall process of marketing planning, implementation and control in the contemporary business environment. Also develops a basic understanding of marketing information systems, market research and marketing ethics, market segmentation, buyer behaviour, product development and the development of product, distribution, promotion and pricing strategies for both goods and services domestically and internationally.

24202
Consumer Behaviour
6cp; prerequisite(s): 24108 Marketing
Foundations
Undergraduate

Provides a basic theoretical grounding in the field of consumer behaviour, by drawing upon the contributing disciplines of psychology, social psychology, sociology, anthropology, communication and economics. Develops a better understanding and awareness of consumers as the central focus of marketing action and encourages students to appreciate the value of models as tools of conceptual analysis. Marketing strategy is considered within a broader social framework involving public policy formulation and embracing such issues as ethics, regulations and consumerism as necessary considerations in an increasingly competitive and constrained social, political and economic environment.

24205
Business Marketing
6cp; prerequisite(s): 24108 Marketing
Foundations
Undergraduate

Focuses on the buying and selling of goods and services between firms, which constitutes 60–80 per cent of all marketing activity. Develops the special skills and concepts needed to function effectively in this setting, including personal selling, negotiation, preparation of bids, the sales–purchasing interface, relationship marketing and relationship management. Introduces the wider context in which business marketing sits – the distribution channel and network of connected firms in the wider domestic and international markets.

24210
Advertising and Promotions Management
6cp; prerequisite(s): 24108 Marketing
Foundations; 24202 Consumer Behaviour
Undergraduate

Examines advertising, promotion and other marketing mix communications decisions from an applied viewpoint based on theory and current practice.

Provides students who might be potential brand managers, advertising managers or executives with systematic approaches to setting advertising and promotion objectives, establishing budgets, identifying relevant target audiences, formulating and testing strategies, and evaluating campaign results. Considers contemporary issues in advertising, together with reference to complementary aspects such as publicity, sponsorship and direct marketing.

24220

International Marketing

6cp; prerequisite(s): 24108 Marketing
Foundations
Undergraduate

Introduces international marketing using the marketing concept, and considers how international marketing strategies are affected by environmental factors. Students are expected to develop international marketing strategies for Australian firms which reflect the way marketing concepts and marketing mix elements need to be modified when applied to overseas markets because of differences in the political, economic, legal and cultural environments.

24309

Introductory Marketing Research

6cp; prerequisite(s): 24108 Marketing
Foundations; 26133 Business Information
Analysis
Undergraduate

Introduces students to the concepts and practices of marketing research. Topics covered range from research problem definition to research design, implementation and finally interpretation of research results. Specifically focuses on Australian practices, procedures and ethics. Considerable focus is placed upon the microcomputer and its role in modern research. Skill development in both spreadsheet and statistical applications software is a key aim.

24704

Managing Client Relations

6cp

This subject reviews the nature of the business development process through focusing upon the specific needs of clients. It explores the complex issues of determing and focusing on client needs as a key activity for IT managers who wish to maximise their impact. Specific IT-based case material will be used throughout the course to ensure that participants recognise the essential relationship between product and client satisfaction.

25115

Economics for Business

6cp
Undergraduate

Develops an understanding of basic economic principles and their application to business decision making and business strategy.

Provides a foundation for further studies in business, economics and finance. Provides students with the ability to read and understand analyses presented in the financial and business media and be able to effectively participate in the formulation of business strategies.

25210

Microeconomic Theory and Policy

6cp; prerequisite(s): 25110 Microeconomics[1] or
25115 Economics for Business
Undergraduate

Shows how and why governments become involved in private sector activity. Emphasises the theoretical justification for regulation, the nature of market failure justifying the regulation and the consequences. Topics include cost-benefit analysis, public enterprise, deregulation and privatisation, competition policy, trade and industry theory and policy.

[1] This subject is no longer offered.

25300

Fundamentals of Business Finance

6cp; prerequisite(s): 22107 Accounting for
Business; 25115 Economics for Business;
corequisite(s): 26133 Business Information
Analysis
Undergraduate

Introduces students to the concepts of financial management and the main approaches to solving financial problems of the firm. Topics include financial markets; introduction to foreign exchange risk; introduction to futures and options; capital budgeting; financing decisions and working capital management. Develops skills in searching for financial information via the web and the use of computer packages such as Excel.

25303

Industry Economics

6cp; prerequisite(s): 25110 Microeconomics[1] or
25115 Economics for Business
Undergraduate

Examines the changing structure, conduct and performance of Australian industry within the context of international restructuring. Issues include barriers to entry, oligopoly pricing, vertical integration, market structures and technological change, and mergers and takeovers in a theoretical and empirical context. Emphasis is placed on practical analysis of firm behaviour in a market.

[1] This subject is no longer offered.

25309

Macroeconomic Theory and Policy

6cp; prerequisite(s): 25209 Macroeconomics[1] or 25115 Economics for Business
Undergraduate

Traces the development of classically-oriented and Keynesian-oriented theory and seeks to identify how these theoretical developments have affected the way policies are put into practice when addressing key macroeconomic issues. These issues include: the operation of monetary and fiscal policy; inflation and unemployment; business cycle theory; and international influences on the domestic economy.

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[1] This subject is no longer offered.

25410

Corporate Financial Analysis

6cp; prerequisite(s): Bachelor of Business core subjects in Semesters 1 and 2
Undergraduate

Examines the use of financial statements in assessing a firm's financial 'health', its strengths, weaknesses, recent performance and future prospects. Examines financial statement forecasting and modelling with an emphasis on cash-flow reconstructions from financial statements. Special issues dealing with financial statement information are emphasised in some depth. These issues include market efficiency, asset pricing, corporate restructuring and business valuation, debt ratings and financial distress.

25606

Financial Time Series

6cp; 4hpw; prerequisite(s): 35232 Advanced Calculus; 35353 Regression Analysis

Financial returns; their definitions and behaviour. Models of price volatility. Forecasting standard deviations. Testing the random walk hypothesis. Testing the market efficiency hypothesis. Forecasting trends in prices. Valuing options.

25620

Derivative Securities

6cp; prerequisite(s): 25406 Quantitative Techniques for Finance and Economics; 25503 Investment Analysis
Undergraduate

Provides students with the techniques needed to analyse and price derivative securities. An introduction to derivative securities follows, together with discussion of basic arbitrage arguments, the pricing of futures, properties of options, pricing of differing financial instruments and hedging strategies using derivatives.

25621

Financing Decisions and Capital Market Theory

6cp; prerequisite(s): 25406 Quantitative Techniques for Finance and Economics. Bachelor of Business core subjects in Semesters 1 and 2
Undergraduate

Provides an understanding of the theory, empirical evidence and practice of corporate financing decisions. On completion of the subject, students should be able to critically evaluate a company's existing capital structure and proposed methods of raising new finance. Other topics considered review the theoretical and empirical research relating to the efficient market hypothesis.

25742

Financial Management

6cp
Postgraduate

Provides the analytical framework for corporate financial decisions. Introduces students to financial theory and to the tools of financial decision making. Concerned primarily with investment project evaluation and determining the financing mix necessary to achieve the firm's financial objectives. Topics include the conceptual basis of financial decisions, accounting statements and cash flow, net present value, the valuation of debt and equity, capital budget issues, risk and return, the capital asset pricing model (CAPM), capital structure – determinants of the optional balance of debt and equity, dividend policy, and leasing.

25905

Capital Budgeting and Valuation (Honours)

6cp; prerequisite(s): 25406 Quantitative Techniques for Finance and Economics; 25314 Business Finance
Undergraduate

Presents the technical tools to master the traditional as well as the more recent approaches to capital budgeting and valuation.

25906

Investment Analysis (Honours)

6cp; prerequisite(s): 25406 Quantitative Techniques for Finance and Economics; Bachelor of Business core subjects in Semesters 1 and 2
Undergraduate

A few minutes at the beginning of every lecture will be allocated to analyse any significant local or global event over the past week that may have an impact on macroeconomic variables and thus may affect investment decisions. Students will be required to scan all possible sources of financial and economic information to be able to contribute to this effectively.

25910

Thesis

12cp; prerequisite(s): by consent

A thesis on a topic chosen by the student in consultation with his or her supervisor.

25921

Theory of Financial Decision Making

6cp; prerequisite(s): admission to the Honours program
Undergraduate

Introduces the foundations of modern portfolio theory and how it is applied. Topics covered include: theory of choice; mean-variance criterion; capital market equilibrium; Capital Asset Pricing Model and Arbitrage Pricing Theorem; and equilibrium evaluation of derivative securities.

25923

Derivative Security Pricing

6cp; prerequisite(s): admission to the Honours program
Undergraduate

Provides the techniques needed to analyse and price derivative securities and to understand some of the key associated quantitative arguments. Topics include: derivative securities; arbitrage arguments; geometric Brownian motion model of asset prices; Ito's lemma; risk-neutral pricing; Black Scholes option pricing model; currency, index and futures options; hedging techniques; and interest rate derivative securities.

59316

Essay Writing

4cp; over 10 weeks
English Language Study Skills Assistance Centre

This elective is one of four subjects offered by the ELSSA Centre and it is aimed at non-English-speaking background students who need to develop their essay-writing skills. It focuses on the critical analysis of topics relevant to different academic areas of study, the development of essay outlines and the final preparation of essays.

59317

Report Writing

4cp; over 10 weeks
English Language Study Skills Assistance Centre

This elective is one of four subjects offered by the ELSSA Centre and it is aimed at non-English-speaking background students who need to develop their report-writing skills. It focuses on the analysis of topics relevant to different academic areas of study, the development of report plans and the final preparation of reports.

59330

Advertising Practice

6cp

This is an introduction to the theory and production of advertising: the concepts used; the skills and techniques applied; the organisational structure and operation of advertising agencies; and their interrelationships with other parts of the communication industry.

59333

Advertising Strategies

6cp; prerequisite(s): 59330 Advertising Practice

This subject offers an examination of and practice in a variety of visual and verbal persuasion methods in television, radio, print and other media. Students will be involved in individual and group presentations of solutions to various advertising problems, and gain some insight into the analysis and valuation of advertising techniques.

68101

Foundations of Physics

6cp; 6hpw

This is a foundation physics subject primarily for students in the physical sciences. It covers the fundamentals of dynamics and statics,

fluid mechanics, thermal physics, waves and electricity. A strong emphasis is placed on the investigative nature of physics research with an integrated laboratory program developing further the problem-solving skills of the lecture and tutorial material to an appreciation of good experimental design and significance in information obtained under real-life modelling situations.

68201

Physics in Action (Physics 2)

6cp; 6hpw; prerequisite(s): 68101 Foundations of Physics

This subject extends the material studied in 68101 Foundations in Physics, with statics and dynamics extended to a study of rotation, thermal physics extended to the first two laws of the thermodynamics and waves extended to a study of geometrical optics and optical devices. At the same time, students are introduced to electric circuitry and electromagnetism and commence a historical study of atomic and nuclear physics.

68311

Atoms, Photons and Orbits (Physics 3)

6cp; 5hpw; prerequisite(s): 33190 Mathematical Modelling for Science or equivalent; 68201 Physics in Action (Physics 2); corequisite(s): 33290 Computing and Mathematics for Science

First-year mathematical techniques enable students in this subject to extend the understanding and modelling of mechanics and optics to more real-world situations and at the same time explores the exciting evolution from Newtonian Physics to Quantum Physics. It provides the foundation for later core physics subjects, the emphasis of the subject being mainly theoretical but it has an experimental component applying the explorative first year techniques to optical experimentation, a study of radioactivity and computer simulation of dynamical systems.

Mechanics topics include the generalisation of kinematics to 3D motion and orbital mechanics. Optics studies include refraction, lenses, photography, the dispersion of light, aberrations, polarisation and scattering phenomena. 'Modern' physics will study the basic properties of the atom, radioactivity and relativity and lead into an introductory segment on Quantum Physics.

68312

Electrotechnology and Data Analysis

6cp; 5hpw; prerequisite(s): 68201 Physics in Action (Physics 2); 33290 Computing and Mathematics for Science

Scientific writing, rigorous analysis and a command of methods of presentation are essential tools for the physicist of the 21st century. In this subject, students study the concepts of electricity, electromagnetism and electrical measurements and their application to dynamical systems at the same time as exploring contemporary techniques of analysis of experimental data. These two areas are integrated into a project component which develops further the skills of experimental design developed in 68101 Foundations of Physics in an electromagnetic context and enables the students to become critical analysers of their own and others' experimental work.

68314

Electronics

6cp; 5hpw; prerequisite(s): 68201 Physics in Action (Physics 2); 33290 Computing and Mathematics for Science

This subject will develop students' understanding of the basic building blocks of electronic circuits. Review of circuit theory, semiconductor theory, diodes and bipolar transistors, transistors as switches and linear devices, introduction to digital electronics, logic gates, latches and counters, frequency characteristics and feedback in amplifiers, operational amplifiers. Hands on learning, guided discovery activities in laboratory context are a key feature. The subject is equivalent to the Engineering subject 48520 Electronics.

68411

Vibrations, Quanta and Nucleons (Physics 4)

6cp; 5hpw plus 1 flexible; prerequisite(s): 68311 Atoms, Photons and Orbits (Physics 3); 33290 Computing and Mathematics for Science; 33390 Mathematics and Scientific Software or equivalent

This subject aims to complete the basic core physics training for Applied Physics students by applying the treatment of mechanics to vibrations, to variable mass and fluid flow and to the special features of the mechanics of the atom. The students will learn the basic techniques of quantum mechanics to begin to understand the findings of atomic theory

introduced in 68311 Atoms, Photons and Orbits (Physics 3). Processes involving the considerable forces associated with the inner structure of the nucleus are studied to provide an understanding of the power of nuclear applications in the fields of medicine and forensic science. This is core material, providing the foundation for a study of the solid-state and leads directly into the subject 68511 Quantum and Solid-state Physics.

68514

Electronics and Interfacing

6cp; 5hpw; prerequisite(s): 68314 Electronics; 48520 Electronics or equivalent instrumentation experience

The subject will further develop students' understanding of computer interfacing in applied physics and science in general. You will learn how to construct functioning interfaces and the role of digital electronics. Digital electronics, computer interfacing, and the use of the LabView package will be the main components of the subject. A sequence of small projects will involve the design and construction of circuits and interfaces and is a key feature of the subject. This subject would be useful to students in science courses who have an interest in developing their skills in the instrumentation and interfacing areas, with project work oriented to students' needs and interests.

70105

Legal Research

4cp
Undergraduate

This subject aims to familiarise students with the basic tools available to engage in legal research. It includes an introduction to various paper-based resources (citations, digests etc.).

Students are also introduced to the use of computerised systems as an aid to legal research. The emphasis is on Internet-based systems such as AustLII, Scale Plus and Butterworths Online. CD-ROM products are also briefly covered.

70113

Legal Process and History

10cp
Undergraduate

This subject aims to introduce students to, and to provide students with, a sound working knowledge of the Australian legal and constitutional environment. The subject also aims to equip students with certain legal skills – in particular, the skills of case analysis, statutory interpretation, legal problem solving and critical analysis – which are essential to the study and practice of the law. Students will be asked to consider what is law, who makes law, and how and why the law has developed in the way that it has. They will also examine the institutions that make up our legal system – the legislature, the Crown and the executive, the courts and the 'legal players' (the judge, the jury and the legal practitioner) – and explore the principles and doctrines that underpin our legal system. Further, they will be asked to consider why our legal system is so different from that of some of our regional neighbours, and to evaluate the strengths and weaknesses of the common law legal system. Valuable insight into the way our legal system operates may be gained through using a historical approach, and this means delving back into English, as well as Australian, legal and constitutional history. Such an approach also facilitates refinement of critical analysis skills. At the end of the subject, students should have a fully developed understanding of the Western legal tradition, the place of common law in that system, and the ramifications of living under a Westminster parliamentary system as well as a federal system.

70211

Law of Contract

8cp; prerequisite(s): 70113 Legal Process and History; corequisite(s): 70217 Criminal Law; 70105 Legal Research
Undergraduate

This subject deals with the legal principles related to when promises are binding, the difficulties arising out of their interpretation, how they may become defeasible, issues relating to their performance, and how they may be discharged. Topics covered include the formation of contracts (agreement, consideration, terms); vitiating factors (capacity, mistake, misrepresentation, illegality, duress, undue influence, unconscionability); discharge by performance and non-performance of contractual obligations (breach and frustration); and contractual remedies.

70217

Criminal Law

6cp; corequisite(s): 70113 Legal Process and History; 70105 Legal Research
Undergraduate

This subject deals with the substantive criminal law, the doctrines and rules that define the conditions of criminal liability and some aspects of the procedural law. Australian common law doctrine and the *Crimes Act 1900* (NSW) are considered. Topics include the nature of crime; the doctrine of *mens rea* and *actus reus*; presumption of innocence; offences against the person; property offences; strict liability; complicity; criminal defences; criminal investigation and procedure; and drug law.

70311

Law of Tort

8cp; prerequisite(s): 70113 Legal Process and History; corequisite(s): 70105 Legal Research; 70217 Criminal Law
Undergraduate

This subject discusses the functions and aims of the tort. It then examines the nature of tortious liability in the light of a selection of specific torts, namely, trespass to the person, goods and land; the action on the case for wilful injuries; conversion; negligence; nuisance; and defamation. Reference is also made to defences, vicarious liability and contribution between tortfeasors.

Attention is drawn to the relevance of the type of conduct complained of (intentional, reckless, careless); the nature of the various interests protected (personal security, chattels, land, reputation, economic interests, domestic relations); the adaptability of tort law to changing needs and values of society (thus the introduction, dominance and current perceived limitations of the fault concept); and the element of policy expressed or implied in judicial decisions.

70317

Real Property

8cp; prerequisite(s): 70211 Law of Contract; corequisite(s): 70311 Law of Tort
Undergraduate

Topics covered include agreements for sale of land; time for completion; Torrens title and priorities; old system, possessory, qualified and limited title; fixtures; trespass to land; co-ownership; easements; covenants; mortgages; and leases.

70318

Personal Property

4cp; prerequisite(s): 70211 Law of Contract; corequisite(s): 70311 Law of Tort
Undergraduate

Topics covered include classifications of personal property, choses in action and choses in possession; acquisition of title to goods; law of bailment; insurance; securities interests in chattels; and law of negotiable instruments, with particular reference to cheques.

70417

Corporate Law

8cp; prerequisite(s): 70317 Real Property
Undergraduate

The response of the law to the activities of business entities is dealt with in this subject. Although the emphasis is on corporations, there will be a brief discussion of the manner in which non-corporate entities including partnerships are regulated. The study of corporations law will include an overview of the historical developments, the current method of regulation and the proposals for reform.

70516

Equity and Trusts

8cp; prerequisite(s): 70317 Real Property; corequisite(s): 70417 Corporate Law
Undergraduate

Equity is a body of rules or principles developed in the Court of Chancery before 1873. The doctrines of equity developed as a response to defects in the English common law system, defects which had resulted in rigidity and inflexibility. A knowledge of the principles of equity is therefore crucial to a complete understanding of the law in those areas of private law, particularly property and contract, where equity intervened to modify the operation of the rules of the common law. In that sense, the doctrines of equity form part of the law of contract or property. Equity also developed remedies, such as the injunction, which were unknown to the common law and which have a continuing influence in public law as well as private law.

70616

Federal Constitutional Law

8cp; prerequisite(s): 70113 Legal Process and History; 70105 Legal Research; corequisite(s): 70211 Law of Contract
Undergraduate

This subject examines the effect of the Australian Constitution on the legal and fiscal relationship of the Commonwealth, States, and Territories. In order that students develop an understanding of the techniques of judicial review in the constitutional context, a range of powers given to the Commonwealth is examined. These include trade and commerce, corporations, taxation and external affairs. Other areas examined are explicit and implicit restrictions of power, the questions of inconsistency and intergovernmental relations. The general role of the High Court in Australian constitutional law is considered, along with the Separation of Powers Doctrine as it relates to the independence of the judiciary.

70617

Administrative Law

8cp; prerequisite(s): 70616 Federal Constitutional Law
Undergraduate

This subject deals with the supervision of the executive arm of government by the courts and by other statutory mechanisms. Topics include the grounds of review of administrative decisions, in particular natural justice; ultra vires; jurisdictional error and error of law; remedies available at common law upon judicial review, including the prerogative writs and equitable remedies; judicial review under the *Administrative Decision (Judicial Review) Act 1976* (Cwlth); a review of Commonwealth decisions under the *Administrative Appeals Tribunal Act 1976* (Cwlth); and the role and function of the Ombudsman. If time permits, freedom of information and privacy legislation will also be touched upon, and the role of the Independent Commission Against Corruption (ICAC).

71005

Practice and Procedure

4cp; prerequisite(s): 70516 Equity and Trusts
Undergraduate

Practice and Procedure is a core subject that develops the students' understanding of the process of litigation from the commencement of proceedings through to the final hearings. Topics include statements of claim in contracts and torts; defence, cross-claims and replies; equitable proceedings; particulars; discovery, inspection and interrogatories; notice of motion; drafting affidavits; subpoenas; and advocacy skills.

71116

Remedies

6cp; prerequisite(s): 70516 Equity and Trusts
Undergraduate

This subject deals with the range of court-ordered remedies available to a plaintiff in civil proceedings. The more common remedies are those administered at either common law or in equity: damages; equitable remedies (declarations, specific performance, injunctions, Anton Pillar orders, account, equitable damages); and statutory and common law remedies for deceptive conduct. Bankruptcy and insolvency will also be considered.

71216

Law of Evidence

6cp; prerequisite(s): 70516 Equity and Trusts
Undergraduate

This subject deals with adjectival law and the determination of how information may be presented to the court in litigation, when such information will be admissible in evidence, and how the rules of proof are applied. The inclusionary rule of relevance, the various exclusionary rules (such as hearsay, opinion, tendency, coincidence, credibility, character, privilege), and the judicial discretion to exclude will be studied, as well as the incidence of the burden of proof.

79203

Business Law and Ethics

6cp; core
Undergraduate Cross-disciplinary

Business Law and Ethics provides the fundamental foundation for all future law subjects in the BBus. It covers Australian and international commercial relationships in contract and consumer protection, as well as developing laws, such as intellectual property. Students are able to learn legal research techniques involving the internet and paper-based library resources. Focus on skills and developing general principles that can be applied to all areas of law, both now and in the future. Particular focus is made of resolving personal and professional ethical dilemmas, as well as the choice of resolving commercial disputes in and outside the court system.

95560

Multimedia Industry and Process

8cp

This subject will examine the nature of the interactive multimedia industry today. It explores industry structure and trends, government policies in relation to the industry, job specifications, multimedia development teams and roles, the interactive multimedia development process, costs associated with development, and significant issues such as copyright and intellectual property. This subject also includes a series of optional master classes to introduce some common Web development tools and techniques.

95561

Multimedia Products and Technology

8cp

This subject situates the study of multimedia products and technologies in the comparative, historical context of the traditional media. It looks at debates about the impact of communication technologies on society and culture, the trends and impacts of globalisation, and the ways in which audiences can create meaning out of print and audio-visual communication.

95562

Multimedia Project

24cp

Students work in teams made up of students specialising in complementary disciplines to develop a major project. For example, a team might comprise students majoring in computer science, design, education and project management. Topics such as project management and business plan development are taught using a problem-based approach alongside the project development as required.

INTERNATIONAL STUDIES SUBJECTS

50140

Comparative Social Change

8cp; for undergraduate students
Offered by the Faculty of Humanities
and Social Sciences

The aim of this subject is to provide students with an understanding of the processes of modernisation and social change in a comparative context using case studies in countries of Western Europe, Latin America, and East and South-East Asia. The lectures will highlight a number of key issues, including whether the processes of social change are universal or specific; the consequences of modernisation in and for the economy, politics, society, culture and ideology of non-Western societies; and whether the established Eurocentric analytical models are still useful in understanding the modern world. It will be emphasised that differing interpretations of modernisation flow from various relations of power which lead to a multiplicity of views on its meanings and significance.

971111, 972111, 973111, 974111

Chinese Language and Culture subjects

Chinese Unit 1

8cp; 6hpw; prerequisite: nil

Chinese 1 aims at developing in students a survival communicative ability in basic social interactions. It teaches students *Pinyin*, the official transcription system, as a guide to the pronunciation of the Chinese language, and some basic structures and devices of the language. Students are expected to know about 300 Chinese characters by the end of this unit.

Chinese Unit 2

8cp; 6hpw; prerequisite: Chinese Unit 1

Chinese 2 continues to develop in students a survival communicative ability in basic social interactions. It also introduces some of the basic structures and devices of the language. Students are expected to know about 600–800 Chinese characters by the end of this unit.

Chinese Unit 3

8cp; 6hpw; prerequisite: Chinese Unit 2 or HSC 2/3-unit Chinese

Chinese 3 is the entry point for students who have completed HSC 2/3-unit Chinese and who first learnt Chinese at school in Australia.

Chinese 3 aims at further developing students' oral communicative competence in basic social interactions. More written texts will be gradually introduced to enhance the ability of students to use Chinese characters. The basic structures and devices of the language will be reinforced. Students are expected to know about 1,200 Chinese characters by the end of this unit.

Chinese Unit 4

8cp; 6hpw; prerequisite: Chinese Unit 3

Chinese 4 is the second unit for students who have completed HSC 2/3-unit Chinese.

Chinese 4 aims at further developing students' communicative competence in basic social interactions. More written texts are introduced to enhance the ability of students to use Chinese characters. The basic structures and devices of the language are also reinforced. Students are expected to know about 1,600 Chinese characters by the end of this unit.

Chinese Unit 5

8cp; 6hpw; prerequisite: Chinese Unit 4

Chinese 5 is the third unit for students who first learnt Chinese at school in Australia and obtained HSC 2/3-unit Chinese.

Chinese 5 aims at further developing students' communicative competence in general social interactions. While reinforcing the macro-skills of reading, writing, listening and speaking, this unit will focus on practical writing skills. Students are expected to know about 2,000 Chinese characters by the end of this unit.

Chinese Unit 6

8cp; 6hpw; prerequisite: Chinese Unit 5

Chinese 6 is the fourth subject for students who have obtained HSC 2/3-unit Chinese with basic communicative skills and the ability to undertake In-country Study in China.

Chinese 6 aims at further developing students' communicative competence in general social interactions. While reinforcing basic structures and devices of the language, this unit will further develop students' writing skills. Students are expected to know about 2,500 Chinese characters by the end of this unit.

Chinese Unit 7

8cp; 4hpw; prerequisite: a working knowledge of Chinese characters as well as communicative competence in a Chinese language other than Modern Standard Chinese.

Chinese 7 is for students who have a working knowledge of Chinese characters as well as communicative competence in a Chinese language other than Modern Standard Chinese.

This unit aims at developing communicative competence to meet students' needs in social and professional interactions where Modern Standard Chinese (also known as Mandarin, *Putonghua* or *Guoyu*) is used. Simplified characters, pronunciation, intonation and situational Chinese usages are the focus of class instruction.

Chinese Unit 8

8cp; 4hpw; prerequisite: Chinese Unit 7 or equivalent

This unit aims at developing a communicative competence at a more sophisticated level. Students are exposed to a range of Chinese texts in varied sociocultural contexts in order to master the use of Chinese for different purposes, and are provided with opportunities to further improve speaking and listening skills through discussions of the texts and making cross-cultural comparisons.

Chinese Unit 9

8cp; 4hpw; prerequisite: Chinese Unit 8 or equivalent

This unit aims at developing in students a high level of communicative competence required for understanding various electronic and published media articles, correspondence and texts related to contemporary society where Modern Standard Chinese (also known as Mandarin, *Putonghua* or *Guoyu*) is used. Students are exposed to a range of Chinese texts in order to master the use of Chinese for different purposes, and are provided with opportunities to maintain speaking and listening skills through discussion of the texts.

Chinese Unit 10

8cp; 4hpw; prerequisite: Chinese Unit 9 or equivalent

This unit aims at further developing in students a high level of communicative competence in reading and writing to meet students' needs in social and professional interactions. Modern Standard Chinese (also known as Mandarin, *Putonghua* or *Guoyu*) is used. Students are exposed to a range of diverse texts from modern Chinese literature, history, language and culture in order to master the use of written Chinese for different purposes, and are provided with further opportunities to maintain speaking and listening skills through discussion of the texts.

971411, 972411, 973411, 974411

French Language and Culture subjects

French Unit 1

8cp; 1st semester, 6hpw; prerequisite: nil

French 1 is the first in a series of four units designed to provide students who have no prior knowledge of the French language with basic survival skills in language and culture and the ability to undertake In-country Study in France.

By the end of the unit, students would be expected to have achieved 'elementary proficiency' and be able to satisfy immediate communication needs required in basic social interaction, using expressions and phrases they have learnt. The program allows for the development of listening, speaking, reading and writing skills, and an understanding of the sociocultural contexts in which the language is used. In particular, students gain an awareness of the background of French-speaking countries. Students also develop strategies for predicting the meaning of new expressions and anticipating ways to express new meanings.

The approach adopted is communicative and provides students with many opportunities to interact and use the language in various social and cultural contexts. Audiovisual equipment and computers will be used to facilitate learning.

French Unit 2

8cp; 2nd semester, 6hpw; prerequisite: French Unit 1 or equivalent

French 2 is the second in a series of four units designed to provide students who have no prior knowledge of the French language with basic survival skills in language and culture and the ability to undertake In-country Study in France.

By the end of the unit, students would be expected to have achieved 'minimum survival proficiency' in speaking, listening, reading and writing and be able to satisfy immediate communication needs and minimum courtesy requirements required in basic social interaction. Students will also develop an understanding of the sociocultural contexts in which the language is used and develop further communication strategies.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in a meaningful way in various social and cultural contexts. Audiovisual equipment and computers will be used to facilitate learning.

French Unit 3

8cp; 1st semester, 6hpw; prerequisite: French Unit 2, HSC French, or equivalent

French 3 is the third in a series of four units for students with no prior knowledge of the French language, or the first in a series of four units for students who have successfully completed HSC 2/3-unit French, or its equivalent. It provides students with basic survival skills in French language and culture, and the ability to undertake In-country Study in France.

By the end of the unit, students would be expected to have achieved communicative competence in speaking, listening, reading and writing skills to be able to satisfy all 'survival' needs and limited social needs. They would also be expected to have developed an awareness of the various social and cultural contexts in which the language is used. In this unit, students develop the ability to understand the general content of magazine and newspaper articles.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in various social and cultural contexts. Audiovisual equipment and computers will be used to facilitate learning.

French Unit 4

8cp; 2nd semester, 6hpw; prerequisite: French Unit 3 or equivalent

French 4 is the fourth in a series of four units for students with no prior knowledge of the French language, or the second in a series of four units for students who have successfully completed French 3, HSC 2/3-unit French, or its equivalent; and equips these students with basic survival skills in French language and culture and the ability to undertake In-country Study in France.

By the end of the unit, students would be expected to have begun to develop the communication skills required to satisfy limited routine social or work demands related to the situation covered. Students would also have developed an awareness of the various social and cultural contexts in which the language is used. Students learn to express opinions, discuss education, entertainment and travel, and develop the language skills and background knowledge required to find accommodation.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in various social

and cultural contexts. Audiovisual equipment and computers will be used to facilitate learning.

French Unit 5

8cp; 1st semester, 6hpw; prerequisite: French Unit 4 or equivalent

French 5 is the third in a series of four units designed to provide students who have successfully completed French 4, HSC 2/3-unit French, or its equivalent, with the ability to consolidate and extend their knowledge during a period of In-country Study in France.

By the end of the unit, students would be expected to have achieved the communicative competence required to satisfy routine social demands and limited work requirements in speaking, listening, reading and writing skills. They would also be expected to have developed an awareness of the various social and cultural contexts in which the language is used. Students learn to communicate in French and to compare lifestyles, university life and education and practice interview techniques in preparation for In-country Study.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in a meaningful way in various social and cultural contexts. There are discussions and debates on set topics. Audiovisual equipment and computers will be used to facilitate learning.

French Unit 6

8cp; 2nd semester, 6hpw; prerequisite: French Unit 5 or equivalent

French 6 is the fourth in a series of four units designed to provide students who have successfully completed French 5, or its equivalent with the ability to consolidate and extend their knowledge during a period of In-country Study in France.

By the end of the unit, students would be expected to have achieved the communicative competence required for limited formal and informal conversations on practical and social topics. Students would also be expected to be able to read and write with sufficient accuracy to meet a limited range of social needs and limited work needs. Language development focuses on topics such as economy, class and social stratification, gender roles, religion and beliefs, literature and the arts.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in a meaningful way in various social and cultural contexts.

There are discussions and debates on set topics. Audiovisual equipment and computers will be used to facilitate learning.

French Unit 7

8cp; 1st semester, 4hpw; prerequisite: French Unit 6

French 7 is designed to provide students who have successfully completed French 6, or its equivalent with the ability to consolidate and extend their knowledge of French in preparation for a period of In-country Study in France.

By the end of the unit, students are expected to be able to communicate confidently in French in a wide variety of everyday situations, and to have comprehension skills which enable them to read a wide variety of authentic materials in French. Students are expected to extend their knowledge of present-day French society and culture and to have acquired the vocabulary and linguistic structures necessary to participate in formal and informal conversations with considerable accuracy.

The classroom approach provides students with opportunities to further develop their vocabulary, fluency and accuracy as they use French to respond to authentic texts and to discuss set topics. Students are required to read extensively in preparation for classroom presentations and discussions.

French Unit 8

8cp; 2nd semester, 4hpw; prerequisite: French Unit 7

French 8 is designed to provide students who have successfully completed French 7, or its equivalent with the ability to consolidate and extend their knowledge of French in preparation for a period of In-country Study in France.

By the end of the unit, students are expected to demonstrate the linguistic skills and cultural awareness required to engage appropriately in a range of formal and informal discussions in social, professional and educational contexts.

The classroom approach provides students with opportunities to further develop their vocabulary, fluency and accuracy as they use French to discuss set topics and to respond to authentic texts, television programs and films. Students are required to read extensively in preparation for classroom presentations and discussions.

971421, 972421, 973421, 974421
German Language and Culture subjects

German Unit 1

8cp; 1st semester, 6hpw; prerequisite: nil

German 1 is the first in a series of four units designed to provide students who have no prior knowledge of the German language with basic survival skills in German language and culture and the ability to undertake In-country Study in Germany.

By the end of the unit, students would be expected to have achieved 'elementary proficiency' and be able to satisfy immediate communication needs required in basic social interaction, using expressions and phrases they have learnt. The program allows for the development of listening, speaking, reading and writing skills, and an understanding of the sociocultural contexts in which the language is used. Students gain, in particular, an awareness of the background of German-speaking countries. Students also develop strategies for predicting the meaning of new expressions and anticipating ways of expressing new meanings.

The approach adopted is communicative and provides students with many opportunities to interact and use the language in various social and cultural contexts. Audiovisual equipment and computers will be used to facilitate learning.

German Unit 2

8cp; 2nd semester, 6hpw; prerequisite: German Unit 1 or equivalent

German 2 is the second in a series of four units designed to provide students with no prior knowledge of the German language with basic survival skills in German language and culture and the ability to undertake In-country Study in Germany.

By the end of the unit, students would be expected to have achieved 'minimum survival proficiency' in speaking, listening, reading and writing and be able to satisfy immediate communication needs and minimum courtesy requirements required in basic social interaction. Students will also develop an understanding of the sociocultural contexts in which the language is used and further communication strategies.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in a meaningful way in various social and cultural contexts. Audiovisual equipment and computers may be used to facilitate learning.

German Unit 3

8cp; 1st semester, 6hpw; prerequisite: German Unit 2, HSC German, or equivalent

German 3 is the third in a series of four units for students with no prior knowledge of the German language, or the first in a series of four units for students who have successfully completed HSC 2/3-unit German, or its equivalent. It provides students with basic survival skills in German language and culture and the ability to undertake In-country Study in Germany.

By the end of the unit, students would be expected to have achieved the communicative competence in speaking, listening, reading and writing skills to be able to satisfy all 'survival' needs and limited social needs. They would also be expected to have developed an awareness of the various social and cultural contexts in which the language is used. In this unit, students also develop the ability to understand the general content of magazine and newspaper articles.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in various social and cultural contexts. Audiovisual equipment and computers will be used to facilitate learning.

German Unit 4

8cp; 2nd semester, 6hpw; prerequisite: German Unit 3 or equivalent

German 4 is the fourth in a series of four units for students with no prior knowledge of the German language, or the second in a series of four units for students who have successfully completed German 3, HSC 2/3-unit German, or its equivalent. It provides them with basic survival skills in German language and culture and the ability to undertake In-country Study in Germany.

By the end of the unit, students would be expected to have begun to develop the communication skills required to satisfy limited routine social and work demands related to the situation covered. Students would also have developed an awareness of the various social and cultural contexts in which the language is used. Students learn to express opinions, discuss education, entertainment and travel, and develop the language skills and background knowledge required to find accommodation.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in various social

and cultural contexts. Audiovisual equipment and computers will be used to facilitate learning.

German Unit 5

8cp; 1st semester, 6hpw; prerequisite: German Unit 4 or equivalent

German 5 is the third in a series of four units designed to provide students who have successfully completed German 4, HSC 2/3-unit German, or its equivalent, with the ability to consolidate and extend their knowledge during a period of In-country Study in Germany.

By the end of the unit, students would be expected to have achieved the communicative competence required to satisfy routine social demands and limited work requirements in speaking, listening, reading and writing skills. They would have developed an awareness of the various social and cultural contexts in which the language is used. Students learn to communicate in German when comparing lifestyles, university life and education and to practice interview techniques in preparation for In-country Study.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in a meaningful way in various social and cultural contexts. There are discussions and debates on set topics. Audiovisual equipment and computers will be used to facilitate learning.

German Unit 6

8cp; 2nd semester, 6hpw; prerequisite: German Unit 5 or equivalent

German 6 is the fourth in a series of four units designed to provide students who have successfully completed German 5, or its equivalent with the ability to consolidate and extend their knowledge during a period of In-country Study in Germany.

By the end of the unit, students would be expected to have achieved the communicative competence required to speak the language with reasonable accuracy, and to be able to participate readily in limited formal and informal conversations on practical and social topics. Students would also be expected to be able to read and write with sufficient accuracy to meet a limited range of social needs and limited work needs. Language focuses on topics such as the economy, class and social stratification, gender roles, religion and beliefs, and literature and the arts.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in a meaningful way in various social and cultural contexts. There are discussions and debates on set topics. Audiovisual equipment and computers will be used to facilitate learning.

German Unit 7

4cp; 1st semester, 4hpw; prerequisite: German Unit 6

German 7 is designed to provide students who have successfully completed German 6, or its equivalent with the ability to consolidate and extend their knowledge of the German language in preparation for a period of In-country Study in Germany.

By the end of the unit, students are expected to be able to communicate confidently and with a high level of accuracy in German in a wide range of formal and informal conversations, and to have comprehension skills which enable them to read a wide variety of authentic materials in German. They are expected to be able to read and write for academic and general purposes with sufficient accuracy to meet a wide range of social and academic needs.

The classroom approach provides students with opportunities to further develop their vocabulary, fluency and accuracy as they use German to respond to authentic texts and to discuss set topics. Students are required to read extensively in preparation for classroom presentations and discussions.

German Unit 8

4cp; 2nd semester, 4hpw; prerequisite: German Unit 7

German 8 is designed to provide students who have successfully completed German 7, or its equivalent with the ability to consolidate and extend their knowledge of German in preparation for a period of In-country Study in Germany.

By the end of the unit, students are expected to have achieved a high level of proficiency and speak the language with a high level of accuracy. They will be able to participate in a wide range of formal, informal and academic conversations on topics such as the economy, gender roles, social life, politics and current issues. They will also learn about academic writing and will develop academic skills such as note taking and essay writing in German. They will be expected to read and write

academic and general texts with a high degree of accuracy to meet a wide range of social and academic needs.

The classroom approach provides students with opportunities to further develop their vocabulary, fluency and accuracy as they use German to discuss set topics and to respond to authentic texts, television programs and films. Students are required to read extensively in preparation for classroom presentations and discussions.

971311, 972311, 973311, 974311

Indonesian Language and Culture

Indonesian is offered to UTS students through arrangements with other universities. Students are placed in classes appropriate to their level of competence. The aim of the Indonesian language program is to give students a good working knowledge of modern written and spoken Indonesian and to enable them to express themselves in the language correctly and with reasonable clarity.

971431, 972431, 973431, 974431

Italian Language and Culture subjects

Italian Unit 1

8cp; 1st semester, 6hpw; prerequisite: nil

Italian 1 is the first in a series of four units de-signed to provide students who have no prior knowledge of the Italian language with basic survival skills in Italian language and culture and the ability to undertake In-country Study in Italy.

By the end of the unit, students would be expected to have achieved 'minimum creative proficiency' and be able to satisfy immediate communication needs required in basic social interaction, using expressions and phrases they have learnt. The program allows for the devel-opment of listening, speaking, reading and writing skills, and an understanding of the sociocultural contexts in which the language is used. In particular, students gain an aware-ness of the background of Italian-speaking countries. Students also develop strategies for predicting the meaning of new expressions and anticipating ways of expressing new meanings.

The approach adopted is communicative and provides students with many opportunities to interact and use the language in various social and cultural contexts. Audiovisual equipment and computers will be used to facilitate learning.

Italian Unit 2

8cp; 2nd semester, 6hpw; prerequisite: Italian Unit 1 or equivalent

Italian 2 is the second in a series of four units designed to provide students who have no prior knowledge of the Italian language with basic survival skills in Italian language and culture and the ability to undertake In-country Study in Italy.

By the end of the unit, students would be expected to have achieved 'basic transactional proficiency' in speaking, listening, reading and writing, and be able to satisfy immediate communication needs and minimum courtesy requirements for basic social interaction. Students will also develop an understanding of the sociocultural contexts in which the language is used and further communication strategies.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in a meaningful way in various social and cultural contexts. Audiovisual equipment and computers will be used to facilitate learning.

Italian Unit 3

8cp; 1st semester, 6hpw; prerequisite: Italian Unit 2, HSC Italian, or equivalent

Italian 3 is the third in a series of four units for students with no prior knowledge of the Italian language, or the first in a series of four units for students who have successfully completed HSC 2/3-unit Italian, or its equivalent. It pro-vides them with basic survival skills in Italian language and culture and the ability to undertake In-country Study in Italy.

By the end of the unit, students would be expected to have achieved the communicative competence in speaking, listening, reading and writing skills to be able to satisfy all 'survival' needs and limited social needs. They would also be expected to have developed an aware-ness of the various social and cultural contexts in which the language is used. In this unit, students also develop the ability to understand the general content of magazine and newspaper articles.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in various social and cultural contexts. Audiovisual equipment and computers will be used to facilitate learning.

Italian Unit 4

8cp; 2nd semester, 6hpw; prerequisite: Italian Unit 3 or equivalent

Italian 4 is the fourth in a series of four units for students with no prior knowledge of Italian language, or the second in a series of four units for students who have successfully completed Italian 3, HSC 2/3-unit Italian, or its equivalent. It provides them with basic survival skills in Italian language and culture and the ability to undertake In-country Study in Italy.

By the end of the unit, students would be expected to have begun to develop the communication skills required to satisfy limited routine social and work demands related to the situation covered. Students would also have developed an awareness of the various social and cultural contexts in which the language is used. Students learn to express opinions, discuss education, entertainment and travel, and develop the language skills and background knowledge required e.g. to find accommodation.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in various social and cultural contexts. Audiovisual equipment and computers will be used to facilitate learning.

Italian Unit 5

8cp; 1st semester, 6hpw; prerequisite: Italian Unit 4 or equivalent

Italian 5 is the third in a series of four units designed to provide students who have successfully completed Italian 4, HSC 2/3-unit Italian, or its equivalent, with the ability to consolidate and extend their knowledge of the Italian language and culture during a period of In-country Study in Italy.

By the end of the unit, students would be expected to have achieved the communicative competence required to satisfy routine social demands and limited work requirements in speaking, listening, reading and writing skills. They would also be expected to have developed an awareness of the various social and cultural contexts in which the language is used. Students learn to communicate in Italian while comparing lifestyles, university life and education and practice interview techniques in preparation for In-country Study.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in a meaningful way in various social and cultural contexts. There are discussions and debates on set topics. Audiovisual equipment and computers will be used to facilitate learning.

Italian Unit 6

8cp; 2nd semester, 6hpw; prerequisite: Italian Unit 5 or equivalent

Italian 6 is the fourth in a series of four units designed to provide students who have successfully completed Italian 5, or its equivalent with the ability to consolidate and extend their knowledge of the Italian language and culture during a period of In-country Study in Italy.

By the end of the unit, students would be expected to have achieved the communicative competence required to speak the language with sufficient accuracy for limited formal and informal conversations on practical and social topics. Students would also be expected to be able to read and write with sufficient accuracy to meet a limited range of social needs and limited work needs. Language focuses on topics such as the economy, class and social stratification, gender roles, religion and beliefs, literature and the arts.

The approach adopted is communicative and provides many opportunities for students to interact and use the language in a meaningful way in various social and cultural contexts. There are discussions and debates on set topics. Audiovisual equipment and computers will be used to facilitate learning.

971211, 972211, 973211, 974211

Japanese Language and Culture subjects

Japanese Unit 1

8cp; 6hpw; prerequisite: nil

This is the first subject in the Japanese Language and Culture program. It is designed as the first step in providing students who have no prior knowledge of Japanese with the basic language survival skills and sociocultural awareness to enable them to undertake In-country Study in Japan.

While focusing primarily on the development of speaking and listening skills, this subject also provides a working knowledge of the *hiragana* and *katakana* scripts and approximately 50 *kanji*. Sociocultural aspects are integrated into the program as they relate to the need for students to learn to use the language appropriately in various social and cultural contexts.

Japanese Unit 2

8cp; 6hpw; prerequisite: Japanese Unit 1

This is the second in a series of four units for students with no prior knowledge of the Japanese language. By the completion of this unit, the student should be able to demonstrate the language and sociocultural skills required to establish and maintain relationships in social or work-related spheres, and fulfil basic survival needs in a Japanese-speaking environment.

Emphasis is given to the development of speaking and listening skills, but students will also further develop their reading and writing skills. Besides *kana*, they will know approximately 150 *kanji* by the end of the unit. Sociocultural aspects are integrated into the program as they relate to the need for students to learn to use the language appropriately in various social and cultural contexts.

Japanese Unit 3

8cp; 6hpw; prerequisite: Japanese Unit 2 or HSC Japanese

Japanese 3 is the third in a series of four units for students with no prior knowledge of the Japanese language, or the first in a series of four units for students who have successfully completed HSC-level Japanese. By the end of the unit, students are expected to have achieved 'survival proficiency' in the use of the language, and be able to satisfy survival needs and limited social demands relating to topics and situations covered.

At the end of the subject, students are expected to have developed their listening, speaking, reading and writing skills to a level where they can communicate in everyday situations, and are able to demonstrate an awareness of the social implications of language and behaviour.

It is expected that students will know approximately 250 *kanji* by the end of the unit.

Japanese Unit 4

8cp; 6hpw; prerequisite: Japanese Unit 3

Japanese 4 is the fourth in a series of four units for beginners. It is also the second in a series of four units for those who have successfully completed HSC-level Japanese, or its equivalent, and aim to further develop Japanese listening, speaking, reading and writing skills. By the end of the unit, students are expected to have achieved 'limited social proficiency', and be able to interact in limited social, study and work contexts with Japanese speakers in Japan or Australia. They will also have learnt approximately 350 *kanji*.

Japanese Unit 5

8cp; 6hpw; prerequisite: Japanese Unit 4

Japanese 5 is the third in a series of four units in the post-HSC series, and is for those who have successfully completed either Japanese 4, or its equivalent, and aim to further develop listening, speaking, reading, writing and cultural skills. By the end of the unit, students are expected to have achieved 'limited social proficiency', and be able to satisfy routine social and limited work demands. The emphasis is on the development of the language and of the cultural sensitivity required in both formal and informal situations. By the end of the subject, students are expected to be able to read and write approximately 470 *kanji*.

Japanese Unit 6

8cp; 6hpw; prerequisite: Japanese Unit 5

Japanese 6 is the final subject in a series of four units in the post-HSC series and is for those who have successfully completed either Japanese 5, or its equivalent. By the end of this subject, students are expected to have achieved 'minimal vocational proficiency', and be able to speak the language with sufficient structural accuracy and vocabulary to participate effectively in many formal and informal conversations on practical, social and limited vocational topics. The emphasis is on the development of the language and of the cultural sensitivity required in both formal and informal situations. By the end of the subject, students should be able to read simple prose and read and write approximately 590 *kanji*.

971331, 972331, 973331, 974331

Malaysian Language and Culture

Malaysian is offered to UTS students through arrangements with other universities. Students are placed in classes appropriate to their level of competence. The aim of the Malaysian language program is to give students a good working knowledge of modern written and spoken Malaysian and to enable them to express themselves in the language correctly and with reasonable clarity.

971734, 972734, 973734, 974734

Russian

Russian is offered to UTS students through an arrangement with other universities. Students are placed in classes appropriate to their level of competence. The aim of the Russian language program is to give students a good working knowledge of modern written and

spoken Russian and to enable them to express themselves in the language correctly and with reasonable clarity.

971501, 972501, 973501, 974501

Spanish Language and Culture subjects

Spanish Unit 1

8cp; 1st semester, 6hpw; prerequisite: nil

Spanish 1 is the first in a series of four units designed to provide students who have no prior knowledge of the Spanish language with basic survival skills in the language and culture, and the ability to undertake In-country Study in Latin America or Spain.

By the end of the subject, students would be expected to have achieved 'elementary proficiency' and be able to satisfy immediate communication needs required in basic social interaction, using expressions and phrases they have learnt. The program allows for the development of listening, speaking, reading and writing skills, and an understanding of the sociocultural contexts in which the language is used. Students gain, in particular, an awareness of the background of Hispanic countries. Students also develop strategies for predicting the meaning of new expressions and anticipating ways they might express new meanings.

Spanish 1 consists of 78 hours of classroom instruction. The approach adopted is communicative and provides students with many opportunities to interact and use the language in various social and cultural contexts. Audio-visual equipment and computers will be used to facilitate learning.

Spanish Unit 2

8cp; 2nd semester, 6hpw; prerequisite: Spanish Unit 1

Spanish 2 is the second in a series of four units designed to provide students who have no prior knowledge of the Spanish language with basic survival skills in the language and culture, and the ability to undertake In-country Study in Latin America or Spain.

By the end of the subject, students would be expected to have achieved 'minimum survival proficiency' in speaking, listening, reading and writing, and be able to satisfy immediate communication needs and minimum courtesy requirements in basic social interactions. Students will also develop an understanding of the sociocultural contexts in which the language is used and further communication strategies.

Spanish 2 consists of 78 hours of classroom instruction. The approach adopted is communicative and provides many opportunities for students to interact and use the language in various social and cultural contexts. Audio-visual equipment and computers will be used to facilitate learning.

Spanish Unit 3

8cp; 1st semester, 6hpw; prerequisite: Spanish Unit 2 or HSC Spanish

Spanish 3 is the third in a series of four units for students with no prior knowledge of the Spanish language, or the first in a series of four units for students who have successfully completed HSC-level Spanish, or its equivalent. It provides students with basic survival skills in the language and culture, and the ability to undertake In-country Study in Latin America or Spain.

By the end of the unit, students would be expected to have achieved a communicative competence in speaking, listening, reading and writing skills in order to be able to satisfy all 'survival' needs and limited social needs. They would also be expected to have developed an awareness of the various social and cultural contexts in which the language is used. In this unit, students also develop the ability to understand the general content of magazine and newspaper articles.

Spanish 3 consists of 78 hours of classroom instruction. The approach adopted is communicative and provides many opportunities for students to interact and use the language in various social and cultural contexts. Audio-visual equipment and computers will be used to facilitate learning.

Spanish Unit 4

8cp; 2nd semester, 6hpw; prerequisite: Spanish Unit 3

Spanish 4 is the fourth in a series of four units for students with no prior knowledge of the Spanish language, or the second in a series of four units for students who have successfully completed Spanish 3 and HSC-level Spanish, or its equivalent. It provides students with basic survival skills in the language and culture, and the ability to undertake In-country Study in Latin America or Spain.

By the end of the unit, students would be expected to have begun to develop the communication skills required to satisfy limited routine social and work demands. They would also be expected to have developed an awareness of the various social and

cultural contexts in which the language is used. In this subject, students learn to express opinions, discuss education, entertainment and travel, and develop the language skills and background knowledge required e.g. to find accommodation.

Spanish 4 consist of 78 hours of classroom instruction. The approach adopted is communicative and provides many opportunities for students to interact and use the language in various social and cultural contexts. Audiovisual equipment and computers will be used to facilitate learning.

Spanish Unit 5

8cp; 1st semester, 6hpw; prerequisite: Spanish Unit 4

Spanish 5 is the third in a series of four units designed to provide students who have successfully completed Spanish 4 and HSC-level Spanish, or its equivalent with the ability to consolidate and extend their knowledge during a period of In-country Study in Latin America or Spain.

By the end of the unit, students would be expected to have achieved communicative competence in speaking, listening, reading and writing, and to be able to satisfy routine social demands and limited work requirements. They would have developed an awareness of the various social and cultural contexts in which the language is used. Students learn to communicate in Spanish to compare lifestyles, university life and education, and practise interview techniques in preparation for In-country Study.

Spanish 5 consists of 78 hours of classroom instruction. The approach adopted is communicative and provides many opportunities for students to interact and use the language in various social and cultural contexts. There are discussions and debates on set topics. Audiovisual equipment and computers will be used to facilitate learning.

Spanish Unit 6

8cp; 2nd semester, 6hpw; prerequisite: Spanish Unit 5

Spanish 6 is the fourth in a series of four units designed to provide students who have successfully completed Spanish 5 and HSC-level Spanish, or its equivalent with the ability to consolidate and extend their knowledge during a period of In-country Study in Latin America or Spain.

By the end of the unit, students would be expected to be able to speak the language with sufficient accuracy, and to participate in limited formal and informal conversations on practical and social topics. Students would also be expected to be able to read and write with sufficient accuracy to meet a limited range of social and work needs. Language focuses on topics such as the economy, class and social stratification, gender roles, religion and beliefs, literature and the arts.

Spanish 6 consists of 78 hours of classroom instruction. The approach adopted is communicative and provides many opportunities for students to interact and use the language in various social and cultural contexts. There are discussions and debates on set topics. Audiovisual equipment and computers will be used to facilitate learning.

Spanish Unit 7

8cp; 1st semester, 6hpw; prerequisite: Spanish Unit 6

Spanish 7 is designed to provide students who have successfully completed Spanish 6, or its equivalent with the ability to consolidate and extend their knowledge during a period of In-country Study in Latin America or Spain.

By the end of the unit students would be expected to be able to communicate confidently in Spanish within a wide range of everyday situations, and to have further improved their comprehension skills by reading a wide variety of authentic materials in Spanish. Students would also be expected to have extended their knowledge of today's world-wide Hispanic society and culture and to have acquired the vocabulary and structures necessary to be able to discuss and write about the cultural context of texts with considerable accuracy.

The approach provides students with opportunities to further develop their vocabulary, fluency and accuracy as they use the language to respond to authentic texts and to discuss set topics. Students are required to read extensively during self-study periods in preparation for classroom presentation and discussion.

Spanish Unit 8

8cp; 2nd semester, 6hpw; prerequisite: Spanish Unit 7

Spanish 8 is designed to provide students who have successfully completed Spanish 7, or its equivalent, with a higher level of communicative and cultural competence and the ability to consolidate and extend their knowledge during a period of In-country Study in Latin America or Spain.

By the end of the unit, students would be expected to have further developed the linguistic and cultural awareness skills required to engage appropriately in a range of formal and informal discussions at a social and professional level on topics such as employment, job applications, academic presentations and university life, social welfare, human rights, leisure and sport, the media, family roles and relationships, etiquette, and immediate concerns such as arranging accommodation and banking.

The approach provides students with opportunities to further develop their vocabulary, fluency and accuracy in speaking and writing as they use the language in response to authentic texts such as newspaper, and magazine articles and television programs in Spanish. Students are required to read extensively during self-study periods in preparation for classroom presentations, debates and discussions.

971320, 972320, 973320, 974320
Thai

Thai is offered to UTS students through the language program offered jointly by the University of Sydney and Macquarie University. The program is designed to allow complete beginners in Thai to reach a survival level that will allow them to continue their studies in Thailand. If student numbers permit, classes will be available on UTS campuses.

976101
Chinese East Asia

8cp; 2nd semester, 4hpw

South China – Hong Kong, Taiwan and the Southern Chinese provinces of Fujian and Guangdong – is a region of global importance. It is a dynamo of economic growth for the East Asia region and one that has resulted from the economic integration of Hong Kong, Taiwan and South China, and which is now expanding to include East China. Yet its constituent parts have developed separately in different and often inimical political systems. As a result of all these factors, South China is likely to become a region of increasing importance, strategically and politically, as well as economically. This subject examines the development of Hong Kong, Taiwan and South China and their interaction. It is an introductory subject that requires no prior knowledge of the region or of any Chinese language.

976111
Contemporary China

8cp; 2nd semester, 4hpw

This subject examines the contours and dynamics of social, political and economic change in the People's Republic of China since the death of Mao Zedong and the start of the reform era. A central theme is the emerging relationship between state and society in a state socialist system in the process of change and reform. It is an introductory subject that requires no prior knowledge of the People's Republic of China or of any Chinese language.

976211
Contemporary Japan

8cp; 2nd semester, 4hpw

This subject provides an introduction to the dynamics of political, social and economic systems in modern Japan. Central themes are the causes and consequences of social change and continuity in the context of Japan's emergence as an economic superpower. In the process, it offers a general introduction to Japan's culture. This subject requires no prior knowledge of Japan or of Japanese.

976301
Contemporary South-East Asia

8cp; 2nd semester, 4hpw

This subject provides an introduction to the countries of Indonesia, Malaysia, Thailand and Vietnam. The themes of modernity and identity will be examined at a political–economic level and also at an individual level. Issues which will be explored include: migration patterns in the context of regional interrelationships; increasing urbanisation; legacies of colonialism; the commodification of culture and the growing impact of tourism; new creative forms in the visual, literary and performing arts; the beliefs about and behaviour of women in the region; and ways in which religion and social practice intersect.

976401
Contemporary Europe

8cp; 2nd semester, 4hpw

This subject is an introduction and an overview laying the groundwork for the study of contemporary Europe. It surveys present-day European Union institutions and sociopolitical developments and provides a comparative study of political and social developments in the countries of Western and Eastern Europe.

It aims to provide students with an understanding of the historical background of present-day Europe and enable them to identify major contemporary policy issues in this region of the world.

976501

Contemporary Latin America

8cp; 2nd semester, 4hpw

Latin America has been a crucible for social, political and economic change in the 19th and 20th centuries. Intense struggles for nationhood, democracy, economic modernisation and secularisation have all resonated in the countries of Latin America. During the middle of the 20th century, Latin America's primary concerns were focused on national self-determination, inward industrialisation and populist authoritarian efforts to legitimise elite rule. In the late 20th century, the emphasis shifted towards economic growth, internationalisation, and pressures to improve the capacity and accountability of governments. The subject aims to provide students with the historical background, cultural awareness and analytic skills to interpret everyday social, political and economic reality during their period of In-country Study. The subject requires no prior knowledge of Latin America or of Spanish.

977xxx

In-country Study 1

24cp; prerequisite: completion of relevant subjects appropriate to the student's International Studies major.

In-country Study subjects are only available to students doing the Bachelor of Arts in International Studies.

As part of the International Studies combined degrees, students spend two semesters of In-country Study at a university or institution of higher education overseas. The location is determined by the student's International Studies major.

In the International Studies Program, students focus on one of the following countries or majors: Argentina, Chile, China, France, Germany, Indonesia, Italy, Japan, Malaysia, Mexico, Russia, Spain and Thailand. The availability of the Russian major is currently being reviewed. There is also a Heritage Major that permits students with previous exposure to a language and culture to continue their study in countries such as Greece, Hong Kong, Korea, Poland, Taiwan and Vietnam.

Australia and the Asia–Pacific is only available as a major to international students. International students may access one of the other majors offered provided that the country they choose as their major is able to grant them a visa to study there. This would need to be determined prior to commencing subjects within the International Studies major. If a visa cannot be granted, then it will not be possible to undertake the chosen major.

978xxx

In-country Study 2

24cp; prerequisites: 977xxx In-country Study 1

As part of the International Studies combined degrees, students spend two semesters of In-country Study at a university or institution of higher education overseas. The location is determined by the student's International Studies major.

The following majors are available in the International Studies program: Argentina, Australia and the Asia–Pacific Region, Chile, China, France, Germany, Indonesia, Italy, Japan, Malaysia, Mexico, Russia, Spain and Thailand.

NUMERICAL LIST OF SUBJECTS

COMPUTING AND INFORMATION TECHNOLOGY

The following tables indicate the number and name of each subject, the semester or semesters in which it is offered, the credit-point value, and the prerequisites and corequisites (indicated by c). The letters A and S refer to the Autumn and Spring semesters respectively, and Y is used to indicate a year-long subject. All prerequisites are in terms of current undergraduate offerings. See the Subject Descriptions section for details of other possible prerequisites.

In the case of some elective subjects, no 'Semester offered' is shown. Elective offerings will vary according to demand.

Undergraduate

Core subjects in Bachelor of Computing

Subject number	Subject name	Semester offered	CP	Prerequisites
22615	Accounting Information Systems	A,S	6	Nil
31414	Information Systems	A,S	6	Nil
31417	Computing Practice	A,S	6	Nil
31424	Systems Modelling	A,S	6	Nil
31425	Principles of Software Development B	A,S	6	31508
31428	Quantitative Modelling	A,S	6	31508
31429	Procedural Programming	A,S	6	31508
31434	Database Design	A,S	6	31424
31454	Project Management and the Professional	A,S	6	31511
31464	Information Technology Planning and Design	A,S	6	31454
31507	Australian IT Industry	A,S	6	Nil
31508	Programming Fundamentals	A,S	6	Nil
31509	Computer Fundamentals	A,S	6	Nil
31510	Operating Systems	A,S	6	31509
31511	Systems Design	A,S	6	31424
31512	Networking 1	A,S	6	31509
31514	Computing Theory	A or S	6	Nil
31515	Introduction to Australian IT Industry	A,S	6	Nil
31931	Software Quality Assurance	A,S	6	31429

Core subjects in Bachelor of Information Technology

Subject number	Subject name	Semester offered	CP	Prerequisites
22615	Accounting Information Systems	A	6	Nil
24105	Marketing Principles	A	4	Nil
31414	Information Systems	A	6	Nil
31415	Principles of Software Development A	A	6	31718 c
31416	Computer Systems Architecture	A	6	Nil
31424	Systems Modelling	S	6	Nil
31434	Database Design	A	6	31771
31436	Systems Software and Networks	A	8	31416

Subject number	Subject name	Semester offered	CP	Prerequisites
31443	Distributed Databases and Client/Server Computing	S	6	31434
31444	Systems Design and Development	S	10	31434, 31436 c
31464	Information Technology Planning and Design	S	6	31756
31718	Contemporary Information Technology 1	A	6	Nil
31722	Commercial Programming	S	5	31414, 31415
31735	Information Systems and Organisation Development	A	6	Nil
31736	Business Processes and IT Strategy	S	6	Nil
31756	Project Management	A	5	31444
31769	Contemporary Information Technology 2	S	4	31718
31770	Industry Project 1	S	5	Nil
31771	Business Requirements Analysis	S	5	31414
31779	Applications of Information Technology 1	S	5	31414
31781	Business Systems Design	A	5	31424
31789	Applications of Information Technology 2	A	5	31779
31790	Industry Project 2	A	5	31770

Core subjects in Bachelor of Science in Computing Science

Subject number	Subject name	Semester offered	CP	Prerequisites
22615	Accounting Information Systems	A,S	6	Nil
31136	Preparation for and Review of IT Experience[2]	A	6	31137c
31137	IT Experience 1[2]	A	0	31414, 31415, 31416, 31417, 31424, 31429, 31434, 31436, 31136c
31138	Review of IT Experience[2]	S	6	31136, 31137, 31139c
31139	IT Experience 2[2]	S	0	31136, 31137, 31138c
31414	Information Systems	A,S	6	Nil
31415	Principles of Software Development A	A,S	6	31417 c
31416	Computer Systems Architecture	A,S[1]	6	Nil
31417	Computing Practice	A,S	6	Nil
31424	Systems Modelling	A,S	6	Nil
31425	Principles of Software Development B	A,S	6	31415
31428	Quantitative Modelling	A,S	6	Nil
31429	Procedural Programming	A,S	6	31415
31434	Database Design	A,S	6	31424
31436	Systems Software and Networks	A,S	8	31429, 31416
31444	Systems Design and Development	A,S	10	31434, 31436 c
31454	Project Management and the Professional	A,S	6	31444
31455	Software Development Case Study	Y	12	31444
31464	Information Technology Planning and Design	A,S	6	31428, 31436, 31444, 31454
31696	Industrial Training (F/T)[3]	A	0	31414, 31415, 31416, 31417, 31424, 31429, 31434, 31436
31697	Industrial Training (F/T)[3]	S	0	31696
31698	Industrial Training (P/T)[3]	A,S	0	31414, 31415, 31416, 31417, 31424, 31429, 31434, 31436
31699	Industrial Training (P/T)[3]	A,S	0	31698

[1]   31416 Computer Systems Architecture Spring semester is only available for repeat students.

[2]   Post-2000 subjects.

[3]   The subjects 31698 Industrial Training and 31699 Industrial Training are pre-2000 subjects and must be taken for two semesters.

Undergraduate electives

Subject number	Subject name	Semester offered	CP	Prerequisites
31140	Introduction to Computer Graphics	A	6	31425, 31429
31352	Project	A,S	6	31444
31443	Distributed Databases and Client/Server Computing	S	6	31434
31512	Networking 1	A,S	6	31509
31513	Networking 2	A or S	6	31436 or 31512
31601	Programming for Performance	A	6	31425, 31429
31603	3D Computer Animation	S	6	31140
31605	Computer Graphics Rendering Techniques	S	6	31140
31606	Virtual Communities	A	6	Nil
31735	Information Systems and Organisation Development	S	6	Nil
31736	Business Processes and IT Strategy	S	6	31424
31743	Machine Learning	S	6	31428
31744	Case-based Reasoning	S	6	31163
31745	Knowledge-based Systems	A	6	31743 or 31744
31746	Artificial Intelligence Applications	A	6	31743 or 31744
31748	Programming on the Internet	A,S	6	31436
31749	Internet Commerce	A,S	6	Nil
31750	Intelligent Agents in Java	A	6	31748
31777	Human–Computer Interaction	S	6	31444
31778	Resources Management for IT Professionals	S	6	Nil
31860	Object-oriented Programming and C++	S	6	31424, 31429
31876	Operating Systems Facilities	A	6	31436
31902	Auditing the Computer	S	6	22615
31904	Systems Programming	A	6	31429
31916	Cognitive Modelling	A	6	Nil
31917	Commercial Programming in Cobol	S	6	31429
31919	Distributed Software Programming	S	6	31436, 31904
31921	Objectbases	A	6	31434
31922	Object-oriented Methodologies	A	6	31424
31925	Smalltalk	S	6	31415, 31424
31927	Applications Development with Visual Basic	A	6	31414, 31415 or 31429, 31424c or 31434c
31928	Applications Development with Delphi	S	6	31414, 31415 or 31429, 31424c or 31434c
31931	Software Quality Assurance	S	6	31424
31950	Networked Enterprise Design	S	6	Nil

Postgraduate

Core subjects in Graduate Diploma in Information Technology

Subject number	Subject name	Semester offered	CP	Prerequisites
31414	Information Systems	A,S	6	Nil
31415	Principles of Software Development A	A,S	6	Nil
31424	Systems Modelling	A,S	6	Nil
31429	Procedural Programming	A,S	6	31508
31434	Database Design	A,S	6	31424
31508	Programming Fundamentals	A,S	6	Nil
31509	Computer Fundamentals	A,S	6	Nil
31512	Networking 1	A,S	6	31509

Note: Students may select any elective subjects for which they have the prerequisites, with the exception of Project, from the list of undergraduate electives.

Core subjects in Master of Business in Information Technology Management

Subject number	Subject name	Semester offered	CP	Prerequisites
21751	Management Research Methods	A	6	GradCertInfTechM
21788	Effective People Management	A	6	Nil
21789	Contemporary Management Practice	S	6	Nil
21806	Managing Organisational Change	A	6	Nil
21808	Strategic Business Management	S	6	GradCertInfTechM, 21806
22746	Managerial Accounting[1]		6	Nil
22747	Accounting for Managerial Decisions[1]		6	Nil
24704	Managing Client Relations	S	6	Nil
25742	Financial Management[1]		6	Nil
32601	Advanced Project Management	A	6	Nil
32604	Systems Integration	S	6	32601
32702	Contemporary Telecommunications	S	6	Nil
32703	Information Technology Strategy	S	6	Nil
32704	Strategic IT Contract Management	S	6	GradCertInfTechM
32806	Project A	A,S	6	GradDipInfTechM, 21751c
32812	Project B	A,S	6	32806, 21751
32930	Information Technology Management Research Methods	A,S	6	to be undertaken in final year of study
32933	Project A1	A,S	6	32930
32933	Project B1	A,S	6	32932
32934	Project B2	A,S	6	32932

[1]   There is no semester information available for these subjects.

Core subjects in Master of Interactive Multimedia

Subject number	Subject name	Semester offered	CP	Prerequisites
31429	Procedural Programming	A,S	6	31415
31436	Systems Software and Networks	A,S	8	31429, 31425, 31416
31513	Networking 2		6	31516
31516	Networking Fundamentals	A,S	6	Nil
31876	Operating Systems Facilities	A	6	31436
31904	Systems Programming	A	6	31429
31927	Applications Development with Visual Basic	A,S	6	31414 and/or 31415 or 31429

Subject number	Subject name	Semester offered	CP	Prerequisites
32106	Object-oriented Process	A	6	Nil
32307	Operating Systems	S	6	Nil
32501	Computer Graphics	A	6	Nil
32516	Internet Programming	A,S	6	Nil
32522	C for Systems Programmers	A	6	Nil
49031	Information Structures, Perception and User Interface Design		6	
49241	Hypermedia Technologies		6	
49242	Mono Media Technologies		6	
49243	Design of Hypermedia Information Systems		6	
50457	Theories of the Visual		8	
51007	Media Studies		4	
52272	Sound, Music, Noise		8	
52274	Sound Studies		8	
54101	Sound and Image		6	
54110	Media, Culture and Society		6	
54116	Audiovisual Media Production		6	
54150	Computers and Print Production		4	
54151	Computers and Audiovisual Production		4	
54153	Video Basic		4	
54294	Sound Design		8	
54299	NetDesign		8	
55902	Information Behaviour		6	
55903	Information Production and Presentation		6	
55906	Organisation of Information		6	
55907	Information Retrieval		6	
55910	User Documentation 1		6	
55911	User Documentation 2		6	
81021	Communication Technology		4	
81024	Computer Graphics 1		4	
81030	3D Computer Animation 2		4	
81923	Introduction to Design Computing		4	
81925	3D Computer Animation 1		4	
82009	Human Factors and Design		4	
82016	Graphic Visualisation		4	
82017	2D and 3D Communication		4	
82915	Photography for Designers		4	
95560	Multimedia Industry and Process		8	
95561	Multimedia Products and Technology		8	
95562	Multimedia Project		24	GradDip in Multimedia

Core subjects in Master of Science in Computing

Subject number	Subject name	Semester offered	CP	Prerequisites
32106	Object-oriented Process	A	6	32536
32107	Formal Reasoning for Software Development	A	6	Nil
32108	Applications of Artificial Intelligence	S	6	Nil
32204	Advanced Data Management	A	6	Nil
32208	Information Processing Strategy	S	6	Nil

Subject number	Subject name	Semester offered	CP	Prerequisites
32307	Operating Systems	Unknown	6	Nil
32501	Computer Graphics	A	6	Nil
32509	Human–Computer Interaction in Information Systems	S	6	Nil
32510	Principles of Object-oriented Programming in C++	S	6	32106
32511	Principles of Object-oriented Programming in Smalltalk	S	6	32106
32513	Advanced Machine Learning	S	6	Nil
32516	Internet Programming	A&S	6	Nil
32517	Commerce on the Internet	A&S	6	Nil
32520	UNIX Systems Administration	A	6	by application
32521	Internetworking	A	6	by application
32523	Operating Systems for Internetworking	A	6	by application
32524	LANs and Routing	S	6	by application
32525	Distributed Software Programming	S	6	by application
32527	Internetwork Design	S	6	by application
32528	Network Management	S	6	by application
32530	Building Intelligent Agents	A	6	Nil
32531	Global Information Systems	A	6	Nil
32532	Conducting Business Electronically	S	6	Nil
32533	Networking Communities	A	6	Nil
32534	Knowledge Management	S	6	Nil
32535	Databases in Distributed Environments	S	6	Nil
32536	Object-oriented Modelling	A	6	Nil
32537	Enterprise Wide Software Systems	S	6	Nil
32541	Project Management	A&S	6	Nil
32542	Advanced Cognitive Modelling	A	6	Nil
32543	Advanced 3D Computer Animation	S	6	32501
32544	Advanced Image Synthesis Techniques	S	6	32501
32545	Multi-agent Systems	S	6	Nil
32546	Business Process Engineering	A	6	Nil
32547	UNIX Systems Programming	Unknown	6	by application
32548	Network Security	S	6	by application
32601	Advanced Project Management	A	6	by application
32604	Systems Integration	S	6	32601
32702	Contemporary Telecommunications	S	6	Nil
32704	Strategic IT Contract Management	S	6	by application
32910	Project 1	all	6	Nil
32911	Project 2	all	6	Nil
32931	Information Technology Research Methods	A,S	6	to be undertaken in final year of study
32932	Project A1	A,S	6	32930
32933	Project B1	A,S	6	32932
32934	Project B2	A,S	6	32932
95560	Multimedia Industry and Process	A&S	8	by application
95561	Multimedia Products and Technology	A&S	8	by application

Note: Subject descriptions should be checked for presumed knowledge. Some subjects run in alternate years. Please check Faculty timetables on the website for up-to-date information.

Core subjects in Master of Science in Internetworking

Subject number	Subject name	Semester offered	CP	Prerequisites
31904	Systems Programming	A	6	31429
32516	Internet Programming	A,S	6	Nil
32518	Internetworking Research	A	6	GradDip in Internetworking
32519	Internetworking Project (18cp)	A&S	18	32518c
32520	UNIX Systems Administration	A	6	Nil
32521	Internetworking	A	6	32524
32522	C for Systems Programmers	A	6	Nil
32523	Operating Systems for Internetworking	A	6	Nil
32524	LANs and Routing	S	6	32523
32525	Distributed Software Programming	S	6	32547 or 32522
32527	Internetwork Design	S	6	32524
32528	Network Management	S	6	32524
32529	Internetworking Project (12cp)	A&S	12	32518
32547	UNIX Systems Programming	–	6	must be able to program in C
32548	Network Security	A	6	to be undertaken in final year of study
32549	Advanced Internet Programming	A,S	6	Nil
32931	Information Technology Research Methods	A,S	6	to be undertaken in final year of study
32932	Project A1	A,S	6	32930
32933	Project B1	A,S	6	32932
32934	Project B2	A,S	6	32932

MATHEMATICAL SCIENCES

The following tables indicates the number and name of each subject, the semester or semesters in which it is offered (these are subject to change), the credit-point value (cp), and the prerequisites and corequisites (indicated by c). The letters A and S refer to Autumn and Spring semesters, respectively, and Y is used for a year-long subject.

Undergraduate

Core subjects in Bachelor of Mathematics and Computing

Subject number	Subject name	Semester offered	CP	Prerequisites
31415	Principles of Software Development A	A,S	6	31417c
31416	Computer Systems Architecture	A,S	6	Nil
31417	Computing Practice	A,S	6	Nil
31424	Systems Modelling	S	6	Nil
31425	Principles of Software Development B	A,S	6	31415
31429	Procedural Programming	A,S	6	31415, 31425c
31434	Database Design	A	6	31424
31436	Systems Software and Networks	A,S	8	31416, 31425, 31429
31455	Software Development Case Study	Y	12	31436, 35290
35101	Mathematics 1	A,S	6	Nil
35102	Mathematics 2	A,S	6	35101, 35140c
35110	Discrete Mathematics (S)	A,S	4	Nil

Subject number	Subject name	Semester offered	CP	Prerequisites
35140	Operations Research Modelling	A,S	6	Nil
35151	Statistics 1	A,S	6	Nil
35212	Linear Algebra	A,S	6	35140
35231	Differential Equations	A,S	6	35102
35232	Advanced Calculus	S	6	35102
35241	Optimisation 1	A,S	6	35102, 35140
35252	Statistics 2	A,S	6	35102, 35151
35281	Numerical Analysis 1	A,S	6	35170, 35231c
35290	Group Project	S	6A	31436, 35241c, 35252c
35321	Analysis 1	A,S	6	35102
35322	Analysis 2	S	6	35321, 35212
35340	Operations Research Practice	S	6	35241, 35252
35342	Optimisation 2	A	6	35241
35353	Regression Analysis	A,S	6	35252
35356	Design and Analysis of Experiments	A	6	35212, 35252
35361	Probability and Stochastic Processes	A,S		35252
35363	Simulation Modelling	A,S	6	35170

Core subjects in Bachelor of Mathematics and Finance

Subject number	Subject name	Semester offered	CP	Prerequisites
22107	Accounting for Business	A,S	6	Nil
22207	Accounting Transactions and Business Decisions	A,S	6	tba
25115	Economics for Business	A,S	6	Nil
25300	Fundamentals of Business Finance	A,S	6	22107, 25115, 26133c
25410	Corporate Finanical Analysis	A,S	6	tba
25606	Financial Time Series	S	6	35102, 35353
25620	Derivative Securities	A,S	6	25906
25621	Financing Decisions and Capital Market Theory	A,S	6	25905
25905	Capital Budgeting and Valuation (Honours)	S	6	25308, 25314
25906	Investment Analysis (Honours)	A	6	25308, 25314
35101	Mathematics 1	A,S	6	Nil
35102	Mathematics 2	A,S	6	35101, 35140c
35111	Discrete Mathematics	A,S	6	Nil
35140	Operations Research Modelling	A,S	6	Nil
35151	Statistics 1	A,S	6	Nil
35170	Introduction to Computing	A,S	6	Nil
35212	Linear Algebra	A,S	6	35140
35231	Differential Equations	A,S	6	35102
35241	Optimisation 1	A,S	6	35102, 35140
35252	Statistics 2	A,S	6	35102, 35151
35281	Numerical Analysis 1	A,S	6	35170, 35231c
35321	Analysis 1	A,S	6	35102
35322	Analysis 2	S	6	35321, 35212
35353	Regression Analysis	A,S	6	35252
35361	Probability and Stochastic Processes	A,S	6	35252
79203	Business Law and Ethics	A,S	6	Nil

Core subjects in Bachelor of Mathematics and Finance (Honours)

Subject number	Subject name	Semester offered	CP	Prerequisites
25921	Theory of Financial Decision Making	A	6	By consent
25923	Derivative Security Pricing	S	6	By consent
25910	Thesis	Y	12	By consent
35438	Nonlinear Dynamical Systems	A	4	35231, 35321
35456	Nonlinear Statistical Models	S	4	35353
35466	Advanced Stochastic Processes	A	4	35322, 35361
35467	Time Series Analysis	A	4	35361
35486	Optimal Control 1	A	4	35231, 35241
35487	Optimal Control 2	S	4	35466, 35486

Core and major subjects in Bachelor of Science in Mathematics

Subject number	Subject name	Semester offered	CP	Prerequisites
33401	Introductory Mathematical Methods	A	6	Nil
35010	Foundation Mathematics	A,S	6	Nil
35100	Mathematical Practice	A	6	Nil
35101	Mathematics 1	A,S	6	Nil
35102	Mathematics 2	A,S	6	35101, 35140c
35106	Mathematics in Sport	A or S, Summer	6	Nil
35111	Discrete Mathematics	A,S	6	Nil
35140	Operations Research Modelling	A,S	6	Nil
35151	Statistics 1	A,S	6	Nil
35170	Introduction to Computing	A,S	6	Nil
35205	History of Mathematics	S	6	Nil
35212	Linear Algebra	A,S	6	35140
35231	Differential Equations	A,S	6	35102
35232	Advanced Calculus	S	6	35102
35241	Optimisation 1	A,S	6	35102, 35140
35252	Statistics 2	A,S	6	35102, 35151
35254	Health Statistics	A	6	35151
35281	Numerical Analysis 1	A,S	6	35170, 35231c
35292-6	Project	A,S	2-6	By arrangement
35313	Pure Mathematics 3A	A	6	35231, 35232
35314	Pure Mathematics 3B	S	6	35111
35321	Analysis 1	A,S	6	35102
35322	Analysis 2	S	6	35321, 35212
35333	Applied Mathematics 3A	A	6	35232, 35335c
35334	Applied Mathematics 3B	S	6	35333, 35335
35335	Mathematical Methods	A	6	35231
35340	Operations Research Practice	S	6	35241, 35252
35342	Optimisation 2	A	6	35241
35344	Network Optimisation	S	6	35241
35353	Regression Analysis	A,S	6	35252
35355	Quality Control	S	6	35252
35356	Design and Analysis of Experiments	A	6	35212, 35252
35361	Probability and Stochastic Processes	A,S	6	35252
35363	Simulation Modelling	A,S	6	35170

Subject number	Subject name	Semester offered	CP	Prerequisites
35382	Numerical Analysis 2	S	6	35281
35384	Financial Modelling	S	6	35102, 35151
35391	Seminar (Mathematics)	A or S	6	By arrangement
35392	Seminar (Operations Research)	A or S	6	By arrangement
35393	Seminar (Statistics)	A or S	6	By arrangement
35394	Seminar (Computing)	A or S	6	By arrangement

Core subjects in Bachelor of Science (Honours) in Mathematics

Subject number	Subject name	Semester offered	CP	Prerequisites
35418	Analytic Number Theory	A	4	35314, 35232
35419	Advanced Algebra	A	4	35314
35427	Functional Analysis	S	4	35322
35428	Convexity and Optimisation	A	4	35322
35436	Advanced Mathematical Methods	S	4	35334
35437	Partial Differential Equations	A	4	35335
35438	Nonlinear Dynamical Systems	A	4	35231, 35321
35443	Advanced Mathematical Programming	S	4	35342
35446	Scheduling Theory	S	4	35342, 35447
35447	Discrete Optimisation	A	4	35111, 35342
35448	Dynamic Optimisation	A	4	35241, 35361, 35447c
35456	Nonlinear Statistical Models	S	4	35353
35457	Multivariate Statistics	A	4	35353
35458	Loglinear Modelling	S	4	35353
35459	Linear Models and Experimental Design	S	4	35353, 35457, 35356
35466	Advanced Stochastic Processes	A	4	35322, 35361
35467	Time Series Analysis	A	4	35361
35469	Statistical Consulting	S	4	See subject description
35485	Advanced Financial Modelling	A	4	35340
35486	Optimal Control 1	A	4	35231, 35241
35487	Optimal Control 2	S	4	35466, 35486
35491	Honours Seminar A	A or S	4	By consent
35492	Honours Seminar B	A or S	4	By consent
35496	Thesis Seminar A	A	4	By consent
35497	Thesis Seminar B	S	4	By consent
35498	Thesis (Honours)	Y	16	By consent

All subjects in Mathematical Sciences

Subject number	Subject name	Semester offered	CP	Prerequisites
33401	Introductory Mathematical Methods	A	6	Nil
35010	Foundation Mathematics	A,S	6	Nil
35100	Mathematical Practice	A	6	Nil
35101	Mathematics 1	A,S	6	Nil
35102	Mathematics 2	A,S	6	35101, 35140c
35106	Mathematics in Sport	A or S, Summer	6	Nil
35110	Discrete Mathematics (S)	A,S	4	Nil
35111	Discrete Mathematics	A,S	6	Nil

Subject number	Subject name	Semester offered	CP	Prerequisites
35140	Operations Research Modelling	A,S	6	Nil
35151	Statistics 1	A,S	6	Nil
35170	Introduction to Computing	A,S	6	Nil
35205	History of Mathematics	S	6	Nil
35212	Linear Algebra	A,S	6	35140
35231	Differential Equations	A,S	6	35102
35232	Advanced Calculus	S	6	35102
35241	Optimisation 1	A,S	6	35102, 35140
35252	Statistics 2	A,S	6	35102, 35151
35254	Health Statistics	A	6	35151
35281	Numerical Analysis 1	A,S	6	35170, 35231c
35290	Group Project	S	6A	31436, 35241c, 35252c
35292-6	Project	A,S	2-6	By arrangement
35313	Pure Mathematics 3A	A	6	35231, 35232
35314	Pure Mathematics 3B	S	6	35111
35321	Analysis 1	A,S	6	35102
35322	Analysis 2	S	6	35321, 35212
35333	Applied Mathematics 3A	A	6	35232, 35335c
35334	Applied Mathematics 3B	S	6	35333, 35335
35335	Mathematical Methods	A	6	35231
35340	Operations Research Practice	S	6	35241, 35252
35342	Optimisation 2	A	6	35241
35344	Network Optimisation	S	6	35241
35353	Regression Analysis	A,S	6	35252
35355	Quality Control	S	6	35252
35356	Design and Analysis of Experiments	A	6	35212, 35252
35361	Probability and Stochastic Processes	A,S		35252
35363	Simulation Modelling	A,S	6	35170
35382	Numerical Analysis 2	S	6	35281
35384	Financial Modelling	S	6	35102, 35151
35391	Seminar (Mathematics)	A or S	6	By arrangement
35392	Seminar (Operations Research)	A or S	6	By arrangement
35393	Seminar (Statistics)	A or S	6	By arrangement
35394	Seminar (Computing)	A or S	6	By arrangement
35418	Analytic Number Theory	A	4	35314, 35232
35419	Advanced Algebra	A	4	35314
35427	Functional Analysis	S	4	35322
35428	Convexity and Optimisation	A	4	35322
35436	Advanced Mathematical Methods	S	4	35334
35437	Partial Differential Equations	A	4	35335
35438	Nonlinear Dynamical Systems	A	4	35231, 35321
35443	Advanced Mathematical Programming	S	4	35342
35446	Scheduling Theory	S	4	35342, 35447
35447	Discrete Optimisation	A	4	35111, 35342
35448	Dynamic Optimisation	A	4	35241, 35361, 35447c
35456	Nonlinear Statistical Models	S	4	35353
35457	Multivariate Statistics	A	4	35353
35458	Loglinear Modelling	S	4	35353
35459	Linear Models and Experimental Design	S	4	35353, 35457, 35356
35466	Advanced Stochastic Processes	A	4	35322, 35361

Subject number	Subject name	Semester offered	CP	Prerequisites
35467	Time Series Analysis	A	4	35361
35469	Statistical Consulting	S	4	See subject description
35485	Advanced Financial Modelling	A	4	35340
35486	Optimal Control 1	A	4	35231, 35241
35487	Optimal Control 2	S	4	35466, 35486
35491	Honours Seminar A	A or S	4	By consent
35492	Honours Seminar B	A or S	4	By consent
35496	Thesis Seminar A	A	4	By consent
35497	Thesis Seminar B	S	4	By consent
35498	Thesis (Honours)	Y	16	By consent
35542	Applied Mathematical Programming		6	By consent
35544	Network Modelling		6	By consent
35545	Further Methods in Operations Research	A	6	35151, 35342
35549	Case Studies in Management Science	S	6	35340, 35342, 35363
35563	Applied Simulation Modelling		6	By consent
35592-6	Project (Postgraduate)	A or S	4-12	By arrangement
35599	Report (Postgraduate)	Y	24	By consent

Postgraduate

All core subjects[1]

Subject number	Subject name	Semester offered	CP	Prerequisites
33401	Introductory Mathematical Methods	A	6	Nil
35102	Mathematics 2	A,S	6	35101, 35140c
35170	Introduction to Computing	A,S	6	Nil
35212	Linear Algebra	A,S	6	35140
35231	Differential Equations	A,S	6	35102
35232	Advanced Calculus	S	6	35102
35241	Optimisation 1	A,S	6	35102, 35140
35252	Statistics 2	A,S	6	35102, 35151
35281	Numerical Analysis 1	A,S	6	35170, 35231c
35314	Pure Mathematics 3B	S	6	35111
35321	Analysis 1	A,S	6	35102
35322	Analysis 2	S	6	35321, 35212
35340	Operations Research Practice	S	6	35241, 35252
35342	Optimisation 2	A	6	35241
35353	Regression Analysis	A,S	6	35252
35355	Quality Control	S	6	35252
35356	Design and Analysis of Experiments	A	6	35212, 35252
35361	Probability and Stochastic Processes	A,S		35252
35363	Simulation Modelling	A,S	6	35170
35382	Numerical Analysis 2	S	6	35281
35384	Financial Modelling	S	6	35102, 35151
35467	Time Series Analysis	A	4	35361
35485	Advanced Financial Modelling	A	4	35340
35545	Further Methods in Operations Research	A	6	35151, 35342
35549	Case Studies in Management Science	S	6	35340, 35342, 35363

[1] For elective choice, refer to undergraduate course lists.

GENERAL

Aboriginal Studies subjects

Subject number	Subject name	Semester offered	CP	Prerequisites
015110	Aboriginal Cultures and Philosophies		8	Nil
015395	Aboriginal Social and Political History		8	Nil
015168	The Politics of Aboriginal History		8	015110

Note: These subjects comprise the Aboriginal Studies sub-major, but they may also be taken as electives.

International Studies subjects

Subject number	Subject name	Semester offered	CP	Prerequisites
50140	Comparative Social Change	A, S	8	Nil
97x111	Chinese Language and Culture	A or S	4x8	See subject descriptions
97x211	Japanese Language and Culture	A or S	4x8	See subject descriptions
97x311	Indonesian Language and Culture	A or S	4x8	See subject descriptions
97x320	Thai		4x8	See subject descriptions
97x331	Malaysian Language and Culture	A or S	4x8	See subject descriptions
97x411	French Language and Culture		4x8	See subject descriptions
97x421	German Language and Culture		4x8	See subject descriptions
97x431	Italian Language and Culture		4x8	See subject descriptions
97x501	Spanish Language and Culture	A or S	4x8	See subject descriptions
97x734	Russian		4x8	See subject descriptions
976101	Chinese East Asia	S	8	Nil
976111	Contemporary China	S	8	Nil
976211	Contemporary Japan	S	8	Nil
976301	Contemporary South-East Asia	S	8	Nil
976401	Contemporary Europe	S	8	Nil
976501	Contemporary Latin America	S	8	Nil
977xxx	In-country Study 1		24	See subject descriptions
978xxx	In-country Study 2		24	See subject descriptions

Note: In the case of Language and Culture subjects, x indicates one of four levels of study. Details of all International Studies subjects can be found in the Subject Descriptions section in this handbook.

ALPHABETICAL LIST OF SUBJECTS

Explanatory notes

1 BInfTech only
2 GradDipInfTech and Graduate Certificates only
3 Elective subject
4 Honours only
5 BSc only
6 BComp only
7 BSc BA subject
8 Not for BSc or BInfTech

Advanced Algebra	35419
Advanced Calculus	35232
Advanced Cognitive Modelling	32542
Advanced Data Management	32204
Advanced Financial Modelling	35485
Advanced Image Synthesis Techniques	32544
Advanced Internet Programming	32549
Advanced Machine Learning	32513
Advanced Mathematical Methods	35436
Advanced Mathematical Programming	35443
Advanced Project Management	32601
Advanced Stochastic Processes	35466
Advanced 3D Computer Animation	32543
Analysis 1	35321
Analysis 2	35322
Analytic Number Theory	35418
Applications Development with Delphi[3]	31928
Applications Development with Visual Basic[4]	31927
Applications of Artificial Intelligence	32108
Applications of Information Technology 1[1]	31779
Applications of Information Technology 2[1]	31789
Applied Mathematical Programming	35542
Applied Mathematics 3A	35333
Applied Mathematics 3B	35334
Applied Simulation Modelling	35563
Artificial Intelligence Applications[3]	31746
Auditing the Computer[3]	31902
Australian IT Industry[6]	31507
Building Intelligent Agents	32530
Business Process Engineering	32546
Business Processes and IT Strategy[1,3]	31736
Business Requirements Analysis[1]	31771
Business Systems Design[1]	31781
C for Systems Programmers	32522
Case-based Reasoning[3]	31744
Case Studies in Management Science	35549
Cognitive Modelling[3]	31916
Commerce on the Internet	32517
Commercial Programming[1]	31722
Commercial Programming in Cobol[3]	31917
Computer Fundamentals[8]	31509
Computer Graphics	32501
Computer Graphics Rendering Techniques[3]	31605
Computer Systems Architecture[1,5]	31416

Computing Practice	31417
Computing Theory[6]	31514
Conducting Business Electronically	32532
Contemporary Information Technology 1[1]	31718
Contemporary Information Technology 2[1]	31769
Contemporary Telecommunications	32702
Convexity and Optimisation	35428
Database	32606
Database Design	31434
Databases in Distributed Environments	32535
Design and Analysis of Experiments	35356
Differential Equations	35231
Discrete Mathematics	35111
Discrete Mathematics (S)	35110
Discrete Optimisation	35447
Distributed Databases and Client/Server Computing[1,3]	31443
Distributed Software Programming	32525
Distributed Software Programming[3]	31919
Dynamic Optimisation	35448
Enterprise Wide Software Systems	32537
Financial Modelling	35384
Foundation Mathematics	35010
Functional Analysis	35427
Further Methods in Operations Research	35545
Global Information Systems	32531
Group Project	35290
Health Statistics	35254
History of Mathematics	35205
Honours Seminar A	35491
Honours Seminar B	35492
Human–Computer Interaction[3]	31777
Human–Computer Interaction in Information Systems	32509
Industrial Training (F/T)[5]	31696
Industrial Training (F/T)[5]	31697
Industrial Training (P/T)[5]	31698
Industrial Training (P/T)[5]	31699
Industry Project 1[1]	31770
Industry Project 2[1]	31790
Information Processing Strategy	32208
Information Systems	31414
Information Systems and Organisation Development	31735
Information Technology Management Research Methods	32930
Information Technology Planning and Design[1,5,6]	31464
Information Technology Research Methods	32931
Information Technology Strategy	32703
Intelligent Agents in Java[3]	31750
Internet Commerce[3]	31749
Internet Programming	32516
Internetwork Design	32527

SUBJECTS OFFERED BY OTHER FACULTIES

Aboriginal Cultures and Philosophies[3]	015110
Aboriginal Social and Political History[3]	015395
Accounting for Business	22107
Accounting for Business Combinations	22320
Accounting for Insolvency	22610
Accounting for Managerial Decisions	22747
Accounting for Small Business 1	22566
Accounting for Small Business 2	22567
Accounting Information Systems	22615
Accounting Standards and Regulations	22420
Accounting Transactions and Business Decisions	22207
Administrative Law	70617
Advertising Practice	59330
Advertising and Promotions Management	24210
Advertising Strategies	59333
Atoms, Photons and Orbits (Physics 3)	68311
Business Law and Ethics	79203
Business Marketing	24205
Capital Budgeting and Valuation (Honours)	25905
Chinese East Asia[7]	976101
Chinese Language and Culture[7]	97x111
Comparative Social Change[7]	50140
Consumer Behaviour	24202
Contemporary China[7]	976111
Contemporary Europe[7]	976401
Contemporary Japan[7]	976211
Contemporary Latin America[7]	976501
Contemporary Management Practices	21789
Contemporary South-East Asia[7]	976301
Corporate Financial Analysis	25410
Corporate Law	70417
Cost Management Systems	22321
Criminal Law	70217
Derivative Securities	25620
Derivative Security Pricing	25923
Economics for Business	25115
Effective People Management	21788
Electronics	68314
Electronics and Interfacing	68514
Electrotechnology and Data Analysis	68312
Equity and Trusts	70516
Essay Writing	59316
Federal Constitutional Law	70616
Financial Management	25742
Financial Time Series	25606
Financing Decisions and Capital Market Theory	25621
Foundations of Physics	68101
French Language and Culture[7]	97x411
Fundamentals of Business Finance	25300
German Language and Culture[7]	97x421
Government Accounting	22206
In-country Study 1[7]	977xxx
In-country Study 2[7]	978xxx

Indonesian Language and Culture[7]	97x311
Industry Economics	25303
International Accounting	22240
International Business	21128
International Employment Relations	21306
International Management	21591
International Marketing	24220
Introductory Marketing Research	24309
Investment Analysis (Honours)	25906
Italian Language and Culture[7]	97x431
Japanese Language and Culture[7]	97x211
Law of Contract	70211
Law of Evidence	71216
Law of Tort	70311
Legal Process and History	70113
Legal Research	70105
Malaysian Language and Culture[7]	97x331
Management Decisions and Control	22421
Management Research Methods	21751
Managerial Accounting	22746
Managing Client Relations	24704
Managing Organisational Change	21806
Managing People and Organisations	21129
Managing the International Organisation	21531
Marketing Foundations	24108
Macroeconomic Theory and Policy	25309
Microeconomic Theory and Policy	25210
Multimedia Industry and Process	95560
Multimedia Products and Technology	95561
Multimedia Project	95562
Personal Property	70318
Physics in Action (Physics 2)	68201
Politics of Aboriginal History, The[3]	015168
Practice and Procedure	71005
Real Property	70317
Remedies	71116
Report Writing	59317
Russian[7]	97x734
Spanish Language and Culture[7]	97x501
Strategic Business Management	21808
Strategic Human Resource Management	21407
Thai[7]	97x320
Theory of Financial Decision Making	25921
Thesis	25910
Total Quality and Productivity Management	21807
Vibrations, Quanta and Nucleons (Physics 4)	68411

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K S Kang, BSc (Don-A University, Korea), GradDip Applied Computing (Tas), GradDipIT (QUT), MIT (Swinburne)

C Lueg, BA, MS (Dortmund), PhD (Zurich)

S Simoff, BScEE (Hons), MScEE, PhD (Moscow Power Engineering Institute)

B Wong, BSc (Syd), MCom (UNSW), CQA, MACS, AIMM, MQSA, JP

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E Platen, MSc, PhD (Dresden)

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G J McLelland, BSc, PhD (Syd)

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B J Moore, MSc (Syd), PhD (Cantab)

P Petocz, BA (Hons), PhD (UNSW), DipEd (Tech) (SCAE)

G H Smith, MSc (Rand), PhD (UNSW), DipGeoscience (Macq)

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J M Hogg, BSc (Syd), MSc (OR) (UNSW), MASOR

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P A Wright, BA (Macq), MStats, MEngSc (UNSW)

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MSc (Reading), PhD (Leic), ARCS, FIMA
J M Hughes, BSc (Syd), MIEEE, FACS, MBCS

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MACS, MASOR
C B Jay, BSc (Hons) (Syd), PhD (McG)

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J Feuerlicht, BSc, DIC, PhD (Lond), MACS
R Rist, BSc (Psych) (Hons), BSc (ComSc)
(UNSW), GradDip (CCAE), MSc, MPhil,
PhD (Yale), MACS
K G Suffern, BSc (Hons), MSc (Monash), MSc
(Corn), PhD (Syd), MACS
D Zowghi, BSc (Hons) (Essex), MSc, PhD
(Macq)

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(UTS)
B R E Lederer, BSc (Hons), MEngSc (UNSW),
PhD (Syd), MACS

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H Lu, BE, MEng (Harbin, China)

Research Scientist
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A Rassoulpour, MCompSc (KTH, Sweden),
MSc (UTS)

CRC for Enterprise Distributed Systems Technology (DSTC)

Director, Sydney Operations
K H Dinh, BE (Hons) (Auck), PhD (UNSW)

Systems Administrator
V Witana, BE (Telecommunications and
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Moratuwa, Sri Lanka)

Researcher
Dr T Mansfield, BA (Hons), PhD (Q'ld)

INDEX

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email info.office@uts.ed.au

www.uts.edu.au

City campus

Broadway

- Building 1 (Tower Building)
  1 Broadway, Ultimo
- Building 2
  1 Broadway, Ultimo
- Building 3 (Bon Marche Building)
  Cnr Harris Sreet and Broadway, Ultimo
- Building 4
  Cnr Thomas and Harris Streets, Ultimo
- Building 6 (Peter Johnson Building)
  702–730 Harris Street, Ultimo
- Broadway Terraces
  9, 11 and 13 Broadway, Ultimo
- Magic Pudding Childcare Centre,
  Thomas Street, Ultimo

Haymarket

- Building 5
  Corner Quay Street and Ultimo Road,
  Haymarket, Sydney

Blackfriars

- Corner Blackfriars and Buckland Streets,
  Chippendale
- Blackfriars Childrens Centre
  Buckland Street, Chippendale

Smail Street

- 3 Smail Street, Ultimo

Quay Street

- 10 Quay Street, Haymarket, Sydney
- Prince Centre
  8 Quay Street, Haymarket, Sydney

Wembley House

- 839–847 George Street, Sydney

Harris Street

- 645 Harris Street, Ultimo

Student housing

- Bulga Ngurra
  23–27 Mountain Street, Ultimo
- Geegal
  82–84 Ivy Street, Chippendale

Australian Technology Park

- Corner Garden, Cornwallis and
  Boundary Streets
  Eveleigh NSW 1430

Kuring-gai campus

- Eton Rd, Lindfield
  (PO Box 222, Lindfield NSW 2070)

St Leonards campus

- Dunbar Building
  Corner Pacific Highway and
  Westbourne Street, Gore Hill
- Clinical Studies Building, Centenary
  Lecture Theatre and West Wing
  Reserve Road, Royal North Shore Hospital
- Gore Hill Research Laboratories
  Royal North Shore Hospital

Yarrawood conference and research centre

- 689 Springwood Road
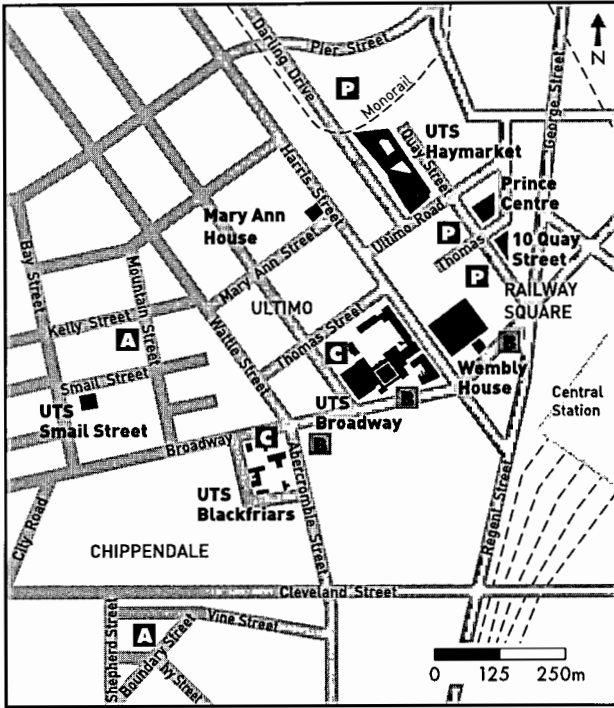 Yarramundi NSW 2753

Stroud field station

- 2605 The Bucketts Way
  Booral NSW 2425
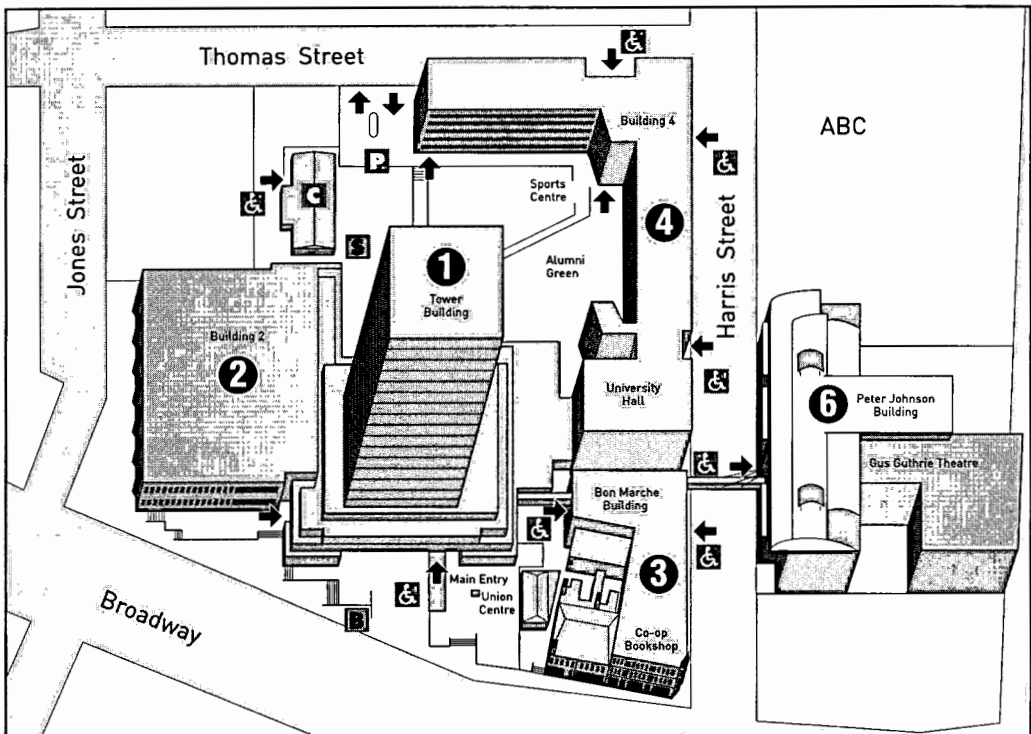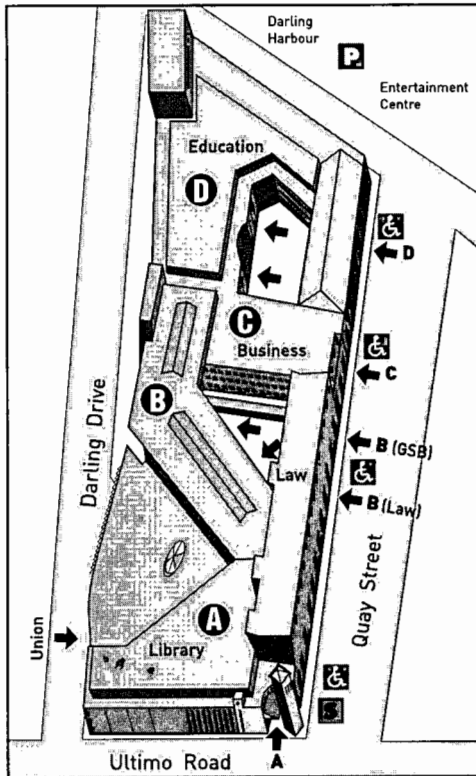
MAPS

Sydney regional map
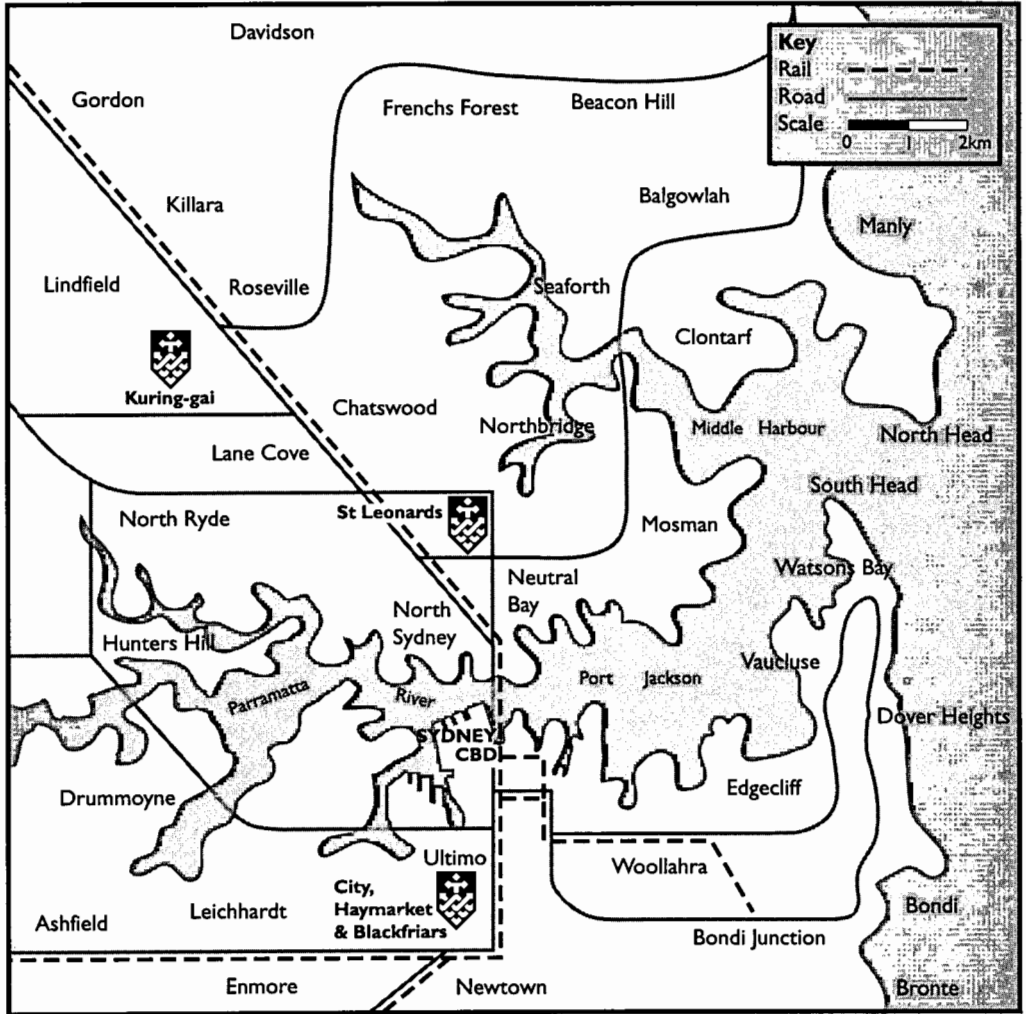
City campus

KEY
- Entry / Exit
- Disabled access
- Main bus stop
- UTS shuttle bus
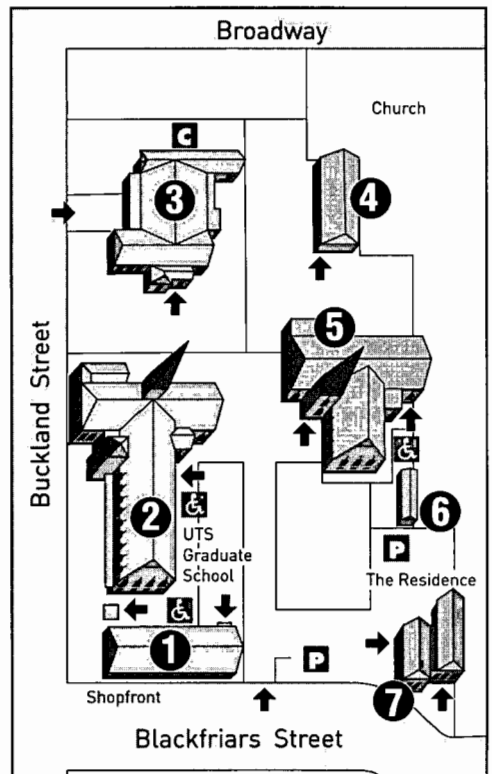- Parking
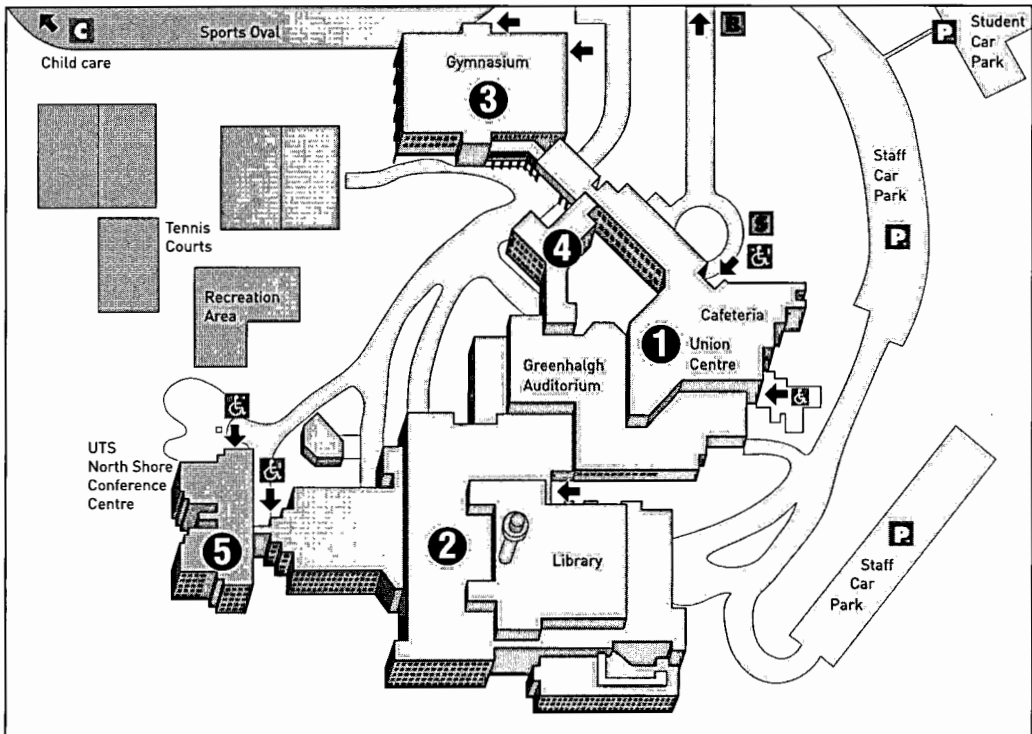- Building numbers
- Child care

Broadway

Haymarket

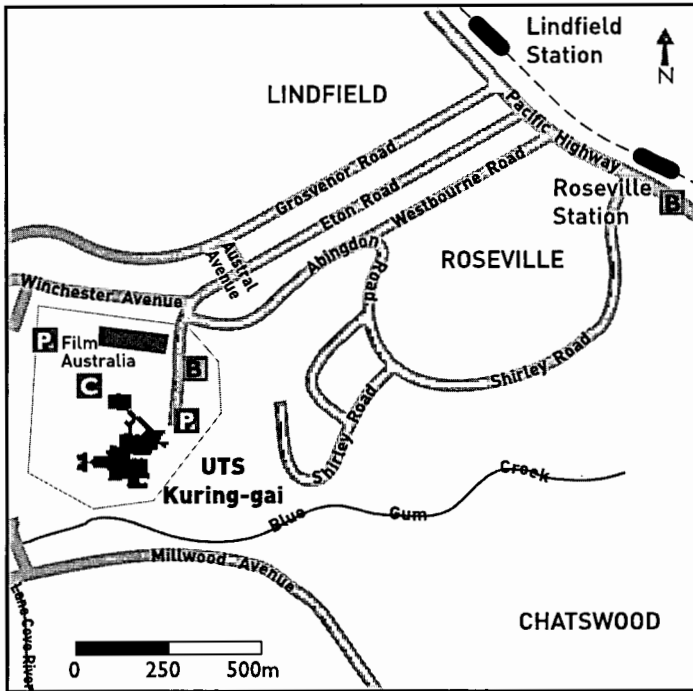## Blackfriars

KEY

→ Entry / Exit
  Disabled access
B Main bus stop
S UTS shuttle bus
P Parking
1 Building numbers
C Child care

Kuring-gai campus

St Leonards campus

KEY
→ Entry / Exit
♿ Disabled access
🚏 Main bus stop
Ⓢ UTS shuttle bus
🅿 Parking
❶ Building numbers
© Child care

❶ Dunbar Building
❷ Research Labs
❸ West Wing
❹ Centenary Lecture Theatre
❺ Clinical Studies
🚏 Bus Stop

$11