A dynamic teaching, learning and research environment covering all underlying disciplines of the Information and Communication Technology (ICT) sector has been created in a single Faculty at UOW. The Faculty of Informatics remains the University’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. With a tailor-made curriculum suited to industry and employer needs, Informatics postgraduate programs will place you at the helm of this exciting and rapidly developing science, and equip you with the skills required to participate in the global knowledge economy. Informatics courses also have a high degree of flexibility, allowing you to tailor them to your personal interests. Whether you are looking to move your career into the exciting world of ICT or to expand your knowledge in a specialist area, we offer just the education to meet your needs.

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. The Faculty also consults with state, national and international governments and houses numerous research centres, including the Telecommunications and Information Technology Research Institute (TITR), which has been declared a State Centre of Expertise in Telecommunications by the New South Wales Government. TITR has over sixty academics and 120 postgraduate students actively working on a wide range of projects. To sustain this impressive output, postgraduate students are a major priority of the Faculty, with world class facilities including 24-hour access to computer laboratories.

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 off-shore 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 International Office is responsible for international ICT students, acting as an advocacy point, which includes looking after academic concerns, enrolment, orientation, subject selection, personal counselling and assistance with letters to professional accreditation bodies on behalf of all international students within the Faculty. For more information on the Faculty, please visit: www.uow.edu.au/informatics

Detailed course and subject information can be found at: www.uow.edu.au/handbook/current/pg/informatics
CENTRE FOR INFORMATION SECURITY
This Centre consists of two labs: the first is the Secure Multimedia Information Communications Laboratory (SMICL) which conducts leading-edge research into multimedia security technologies, including digital watermarking, multimedia encryption, multimedia authentication, digital rights management and traitor tracing. The second is the Network Security Labs (NSL) with research projects that include the design and analysis of secure systems with emphasis on network and communication security. Current projects include multicast key management systems for dynamic groups, wireless security (WAP, WLAN, Bluetooth and mobile security), security in programmable virtual networks (PVN), distributed firewalls, next generation intrusion detection systems, and secure peer-to-peer communication.

RESEARCH CENTRE FOR INTERACTIVE LEARNING ENVIRONMENTS (RILE)
RILE is a group of researchers focused on exploring the educational use of technology. The group focuses on the variety of ways to support different learning environments using innovative learning strategies and software tools. RILE researchers are internationally recognised for their expertise in designing interactive multimedia learning resources with embedded cognitive tools and developing online learning environments to support a range of educational settings. RILE researchers work closely with the professional staff of the Educational Media Laboratory.

PHOTONICS & ELECTRONIC SIGNAL PROCESSING GROUP
Research activities focus on the application of advanced signal processing techniques to optical, electronic or opto-electronic systems for various applications. These include: advanced technologies in fringe pattern-based 3-D dynamic profilometry measurement, optical feedback interferometry-based instrumentation and measurement, Fiber Bragg Grating (FBG) manufacture and its applications, as well as blind source separation (BSS) and its applications.

CENTRE FOR VISUAL INFORMATION PROCESSING & CONTENT MANAGEMENT
Research activities include: image and video segmentation, image classification, video surveillance, scene analysis, digital camera image processing, stereo image and processing, image and video watermarking and authentication, image annotation, indexing and retrieval, video summarisation and adaptation.

WIRELESS RESEARCH GROUP
This group focuses on the optimisation of bandwidth use that can be achieved at different layers of digital communication systems. Research activities include: space-time signal processing, mobile ad hoc networks, sequence design for DS-CDMA and time-hopping applications, smart antennas for broadband wireless access systems, channel modelling, error-control coding, and ultra-wideband communications. The group is associated with the Australian Research Council Research Network.

WIRELESS TECHNOLOGIES LABORATORY
Established in early 2004 by seven researchers from Motorola Labs in Sydney, the Laboratory specialises in the research and development of high speed wireless communications technologies. Current projects are in the areas of ultra-wideband and 4G Communications, Wireless Mesh Networking and Wireless Sensor Networks with applications in home networking, public safety and military environments. The Laboratory has close industry links in the USA and Australia and active collaboration with the Chinese Academy of Sciences and Shanghai Jiao Tong University.

VISUAL SIGNAL & INFORMATION PROCESSING RESEARCH GROUP
Research activities include: image and video processing, machine learning and pattern recognition, smart vision sensors, intelligent information processing, biometrics and data mining.
CENTRE FOR STATISTICAL & SURVEY METHODOLOGY (CSSM)

cssm.uow.edu.au

CSSM undertakes fundamental and contract research, major consulting projects and training in statistical methodology. CSSM seeks to lift statistical thinking and practice in Australia and the Pacific through research leadership, teaching, postgraduate supervision and partnerships with governments and industry.

CENTRE FOR ENGINEERING & APPLIED MATHEMATICS (CEAM)

crc.for.intelligent.mechatronics.research.cimr@uow.edu.au

The activities of centre pursue the critical question of how human behaviour and experience, particularly in decision-making, sensing and manipulation can be emulated by machines. The research of the centre has not been limited to manufacturing but exploring how effectively intelligent machines, pervasive computing and robotics can be deployed in medicine, surgery, creative and performing arts. This has created a unique direction and niche research area for the centre particularly among Australian universities.

DESERT KNOWLEDGE CRC

www.desertknowledge.com.au

Desert Knowledge CRC is committed to creating economic opportunities for desert people, and fostering thriving desert regional economies that are based on desert competitive advantages, bringing together Aboriginal and non-Aboriginal communities through the application of research and training.
This degree is aimed primarily at graduates working in the Information & Communication Technology (ICT) industry who will benefit from an in-depth study of the organisational, economic, regulatory and socio-technical issues that arise in the implementation and application of IT, and how to effectively manage these issues.

Students may specialise in either one or two major areas of study:

- e-Business
- strategic management
- network management
- e-Learning
- e-Health

**COURSE STRUCTURE**

The MICT and MICT Advanced programs consist of four (4) core subjects:

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

Students then complete a further 4 subjects (24 credit points) for the Master of Information & Communication Technology, and a further 8 subjects (48 credit points) for the Master of Information and Communication Technology (Advanced). To obtain a major, students choose four subjects from the list identified for that major as shown below.

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 transcript.

**eBUSINESS**

This major addresses the challenges faced by corporations in integrating adaptive business solutions by using evolving technologies. With this major the student gains an understanding of the organisational environment and a working knowledge of the technologies used successfully in the eBusiness environment.


**STRATEGIC MANAGEMENT**

This major exposes the student to key concepts and theories needed to understand the process of strategic information management in organisations.
Entry requirements: Recognised Bachelor degree with an equivalent average mark of 60% in an area related to ICT. Applicants with a degree in any area plus at least one year full-time employment in the ICT industry will be considered.

This 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.

**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 above.

**ARTICULATION**

Students completing the Graduate Diploma with a 60% average will be guaranteed entry into any of the above Masters coursework programs in Information Technology & Information Systems. A two-year package offer of admission to the Graduate Diploma plus the following degrees can be issued:

- Master of Information Systems*
- Master of Information & Communication Technology*
- Master of Information Technology Management
- Master of Health Informatics

*package offer with Advanced degrees available with duration 2.5–3 years.

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### MASTER OF COMPUTER SCIENCE & SOFTWARE ENGINEERING

**MASTER OF COMPUTER SCIENCE (ADVANCED)**

Duration: 2 years (72cp). A fast-track option allowing completion in 1.5 years.

Starting sessions: Autumn/Spring

Entry requirements: Recognised Bachelor degree in computer science, software engineering or computer engineering with an equivalent average mark of 60%. Proficiency in object-oriented programming (C++ or Java) and operating systems (Unix or Linux) is assumed.

The Master of Computer Science caters for both software engineering professionals and students wishing to update and broaden their foundation knowledge and skills, as well as for students preparing for the Master of Computer Science – Research or Doctoral research programs.
Students may specialise in two major areas of study in the Advanced program:

**COMPUTER & NETWORK SECURITY**
This major equips the student with modern tools and techniques required by the specialist working in the rapidly evolving security technology industry and those preparing for research degrees in computer and network security.

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. In addition this major study prepares the student for a research degree in multimedia information processing.

Subjects include: pattern recognition, image and video processing, computer vision.

**SOFTWARE ENGINEERING**
The rapid advances in software engineering techniques in the last decade has revolutionised the way software is developed and deployed. 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.

**INFORMATICS**

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.

**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.

**PATHWAY INTO MASTERS PROGRAMS**

**MASTERS OF COMPUTER STUDIES**
Duration: 1.5–2 years (72cp). A fast-track option allows completion in 1.5 years
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.

**ARTICULATION**
Students completing the Master of Computer Studies with a 60% average will be guaranteed entry into the following Masters degrees:

→ Master of Computer Science*
→ Master of Information & Communication Technology*
→ Masters of Internet Technology
*including admission to the Advanced level.

**ELECTRICAL, COMPUTER & TELECOMMUNICATIONS ENGINEERING**

The Master of Engineering Studies is designed to provide professionally qualified engineers with the opportunity to extend their engineering skills at the Masters level, including technical and communication skills, to be able to meet the demands of the rapidly evolving engineering sector. The aim of each program is to provide advanced theoretical and practical knowledge and skills in the majors being undertaken, and to allow students to undertake a single or double major in the following:

→ Computer Engineering
→ Electrical Engineering
→ Telecommunications Engineering.

**COURSE STRUCTURE**
All students complete 12cp of core subjects in advanced laboratory work and signal processing. To obtain a major, four subjects (24 credit points) are completed from one of the three majors. Students can also select two additional electives from any of the major list.

**CORE**
→ Advanced Signals and Systems
→ Advanced Laboratory

**ELECTRICAL ENGINEERING**
→ Stochastic Signal Processing
→ Power Electronics and Drives
→ Power Systems Analysis
→ Power Distribution Systems
→ Embedded Systems
→ Intelligent Control
→ Computer Controlled Systems
→ Wireless Communication Systems
→ Advanced Topics in Engineering
→ Robotics and Flexible Automation

**COMPUTER ENGINEERING**
→ Multimedia Signal Processing
→ Image and Video Processing
→ Adaptive Signal Processing
→ Speech and Audio Processing
→ Real-Time Computing
→ Computer Systems
→ Embedded Systems
→ Computer Controlled Systems
→ Advanced Topics in Engineering
→ Web Technology and Applications

**TELECOMMUNICATIONS ENGINEERING**
→ Network Security
→ Multimedia Signal Processing
→ Stochastic Signal Processing
→ Telecommunications System Modelling
→ Wireless Communication Systems
→ Error Control Coding
→ Advanced Topics in Engineering
→ Internet Protocols
→ Network Engineering
→ Telecommunications Network Management

Students who obtain a weighted average mark of at least 72.5% for the full-time first session load may be permitted to replace two elective subjects with an Advanced Project.
ARTICULATION

Students who have satisfactorily completed the Advanced Project and have attained a weighted average mark of 67.5% or higher in the Master of Engineering Studies are eligible to apply for entry to the Master of Engineering – Research.

Students can also articulate to the Master of Engineering Management or Master of Information and Communication Technology, please see the table below.

For further Information on Master of Engineering Practice (Mechatronics), please refer to Faculty of Engineering.

MASTER OF INTERNET TECHNOLOGY
Duration: 1 year (48cp)
Starting sessions: Autumn/Spring
Entry requirements: a recognised Bachelor degree in telecommunication, computer or electrical engineering, computer science, information technology or a related field, or equivalent, completed within the last five years, with a 60% average; or a Graduate Diploma in Internet Technology.

The Master of Internet Technology (MIT) is designed to provide students with advanced knowledge and specialist skills in a broad range of Internet technologies, systems and solutions.

COURSE STRUCTURE
Students complete 2 core subjects (12 credit points) – Internet Fundamentals and Internet Project.

They then choose 6 electives (36 credit points) from the subjects: Business Online, Computer and Network Security, Internet Networking Protocols, Multimedia Communications, Web Technology and Applications, and Wireless and Mobile Communication Systems. Masters students who obtain a weighted average mark of at least 72.5% for the first full-time session may be permitted to replace two elective subjects with an Advanced Internet Project.

ARTICULATION
Students who satisfactorily complete the Advanced Internet Project and who gain a weighted average mark of 72.5% or higher in the MIT are eligible to apply for entry to the Master of Engineering–Research.

DOUBLE MASTERS PROGRAMS

The Faculty of Informatics offers the unique opportunity to gain two Masters qualifications in two years through its Double Masters programs. These programs offer considerable savings on the tuition fee for your second Masters course because of formal articulation between the courses which reduces both the subject load and fees for the second Masters course.

All of the Double Masters programs shown in the table below can be completed within two years. In each case, the second Masters can be completed with a further 36 credit points (6 subjects), instead of the usual 48 credit points (8 subjects).

<table>
<thead>
<tr>
<th>FIRST MASTERS DEGREE</th>
<th>SECOND MASTERS DEGREE</th>
<th>SAVING ON 2ND MASTERS ($AUD)</th>
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<tbody>
<tr>
<td>Master of Information &amp; Communication Technology</td>
<td>Master of Computer Science</td>
<td>5325</td>
</tr>
<tr>
<td>Master of Engineering Science</td>
<td>Master of Engineering Practice (Mechatronics)*</td>
<td>5475</td>
</tr>
<tr>
<td>Master of Information Systems</td>
<td>Master of Information Technology Management</td>
<td>5325</td>
</tr>
<tr>
<td>Master of Computer Science</td>
<td>Master of Engineering Studies</td>
<td>5475</td>
</tr>
<tr>
<td>Master of Information Technology Management</td>
<td>Master of Information &amp; Communication Technology</td>
<td>5325</td>
</tr>
<tr>
<td>Master of Engineering Studies</td>
<td>Master of Engineering Practice (Mechatronics)*</td>
<td>5475</td>
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<td>Master of Information &amp; Communication Technology</td>
<td>5325</td>
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</tbody>
</table>

*Located in the Faculty of Engineering.

Applicants need to meet the academic entry requirements for each component Masters program as shown in the preceding pages.

You can request a package offer to both Masters programs when you apply for admission to UOW—a package offer will allow you to apply for a student visa for the full two-year duration of the Double Masters program. Alternatively, you can request an offer for the second Masters while you are studying the first Masters.

PATHWAY INTO MASTERS PROGRAMS

The following program serves as a pathway into the Engineering & Internet Technology Masters courses offered by the Faculty of Informatics.

GRADUATE DIPLOMA IN INTERNET TECHNOLOGY
Duration: 1 year (48cp)
Starting sessions: Autumn/Spring
Location: Wollongong
Entry requirements: a three-year tertiary qualification with a 60% average, which must include the equivalent of first-year mathematics and relevant computing content. Applicants who have at least two years of Internet/computing related work experience may also be considered.

The Graduate Diploma is both a stand-alone qualification, as well as a pathway to the Master of Internet Technology or the Master of Engineering Studies. The program is aimed at those with limited ICT technical qualifications but significant experience in related fields who intend to upgrade their knowledge and understanding of internet technology, programming and their applications.

Graduate Diploma students complete 48cp of subjects approved by the Head of School. This program offers students general and specialist skills in diverse areas of Internet technologies and their applications, including:

→ Programming and programming languages such as Java;
→ Database systems;
→ System level engineering principles and design;
→ Electronics and communications; and
→ Embedded Internet systems.

The Diploma provides practical exposure to Internet technologies through laboratory work.

ARTICULATION

Students completing the Graduate Diploma in Internet Technology with a 60% average will be guaranteed admission into the courses listed below (which will require a further one year of study). Two-year package offers of admission into the Graduate Diploma plus one of the following degrees can also be issued:

→ Masters of Internet Technology
→ Master of Engineering Studies
→ Master of Information & Communication Technology*

*The Advanced level of this degree requires 1.5–2 years of further study.
MATHMATICS & APPLIED STATISTICS

MASTER OF FINANCIAL MATHEMATICS
Duration: 1 year (48cp)
Starting sessions: Autumn/Spring
Entry requirements: Recognised Bachelor degree with a major in mathematics or statistics, or equivalent. Applicants with other degrees will be considered if they possess a substantial background in mathematics (including calculus, linear algebra, differential equations, probability and statistics) equivalent to at least a second-year Bachelor level.

This Masters provides training in quantitative financial analysis and a range of analytical, statistical, computational and modelling skills needed for the formulation, implementation and evaluation of models in the financial sector to structure transactions, evaluate financial derivatives, manage risk and construct investment strategies.

COURSE STRUCTURE
Students complete six 6cp core subjects:

→ Advanced Risk & Insurance
→ Managerial Finance
→ Financial Calculus
→ Numerical Methods
→ Stochastic Methods in Finance
→ Multiple Regression & Time Series

Plus one additional statistics subject and one additional finance subject. Students also attend practitioners’ seminars.

MASTER OF MATHEMATICS
Duration: 1 year (48cp)
Starting sessions: Autumn/Spring
Location: Wollongong
Entry requirements: Recognised Bachelor degree with a major in Mathematics. Applicants with a tertiary qualification containing a minimum of two years of mathematics/statistics may be considered. The Graduate Diploma requires a degree with at least first-year mathematics.

There is a choice of two programs in the Master of Mathematics: Engineering & Industrial Mathematics, or Pure Mathematics (Analysis, or Foundations of Mathematics). Students complete a research project and additional subjects chosen from the electives available in Mathematics or Statistics.

GRADUATE DIPLOMA IN STATISTICS
Duration: 1 year (48cp)
Entry requirements: Masters applicants require a recognised Bachelor degree with a major in mathematics/statistics. Applicants may consider a tertiary qualification including a minimum of two years of mathematics/statistics may be considered. The Graduate Diploma requires a degree with at least first-year mathematics.

The program provides the ability to undertake advanced statistical work in industry, commerce of government, including the ability to communicate effectively with the users of their skills. Masters students complete a small research project along with their elective subjects in Mathematics and Statistics.

ARTICULATION
Students successfully completing the Graduate Diploma in Statistics will be eligible for admission to the Master of Statistics.

FEES
The tuition fees shown are in A$ per session. There are two standard sessions of study per year. The normal duration and commencement sessions can be found in the course description for each course in the preceding pages.

PhD or Masters by Research
(Mathematics & Statistics) 10100
Master of Engineering (Research) 11000
Master of Information Systems (Research) 10200
PhD in Information & Communication Technology
Master of Information & Communication Technology – Research 10700
All coursework degrees in Mathematics & Statistics 10050
Master of Computer Science (Advanced)
Master of Computer Studies 7981
Master of Information & Communication Technology (Advanced) 8213†
Master of Engineering Studies (2 majors) 10950
Master of Engineering Studies (single major)
Masters or Graduate Diploma in Internet Technology 10950
All other coursework degrees 10650
† Based on standard duration of 4 sessions. The fee for fast-track completion in 3 sessions is $10650 per session. 1 Based on standard duration of 4 sessions. The fee for fast-track completion in 3 sessions is $10950 per session.

"My name is Shujie Miao. After graduating with a Masters of Computer Science in 2003, I went back to China. In June 2004, I came back to Australia as a skilled immigrant. Within one and a half months, I got a job as an IT project contractor for Maersk Australia Pty Ltd. Maersk line is the biggest shipping line in the world and one of the Fortune Top 500 companies.

Upon completion of the project, the company offered me a permanent position as Oceania Area EDI (Electronic Data Interchange) Coordinator based on my performance and contributions.

In my opinion, being an IT graduate of UOW offers many advantages over other universities. The hands-on experience I gained during my study and the assignments, which are similar to the real things in my daily work, make me feel I already worked on such things back in Uni.

The beautiful natural environment in and around the campus, with golden beaches, green hills, blue skies—in addition to the cutting-edge technology facilities—made studying at University of Wollongong most memorable and enjoyable."

The University of Wollongong attempts to ensure the information contained in this publication is correct at the time of production (August 2007), however, sections may be amended without notice by the University in response to changing circumstances or for any other reason. Check with the University at the time of application/enrolment for any updated information. UNIVERSITY OF WOLLONGONG CRICOS: 00102E

Effective from 30 April 2007, Wollongong University College changed its business name to Wollongong College Australia. This change has been necessitated by amendments to State and Federal Government Protocols which now restrict use of the word university in business names.

Wollongong College Australia is a registered business name of ITC Education Limited ABN 14 105 312 329. CRICOS No. 02723D. University of Wollongong CRICOS: 00102E