The Faculty of Informatics remains UOW’s fastest-growing Faculty, incorporating engineering, computing, information technology and mathematical methodologies within four schools:

- School of Information Systems and Technology (SISAT)
- School of Computer Science and Software Engineering (SCSSE)
- School of Electrical, Computer and Telecommunications Engineering (SECTE)
- School of Mathematics and Applied Statistics (SMAS)

The four schools enjoy a synergistic research and teaching relationship, and our academics include world leaders in the fields of wireless technology, computer and network security, software design, statistics and cryptography. They possess a wealth of industry experience, and influence technological trends via direct input into the bodies that are responsible for IEEE and computing international standards. This strong industry collaboration is fed back into course design to ensure our courses are workplace focused and keep pace with changes within specific ICT sectors and the broader demands of the marketplace, especially in relation to the internet and the globalisation of telecommunications.

Informatics courses have a high degree of flexibility, allowing you to tailor them to your personal interests. The Faculty is one of the largest sites of ICT research in the southern hemisphere, and has strong industrial links with major international companies and collaborative research and development projects with partners including Nortel Networks, Hawker de Havilland, Motorola, Telstra, Bluescope, Boeing, Apple, Sun Microsystems, Accenture and Andrew Corporation and Integral Energy. The Faculty also consults with state, national and international governments and houses numerous research centres, including the Information Communication and Research Institute (ICTR), which has been declared a State Centre of Expertise in Telecommunications by the New South Wales Government.

The Faculty supports strong research links with over 30 leading international institutions, including Huazhong University of Science and Technology (China), Tsinghua University, Shanghai Jiaotong University, Royal Holloway (University of London), Manchester University, University of Florida, University of Columbia, Institute for Infocom Research (Singapore) and Tokyo Institute of Technology. The Faculty also has offshore collaborations with key institutions in the region including Singapore Institute of Management (SIM) and Zhengzhou University in Henan Province, China. Active Faculty Alumni networks exist in Singapore, Hong Kong, Malaysia and Dubai.

Two major recruiting fairs are held each year, where leading firms come directly to the campus to interview students. The Faculty is a preferred source of employees for Telstra and Motorola, with major international and Australian firms recruiting graduates straight from the University. Many smaller firms from the local area and from Sydney also come to UOW to source employees.

The Faculty of Informatics has a dedicated International Office that is responsible for international ICT students, acting as an advocacy point, which includes looking after academic concerns, enrolment and orientation, personal counselling and assistance with letters to professional accreditation bodies.

For more information on the Faculty, please visit: www.uow.edu.au/informatics

For information on specific courses and subjects in the Faculty of Informatics, please visit: www.uow.edu.au/handbook/current/pg/informatics
Research Opportunities

SCHOOL OF COMPUTER SCIENCE AND SOFTWARE ENGINEERING

SOFTWARE ENGINEERING

MULTIMEDIA INFORMATION PROCESSING

INTELLIGENT SYSTEMS

SCHOOL OF ELECTRICAL, COMPUTER AND TELECOMMUNICATIONS ENGINEERING

VISUAL SIGNAL AND INFORMATION PROCESSING

Applications: High-resolution through-the-wall radar imaging, biomedical and multimedia signal processing, object detection and tracking for visual surveillance, image enhancement and segmentation, image restoration, image and video quality assessment, perceptual filtering, watermarking, biometric identification, and smart vision sensors.

AUDIO SIGNAL PROCESSING AND MULTIMEDIA DELIVERY
- Beamforming with acoustic vector sensors for audio user interfaces. A successful APA applicant will be offered an additional top-up scholarship.
- Perceptual evaluation of multimedia experiences.
- Spatial and 3D audio signal processing.
- XML based Multimedia delivery and processing.

SIGNAL PROCESSING IN OPTO-ELECTRONIC SYSTEMS FOR SENSING AND MEASUREMENT
- 3D profile measurement using structured light projection.
- 3D human face acquisition and recognition.
- Sensing and measurement based on optical feedback self-mixing interferometry.
- Blind source separation and its applications.

TELECOMMUNICATIONS
- Multimedia communications: multimedia streaming, immersive multimedia environments, and peer-to-peer communication and delivery.
- Wireless communications: space-time signal processing, diversity combining, propagation of microwaves, modulation and coding.
- Ultra-wide band communication systems.

INTELLIGENT MECHATRONICS
Acquisition, modelling and distribution of human synergistic reactive control and manipulation skills using inertia sensors and wireless IMU; distributed control through wireless ad-hoc control networks, haptic and virtual modelling of constrained motion manipulation in medicine (Cochlear implantation), performing arts (practice carillon), and manufacturing (assembly); multi-objective intelligent control for blimp, position location using wireless protocols, Tele-presence and tele-operation over the Internet, medical image processing for diagnosis, content based retrieval, image coding.

POWER ENGINEERING
Power quality surveying; data analysis and reporting methodologies; Harmonics, flicker and voltage unbalance management in distribution and transmission systems; distribution system reliability improvement through novel methods; photo voltaic inverter systems and distribution systems; power quality data mining; equipment immunity to PQ disturbances; voltage sag characteristics and limits for distribution systems; distributed generation; distribution system automation and protection.

SCHOOL OF INFORMATION SYSTEMS AND TECHNOLOGY

BUSINESS SERVICES
Interdisciplinary service research that includes supply chain management, operations management, customer relationship management, marketing, information technology, RFID and location based services.

SCHOOL OF MATHEMATICS AND APPLIED STATISTICS

PURE MATHEMATICS
Operator theory and operator algebra, representation theory, topological groups and harmonic analysis, calculus of variations and partial differential equations, geometric analysis, combinatorial logic, lambda calculus and type theory.

ENGINEERING AND APPLIED MATHEMATICS
- Nanotechnology: mathematical and mechanical modelling of nano-particulate flow with applications in biology and medicine.
- Renewable Energy: using ocean waves to generate electricity and/or desalinating sea water.
- Nonlinear Waves: solitary wave interaction and evolutions for higher-order extensions to integrable models.
- Treatment of Industrial Wastewaters: many industries produce highly contaminated waste waters which must be processed before they can be released into the environment.
- Mathematical models for the activated sludge process are being developed and analysed using the tools of non-linear dynamical systems theory.

STATISTICAL AND SURVEY METHODOLOGY
Statistical design, including survey and experimental design; analysis of data from complex populations, including survey, longitudinal, spatial and aggregated data; statistical modelling, including semi-parametric and nonparametric methods, time series, quasi-likelihood, multi-level modelling, and estimating equations; data quality and survey methods, particularly telephone, household and Internet surveys; small area estimation; analysis of linked data; statistical confidentiality.

MATHEMATICAL FINANCE
Pricing exotic options and financial derivatives, computational finance, quantitative risk management, and theory of stochastic analysis and its applications in finance.

MATHEMATICS EDUCATION
Gaming approaches for learning mathematics, statistics or computing; development of problem solving approaches for learning mathematics and/or statistics; experiential approaches for learning mathematics and/or statistics.
RESEARCH CENTRES AND INSTITUTES
- Engineering Manufacturing
- Centre for Intelligent Mechatronics (CIM)
- Power Quality Research Centre (PQRC)
- Information, Communication and Technology Research Institute (ICTR)
- Visual Signal and Information Processing Group (VSIPG)
- Wireless Research Group (WRG)
- Wireless Technologies Laboratory (WTL)*
- Centre for Emerging Networks and Applications (CENA)
- Centre for Visual Information Processing and Content Management (CVIPCM)
- Centre for Audio, Signal Processing and Multimedia Delivery (CASPMD)
- Photonics and Electronic Signal Processing Group (PESPG)
- Centre for Computer and Information Security Research (CICSR)
- Research Centre for Interactive Learning Environments (RCLE)
*under review

MATHS
- Centre for Pure Mathematics (CPM)
- Centre for Engineering and Applied Mathematics (CEAM)
- Centre for Mathematical Finance (CMF)
- Mathematics Education

OTHER RESEARCH CENTRES INCLUDE:
- Intelligent Systems Centre (ISC)
- Decision Systems Laboratory (DSL)
- Centre for Business Services Sciences (CBSS)
- Centre for Information Systems and Technology Research (CISTR)
- Centre for Statistical Survey Methodology (CSSM)

RESEARCH DEGREES

DOCTOR OF PHILOSOPHY (PHD)
CRICOS 001244E

Duration 3 years
Starting sessions Autumn/Spring
Entry requirements Listed on page 18.

- Computer Science
- Information & Communication Technology
- Information Systems
- Electrical, Computer & Telecommunications Engineering
- Mathematics
- Statistics

MASTER OF INFORMATION SYSTEMS AND TECHNOLOGY – RESEARCH*

MASTER OF COMPUTER SCIENCE – RESEARCH

MASTER OF ENGINEERING – RESEARCH (ELECTRICAL, COMPUTER OR TELECOMMUNICATIONS ENGINEERING)

MASTER OF SCIENCE – RESEARCH (MATHEMATICS)

MASTER OF SCIENCE – RESEARCH (STATISTICS)
CRICOS 042638C, 042551K, 042541A, 042557D, 042542M

Duration 1.5 years
Starting sessions Autumn/Spring
Entry requirements Listed on page 18.
*subject to approval

COURSEWORK DEGREES

Please refer to page 21 to find out how the qualifications and marks obtained in your country equate to the general entry requirements shown below.

COMPUTER SCIENCE & SOFTWARE ENGINEERING

MASTER OF COMPUTER SCIENCE ADVANCED*
CRICOS 067080G

Duration 2 years (96cp)
Starting sessions Autumn/Spring
Entry requirements Recognised Bachelor degree in Computer Science, Software Engineering or Computer Engineering with an equivalent average mark of 60%.
Applicants must be proficient in an object-oriented programming language (for example C++ or Java).

COURSE STRUCTURE
Students take two major studies, each comprising six subjects (36cp), from the options below. Additional subjects include research methodology and the option to include a project (subject to meeting the entry requirement) or additional coursework.

MULTIMEDIA & INTELLIGENT PROCESSING
Recent years have witnessed interesting applications of techniques, such as fuzzy logic, rough sets, neural networks and evolutionary computation to multimedia processing.
Students learn techniques to develop image and video retrieval, and artificial and neural intelligence. Subjects include: image and video processing, computational intelligence and pattern recognition.

SOFTWARE ENGINEERING & PROJECT MANAGEMENT
This major equips students with knowledge in key areas of software specialisation, architecture, design and testing, and project management within the IT industry. Students take three subjects in Software Engineering, including software testing and analysis, service-oriented software engineering and formal methods in software engineering; and three subjects in Project Management including IT security and risk management, change management and technology management.

INFORMATION SECURITY
Everyone is aware of the need for information security in today’s highly networked business environment. Information is arguably an enterprise’s most valuable asset and its protection has become a global IT priority. Subjects include: coding for secure communication, advanced network security and mathematics for cryptography.
*subject to approval

MASTER OF COMPUTER SCIENCE
CRICOS 012129F

Duration 1 year (48cp)
Starting sessions Autumn/Spring
Entry requirements Recognised Bachelor degree in Computer Science, Software Engineering or Computer Engineering with an equivalent average mark of 60%.
Applicants must be proficient in an object-oriented programming language (for example C++ or Java).

COURSE STRUCTURE
Students complete eight 6cp subjects from the Computer Science graduate list of subjects, including one major from the options below.

SOFTWARE ENGINEERING
This major equips the student with modern tools and techniques required by the specialist working in the rapidly evolving security technology industry. Subjects include: coding for secure communication, network security and advanced computer security.

MULTIMEDIA INFORMATION PROCESSING
Students master techniques required to develop multimedia applications including image and video retrieval, video surveillance, object tracking, face recognition, biometric analysis, etc. Subjects include: pattern recognition, image and video processing, computer vision.

SOFTWARE ENGINEERING
This major equips the student with knowledge in key areas of software specification, architecture, design and testing required in the industry. Subjects include: software testing and analysis, service-oriented software engineering, formal methods in software engineering.

INTELLIGENT SYSTEMS
Several new learning and reasoning paradigms have been developed recently to cope with the problems of designing complex systems required in many real applications. This major provides the student with the fundamental knowledge and preparation for employment in exciting fields such as data mining, knowledge discovery, agent-based system development and mobile robots. Subjects include: computational intelligence, perception and planning, reasoning and learning.
The Computer Science Graduate Subject List includes study in: Software Engineering, Software Requirements and Specification, Reasoning and Learning, Pattern Recognition, Computer Vision, Perception and Planning, Computational Intelligence, Network Security, Computer Security, Information Theory, Data Mining and Knowledge Discovery.

**ARTICULATION**

Upon successful completion of this course, students may seek to articulate into the second year of the Advanced program.

**PROFESSIONAL RECOGNITION**

Both degrees are accredited by the Australian Computer Society (ACS) as meeting the requirements for membership at the Professional level. ACS has reciprocal agreements around the world, including those listed under the Master of Information & Communication Technology.

**MASTER OF COMPUTER STUDIES**

CRICOS 067081G

**Duration** 2 years (96cp)

**Starting sessions** Autumn/Spring

**Entry requirements** Recognised Bachelor degree in any discipline, with an equivalent average mark of 60%.

This course has been specifically designed to allow students without a computer science degree to gain the programming and computer science skills to work as a professional in the industry. It is a technically oriented course and provides graduates with the skills they need to progress in the IT industry.

**Course Structure**

Students must successfully complete eight core subjects (48 credit points):

- Information Systems
- Algorithms and Problem Solving
- Procedural Programming
- Applied Programming
- Information Technology and Citizens’ Rights
- Algorithms and Data Structures
- Object Programming and Frameworks
- Interacting Systems

Students then need to complete no more than four subjects from Elective Subjects List A and at least four subjects from Elective List B as below:

Elective Subjects List A: Development Methods and Tools; Markup Languages; Java Programming and Object Oriented Design; Distributed Systems; Database Systems.

Elective Subjects List B: Information and Communication Security Issues; World Wide Networking; Database Design and Implementation; Database Performance Tuning; Software Engineering Practices & Principles; Systems Administration; Artificial Intelligence; Human Computer Interface; Real Time Programming; Organisation of Programming Languages; Computer Security.

**ARTICULATION**

Students completing the Master of Computer Studies with a 60% average will be guaranteed entry into the Master of Computer Science.

**INFORMATION SYSTEMS AND TECHNOLOGY**

**MASTER OF INFORMATION & COMMUNICATION TECHNOLOGY ADVANCED**

CRICOS 067074F

**Duration** 2 years (96cp)

**Starting sessions** Autumn/Spring

**Entry requirements** Recognised Bachelor degree with an equivalent average mark of 60% in an area related to ICT.

This degree is aimed primarily at graduates working in the Information & Communication Technology (ICT) industry who are seeking to further their understanding of organisational, economic, regulatory and socio-technical issues that arise in the implementation and application of IT. Students can choose either to develop further their technical skills or to develop skills in ICT management.

Students may specialise in either one or two of the following majors:

- ICT Strategic Planning
- Enterprise Networking
- Information Systems Development

**Course Structure**

The MICT program consists of two (12 credit points) core subjects chosen from:

- Fundamentals of Contemporary Technologies
- Project and Change Management
- Enterprise Architecture Design
- Systems Integration

For the MICT, students can then either complete a further six subjects (36 credit points) to obtain a major from the list below; or they can complete all four core subjects (24 credit points) plus either the ICT Research Program or E-health Program (see below).

The MICT Advanced program consists of all four core subjects (24 credit points) from the list above. Students can then either complete two majors (36 credit points/ 6 subjects each); or a 36 credit point major (6 subjects), a 24 credit point recommended program and 12 credit points of electives; or a 36 credit point major (6 subjects) and 36 credit points of elective subjects.

Both programs offer a major of study as listed below, and students in the Advanced program have the opportunity to graduate with two majors. The major/s will be recorded on the degree testamur.

**MAJORS**

**ICT STRATEGIC PLANNING**

This major provides additional skills in ICT Management. Students select 6 subjects from a list of ICT management and business management subjects.

**ENTERPRISE NETWORKING**

The Enterprise Networking major focuses on the use of computer networks and the Web to help organisations remain competitive in a global economy. This major will allow students to build on their knowledge and skills of ICT Management.

**INFORMATION SYSTEMS DEVELOPMENT**

The Information Systems (IS) Development major allows students to strengthen their technical skills and select up to 4 subjects (24 credit points) on IS development; students also complete 2 subjects (12 credit points) of IS electives, or a 12 cp industry-based project. This allows students to increase their IS development skills and to gain practical experience of IS development in an Australian business environment.

There are also two (2) further programs of study on offer, which include:

**ICT RESEARCH PROGRAM**

This program comprises an 18 credit point project and 6 credit points on research methods. This program is designed for students who wish to move into a research degree after completing the MICT (Adv) or who simply want to develop R&D skills for their career.

**E-HEALTH PROGRAM**

This program comprises 4 subjects (24 credit points) specifically suited to ICT practitioners who wish to focus on the health industry or for health administrators who wish to move into the management of health information systems.

**PROFESSIONAL RECOGNITION**

The Master of Information & Communication Technology (MICT) and MICT Advanced degrees are accredited by the Australian Computer Society (ACS) as meeting the requirements for membership at the Professional level. ACS has reciprocal agreements around the world, including:

- Association for Computing Machinery (USA)
- British Computer Society
- Canadian Information Processing Society
- Hong Kong Computer Society
- The Singapore Computer Society (SCS)
- The South-East Asian Regional Computer Confederation (SEARCC)
- Malaysia National Computer Confederation
- The International Federation for Information Processing (IFIP)
- Computer Society of India
- Computer Society of Pakistan
- Computer Society of South Africa
- Computer Society of Sri Lanka
I really enjoyed the team work aspects of studying at UOW. As an international student, I feel teamwork is really important, and frankly it was really difficult for me to learn at first. I was struggling to work with people from different countries and cultures; but by learning to understand and manage them I learned more about corporate citizenship and how to solve problems and overcome my weaknesses.

My UOW degrees gave me a broad understanding about the importance of combining technical and soft skills. I understand how important soft skills are, and sometimes I think that failures result because of how we handle problems rather than what we know about the problems themselves.

I chose to study at the University of Wollongong because I saw a great combination of study with real-life/work applications. The study environment at UOW really supported me to learn and reach my goals. Wollongong is a nice place to live with good people and a great university—UOW was my first choice.

ARIO GUNAWAN
INDONESIA
MASTERS OF INFORMATION SYSTEMS
MASTER OF INFORMATION TECHNOLOGY MANAGEMENT
MASTER OF INFORMATION AND COMMUNICATION TECHNOLOGY

Currently I’m employed as an associate software engineer at Accenture Ltd., where I work with one of the company’s largest clients, the Australian Taxation Office. Some interesting aspects of my work include combining my experience as a graduate of Computer Science by developing automation programs/applications with the business and management side in order to improve effectiveness and efficiency of operating procedures.

I understand how important soft skills are, and sometimes I think that failures result because of how we handle problems rather than what we know about the problems themselves.

The Master of Information Systems examines both the organisational and technological issues that are needed to analyse and design business information systems. The program places strong emphasis on systems development methodologies, systems management, electronic commerce and a selected area of IS research. This degree is aimed at building the knowledge of future leaders to manage and create information system technologies and solutions.

**COURSE STRUCTURE**

The MIS program consists of five core subjects (30 credit points):

- Fundamentals of Contemporary Technologies
- Information Systems Strategic Planning
- Information Systems Project
- Project and Change Management
- Systems Development Methodologies

Students then complete a further 2 elective subjects (12 credit points) from the following subjects: Enterprise Architect Design, Systems Integration, Technology Management and Innovation, Information Design and Content Management, Information Technology Governance, Advanced Business Process Management, IT-Enabled Supply Chain Management, Business Intelligence and Knowledge Management.

**PROFESSIONAL RECOGNITION**

The Master of Information Systems is accredited by the Australian Computer Society (ACS) as meeting the requirements for membership at the Professional level. ACS has reciprocal agreements around the world, including those listed under the Master of Information & Communication Technology above.

**MASTER OF INFORMATION TECHNOLOGY MANAGEMENT**

CRICOS 031283E

**Duration** 1 year (48cp)

**Starting sessions** Autumn/Spring

**Entry requirements** Recognised Bachelor degree with an equivalent average mark of 60% in an area related to ICT.

The program is designed to prepare professionals to integrate and manage the information technology and systems in organisations. The program covers both IT strategic planning and implementation, and organisational management. Graduates will acquire an in-depth understanding of managing projects, people, knowledge and technologies in an organisational context.

**MASTER OF HEALTH INFORMATICS**

CRICOS 046872E

**Duration** 1 year (48cp)

**Starting sessions** Autumn/Spring

**Entry requirements** Recognised Bachelor degree with an equivalent average mark of 60% in an area related to ICT. Applicants with a degree in Health Science plus at least one year full-time (or part-time equivalent) employment in a health-related position will be considered. Students completing the Master of Public Health will also be eligible for entry.

Health services in Australia and around the world are becoming increasingly reliant on IT and e-health. This program is designed to provide IT professionals with specific knowledge of health informatics and provide health professionals with a better understanding of IT within their industry. The program aims to equip graduates with an understanding of the health sector, and of the application of relevant systems to that sector. The degree enables graduates to take on key roles in successful strategy development and health systems projects.

**MASTER OF INFORMATION TECHNOLOGY STUDIES ADVANCED**

CRICOS 067077C

**Duration** 2 years (96cp)

**Starting sessions** Autumn/Spring

**MASTER OF INFORMATION TECHNOLOGY STUDIES**

CRICOS 067076D

**Duration** 1 year (48cp)

**Starting sessions** Autumn/Spring

**Entry requirements** A recognised Bachelor degree in any area.

* subject to approval

The Master of Information Technology Studies (MITS) and the MITS Advanced are designed as conversion degrees for graduates from any non-ICT area to further their knowledge of the ICT sector and apply technical skills in the workplace. The programs offer a prescribed study program that will give students the technical skills required to work in the ICT profession. The MITS Advanced provides students with additional development skills and offers the opportunity to specialise in one of three majors.

This degree is aimed at graduates from any discipline looking to further their knowledge of the ICT sector and apply technical skills in the workplace.
ENGINEERING

The MITS program consists of eight core subjects (48 credit points):
- Programming Concepts
- Systems Analysis
- Database
- Object-oriented Programming
- Communications and Networks
- Principles of e-Business
- System Design and HCI
- Web Programming

The MITS Advanced program includes the eight core subjects above, three additional core subjects, and a major study (24cp).

MITS Advanced – additional core subjects:
- Database Management Systems
- Professional Practice and Ethics
- IT Project (industry-based annual project)

MITS ADVANCED – MAJOR STUDIES
Students in the MITS Advanced choose one of the following major studies, and complete four subjects (24cp) from that major.

ENTERPRISE SYSTEMS MANAGEMENT
This major exposes the student to key concepts and theories needed to understand the processes of systems management within a business environment.

NETWORKING
This major provides the students with the skills necessary to build or manage networks that support businesses and governments in a competitive global market.

E-BUSINESS
This major provides the student with an understanding of the organisational environment and a working knowledge of the technologies used to progress the e-business environment.

ELECTRICAL, COMPUTER & TELECOMMUNICATIONS ENGINEERING

MASTER OF PROFESSIONAL ENGINEERING
CRICOS 067085C

Duration 2 year (96cp)
Starting sessions Autumn/Spring
Entry requirements Recognised Bachelor degree in computer, electrical, electronics or telecommunications engineering with an equivalent average mark of 60%.

The Master of Professional Engineering is a two-year program of expert skills and competencies required for the Professional engineer. It is designed to develop the engineer’s professional practice skills, provide advanced technical and specialist skills, and an opportunity for industrial experience or project work.

TELECOMMUNICATIONS ENGINEERING
This major focuses on the design of modern communication systems. Subjects include:
- Multimedia Signal Processing
- Internet Technology Laboratory
- Telecommunications Systems Modelling
- Wireless Communication Systems
- Network Engineering
- Telecommunications Network Management

POWER ENGINEERING
This major enables graduates to focus on the key elements of power engineering. Subjects include:
- Power Electronics and Drives
- Power System Analysis
- Power Distribution Systems
- Project and Change Management
- Computer Controlled Systems
- Real-time Computing

ROBOTICS AND AUTOMATION
This major equips graduates with advanced knowledge and skills in the area of mechatronics. Subjects include:
- Power Electronics and Drive
- Real-time Computing
- Embedded Systems
- Intelligent Control
- Computer Controlled Systems
- Robotics and Flexible Automation

MASTER OF ENGINEERING STUDIES
CRICOS 012128G

Duration 1 year (48cp)
Starting sessions Autumn/Spring
Entry requirements Recognised Bachelor degree in computer, electrical, electronics or telecommunications engineering with an equivalent average mark of 60%.

The Master of Engineering Studies is designed to provide professionally qualified engineers with the opportunity to extend their engineering skills, including technical and communication skills, to be able to meet the demands of the rapidly evolving engineering sector.

COURSE STRUCTURE
All students complete core subjects (18cp), a major study (18cp) and two electives (12cp).

Core subjects (18cp)
- Advanced Signals and Processing
- Advanced Laboratory
- Communications and ICT Workplace Practice

Advanced Topics in Engineering
- Technology Management and Innovation
- Principles and Practice of Sustainable Development for Engineers, Scientists and Professionals
- Professional Practice (12cp)

Three streams (comprising 18cp) are available:
- Stream 1 – Internship: including a Professional Workplace report of the completed internship and two electives
- Stream 2 – Advanced Project: Students achieving a WAM of 72.5 may complete an Advanced Project (12cp) and one elective
- Stream 3 – Electives: Students must complete three elective subjects

The Internship and Advanced Project are subject to meeting an entry requirement.

MAJORS
Students select one of the following majors (36cp) and complete 6 subjects from the list available for that major. The subjects below give a guide to topics available.

COMPUTER ENGINEERING
This major focuses on the many aspects of computing, from software design to hardware-software integration. Subjects include:
- Multimedia Signal Processing
- Image and Video Processing
- Robotics and Flexible Automation
- Real-time Computing
- Computer Systems
- Embedded Systems

ELECTRICAL ENGINEERING
This major equips graduates with skills needed to design, construct and control electronic and electrical systems for telecommunications, automated systems and the power industry. Subjects include:
- Power Distribution Systems
- Computer Systems
- Embedded Systems
- Computer Controlled Systems
- Internet Networking Protocols
- Network Engineering
Students select one of the following majors, and three subjects (18cp) from the list available for that major.

- Computer Engineering
- Electrical Engineering
- Telecommunications Engineering
- Power Engineering
- Robotics and Automation

The overview of each major and topics available are as outlined above in the Master of Professional Engineering.

**ARTICULATION**

Students completing the Master of Engineering Studies may articulate into second year of the Master of Professional Engineering, or into another one-year Masters program such as: Master of Engineering Practice (Mechatronics), Master of Engineering Management or Master of Information & Communication Technology.

For further Information on Master of Engineering Management, please refer to Faculty of Engineering on page 42.

**MASTER OF TECHNOLOGY ENGINEERING**

CRICOS 067082F

**Duration** 2 years (96cp)

**GRADUATE DIPLOMA IN TECHNOLOGY ENGINEERING**

CRICOS 067073G

**Duration** 1 year (48cp)

**Starting sessions** Autumn/Spring

**Entry Requirements** A recognised bachelor degree in engineering, computing, IT, maths, physics or related area. Students with a degree equivalent to a four-year Australian Bachelor degree in computer, electrical, electronics or telecommunications engineering may be admitted directly into second year of the Masters program.

The programs in Technology Engineering provide a pathway into an engineering qualification to those who have an undergraduate background that is not specifically in computer, electrical or telecommunications engineering. As well as gaining general engineering skills, students have the opportunity to specialise in digital media broadcasting or internet technology by completing the Masters program.

**CORE SUBJECTS**

The first year of the Masters program, as for the Graduate Diploma, comprises eight subjects selected and approved by the Head of School, based on the student’s undergraduate background and/or relevant experience. Students will have the opportunity to gain general skills in areas including:

- Database Systems
- Digital Hardware
- Power Engineering
- Communications
- Internet Engineering

Students in the second year of the Masters program complete a common core (12cp), and one major study (36cp) in either Digital Media Broadcasting or Internet Technology.

**Core subjects**

- Advanced Signals and Systems
- Communication and ICT Workplace Practice

**MAJORS**

**DIGITAL MEDIA BROADCASTING**

This major provides an opportunity for graduates to gain skills in the media and broadcasting areas. Subjects include:

- Multimedia Signal Processing
- Image and Video Processing
- Real-time Computing
- Embedded Systems
- Wireless Communication Systems
- Advanced Laboratory

**INTERNET TECHNOLOGY**

This major provides graduates with advanced knowledge and specialist skills in Internet technologies and systems.

**Subjects include:**

- Internet Technology Laboratory
- Wireless Communication Systems
- Internet Networking Protocols
- Telecommunications Network Management
- Telecommunications Systems Modelling
- Network Security

**MASTER OF STATISTICS**

CRICOS 016121D

**Duration** 1 year (48cp)

**Starting sessions** Autumn/Spring

**Entry requirements** Recognised Bachelor degree with a major in Statistics or the Master of Mathematical Studies.

This program is designed to upgrade statistical skills, and to educate the candidate to undertake advanced statistical work in industry, commerce or government, including the ability to communicate effectively with the users of their skills.

**MASTER OF MATHEMATICAL STUDIES**

**Duration** 1 year (48cp)

**Starting sessions** Autumn/Spring

**Entry requirements** Recognised Bachelor degree with at least first-year mathematics.

This course is for students with limited background in mathematics, to gain knowledge and specialist skills in mathematics and/or statistics. Students will develop research skills through small projects, and the ability to communicate effectively with the users of their skills.

**ARTICULATION**

On the completion of this degree, graduates will be eligible to enrol in the Master of Mathematics, Master of Statistics or Master of Financial Mathematics.

**FEES**

For a full schedule of fees, please turn to pages 67–71.