

CONNECT: INFORMATICS



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- 2 OUR FACULTY
- 4 SIX REASONS TO STUDY INFORMATICS
- 12 NEXT GENERATION
- 16 STUDY OPTIONS





WELCOME

Connectivity, mobility and the acquisition and use of big data are three of the most important drivers of the digital economy. The implication is that the economies around the world, large corporations and small-to-medium enterprises will require an appropriately trained and competent workforce in order to improve their processes, stay competitive and grow their business. Information and communication technology (ICT) has been identified as pivotal in addressing the challenges that will be faced in reaping the benefits of these three drivers.

The Faculty of Informatics provides theoretically based and industry relevant education in the disciplines that underpin ICT: information systems and technology, computer science and software engineering, electrical, computer and telecommunications engineering, and mathematics and applied statistics. The education is provided in a nurturing environment and community where individuals can achieve their potential.

Our graduates are amongst the most sought-after by industry because of their deep knowledge of the discipline, adaptability, communication skill, application and ethical professionalism. They are thought leaders in the industry.

We pride ourselves in having excellent teachers with strong industry engagement and research agendas at the forefront of their chosen disciplines. Our academics bring insights from their research to the undergraduate and postgraduate classrooms to create an environment that inspires curiosity in our students.

I personally welcome and invite you to be part of the exciting and rewarding discipline of ICT: a discipline that breaks new frontiers and creates new paradigms of working, playing and living.

PROFESSOR PHILIP OGUNBONA
DEAN, FACULTY OF INFORMATICS



A close-up photograph of a person's hand holding a white tablet. The person is wearing a dark grey sweater and a silver metal watch. The background is a vibrant blue with a bokeh effect of light spots. The text is overlaid on a white rectangular area in the top left corner.

WHAT WE DO
CONNECT:
OUR FACULTY



Informatics harnesses the power of technology to bring benefit to everyone. At UOW, an informatics degree combines an uncompromisingly strong technical education with practical and industry-focused subjects. Our degrees draw on cutting edge research to keep them relevant and current, creating industry ready ICT professionals.

A degree from the Faculty of Informatics puts you in the driving seat to play a vital role in the digital economy: using tools and applications to solve real problems, providing benefit to the global community.

The ICT industry plays a vital role in meeting the challenges of our time and provides widespread benefit across the entire socio-economic landscape. The tools of modern economies—the Internet, e-mail, the world wide web, web browsers, information portals, e-commerce, broadband communications, wireless connectivity, telematics—are all innovations of information professionals striving to create benefit across the globe.

UOW was one of the first Universities in the world to combine all the fields of study related to ICT into one faculty: Informatics. We are now one of the largest contributors of ICT research in the Southern Hemisphere. Through our world class research we offer a variety of programs designed to help meet the challenges of the rapidly changing world of ICT.

SIX REASONS TO STUDY INFORMATICS AT UOW

If you love technology and its potential to change the world, your future could be in Informatics. Here are six reasons why you should consider studying Informatics at UOW.

1. WANT EXCELLENT JOB PROSPECTS

The value of any undergraduate degree lies in the ultimate employability of its graduates. ICT professionals work across every industry sector, in cities, in the country, in large firms and in small business. There are opportunities for ICT graduates everywhere.

The Faculty of Informatics works closely with industry to ensure that programs are relevant and that graduates are well positioned to be leaders in their respective fields. Many Informatics graduates have secured employment well before graduation. They earn high starting salaries and are in demand. Society needs people who can solve problems and find new ways of thinking whether this be creating an NBN network, or creating applications to increase healthcare options in remote areas.

The Faculty of Informatics teaches a number of ICT programs in other countries which contributes to its excellent reputation and internationally recognised accreditation.

2. WANT TO MAKE A DIFFERENCE

As an informatics graduate you can make a difference to how the world works, how information builds knowledge, and how this knowledge can inform public debate. You can help solve the problems that are important to society: controlling and preventing pollution, developing new medicines, creating advanced technologies to name a few.



3. WANT TO STUDY OVERSEAS

We provide an opportunity to complete part of your degree overseas with partner institutions through the UOW International Exchange Program. By studying at some of the most prestigious universities around the world you can broaden the scope of your degree and enhance your employment prospects by graduating from UOW with an international experience.

Eligible students can apply for travel grants from the University of Wollongong and the Australian Government.

4. WANT INDUSTRY EXPERIENCE

Our degrees offer practical learning experiences through our placement service and work experience programs, so you graduate with the appropriate skills and knowledge to make you market ready. Our faculty is well known for producing job-ready ICT graduates that are able to work across a wide range of sectors such as Commerce, Health or Engineering.

5. ACCREDITATION

Our degrees are accredited by the relevant Australian professional bodies:

- Australian Computer Society (ACS)
- Engineers Australia
- Australian Securities and Investment Commission (ASIC)
- Financial Services Institute of Australia (FINSIA)
- Australian Mathematical Society.

6. RESEARCH CREATING TECHNOLOGY

Through collaboration and multidisciplinary research we find solutions to challenging problems which contribute to the advancement of basic and applied knowledge for the benefit of all across the entire ICT spectrum including facial recognition, mobile computing and virtual realities.

We have a number of innovative research centres including the **ICT Research Institute (ICTRI)** which is one of the largest university-based sites for research and technology development in ICT in Australia. The **Centre for Statistical and Survey Methodology (CSSM)** which undertakes fundamental research, industry-focused and contract research and major consulting projects. It enjoys a strong research partnership with the Australian Bureau of Statistics. **The Endeavour Energy Power Quality and Reliability Centre (EEPQRC)** is a nationally and internationally recognised centre of excellence which supports research, education and consulting in distribution and transmission system power quality, reliability and distributed generation systems. **The Institute for Mathematics and its Applications (IMIA)** is a world-class institute producing high-impact research across the full spectrum of mathematics from influential fundamental research through to applications of mathematical modelling in finance, engineering, optics and nanotechnology.

The research strengths of the Faculty ensure that the student experience is informed by emerging technologies.



DEGREE SPOTLIGHT

MOBILE COMPUTING

It is estimated smart phone sales will hit 420 million units and it is projected that 2015 will see up to 1 billion units being sold. The ubiquitous nature of mobile devices whether it be smart phones or tablets has changed the way people interact and communicate, both socially and professionally.

In addition to this, there is a need to rethink the current approaches to delivering services to users of mobile platforms. Over the last 5 years we have witnessed the rapid growth of cloud computing and increasing role of distributed system technologies.

There is an increasing demand for graduates who have an in-depth understanding of the architectures, concepts and tools

used to create content and services for mobile platforms. This new major is designed to complement the existing majors within the Faculty's Computer Science degree focusing on key subject areas such as distributed systems, human interfaces, web platforms and mobile applications which are key to leveraging mobile platforms in the medium to long term.

There is a clear need in the market to deliver professionals who appreciate the complexities behind mobile systems. This major will give students the opportunity to develop skills applicable to mobile devices, including aspects of distributed systems, communication technology, user interaction design and device-specific application programming.



MEDICAL MATHEMATICS

The rapid development of medical technology has created a niche sector that relies on mathematicians and statisticians. The Bachelor of Medical Mathematics is a 3-year degree that has been pioneered by UOW in response to the needs identified by the medical and health sectors.

It is now widely recognised that mathematical and statistical modeling and analysis is the key to future breakthroughs in areas including the understanding of biological systems, the treatment of diseases, drug development, and targeted clinical trials. This is because mathematics and statistics enable us to: design meaningful yet streamlined experiments; find structure in data; and construct models that help to predict, and therefore control, future outcomes. For example, there used to be regular measles epidemics in New Zealand at approximately seven-year intervals.

A mathematical analysis of measles epidemics and immunisation effects led to the measles immunisation program that now runs in both New Zealand and Australia; since its implementation there have been no measles epidemics in either country.

The Bachelor of Medical Mathematics provides the tools and develops the skills required for advanced modeling and analysis in the medical and health sciences sector. The degree program includes a combination of mathematics, statistics, chemistry, biosciences, population health, medical imaging, physiology and psychology. Graduates will be equipped to pursue careers in mathematics, statistics, and medical research. They will also be suitably prepared for postgraduate studies in medicine, mathematics, bioinformatics, and allied health professions.



DEAN'S SCHOLAR PROGRAM

Dean's Scholar degrees are our premier limited intake programs developed for high achieving students. You need an ATAR of at least 93 to enter the program. Benefits include:

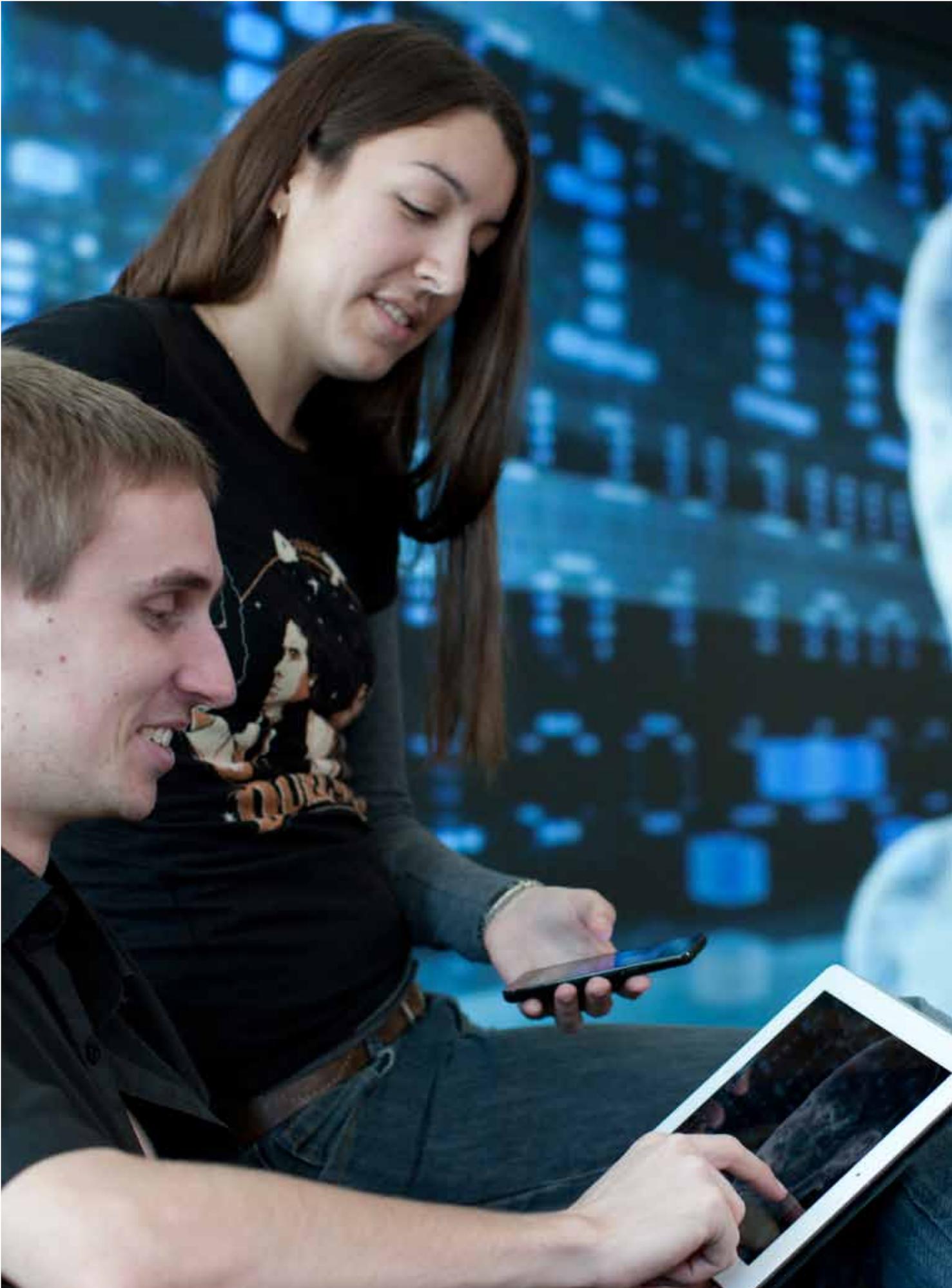
- \$500 textbook allowance each year
- Extended building access
- Access to an accelerated program
- An academic mentor
- Access to an Informatics Faculty research centre determined by interest and degree
- Opportunity for a summer internship
- Free print quota

In addition to the enriched educational experience that this program offers, you will have the opportunity to be the "face" of the Faculty at careers markets and high school visits.

Informatics degrees included in the Dean's Scholar program:

- Bachelor of Business Information Systems page 18
UAC 754510
- Bachelor of Computer Science page 19
UAC 754110
- Bachelor of Engineering page 20
(Computer, Electrical or Telecommunications)
UAC 755630
- Bachelor of Information Technology page 22
UAC 754310
- Bachelor of Mathematics and Finance page 24
UAC 756520
- Bachelor of Medical Mathematics page 25
UAC 756535





SCHOLARSHIPS

Informatics has one of the strongest scholarship programs at UOW. This program of scholarships and prizes has been built by working with a range of commercial and community partners. Together, we help our most academically gifted students achieve their potential.

Faculty partners include:

- Andrew, A Commscope Company
- Australian Nuclear Science and Technology (ANSTO)
- Bluescope Steel
- Engineers Australia, Illawarra / Sutherland Regional Group
- Engineers Australia, Sydney Division Electrical Branch
- Getronics Australia Pty Ltd
- Institution of Engineering and Technology
- Internetrix
- Itree Ltd
- Pen Computer Systems Pty Ltd
- Spruson & Ferguson
- TATA
- Telstra Corporation
- Tibra Captial
- Tyree Industries Pty Ltd
- Visionstream Pty Ltd

Our scholarships include Work Integrated Learning Scholarships (WIL) many of which are treated as recruiting exercises. If you excel in both the practical and the academic components of your scholarship, you may be granted priority in the organisation's graduate recruitment program.

FIRST YEAR SCHOLARSHIPS

Faculty of Informatics – 1st Year UG Scholarships	Value Per Scholarship	Number Offered P/A
University of Wollongong Undergraduate Scholarships	\$4,000 p.a. for duration of degree	3
Faculty of Informatics Scholarships	\$3,000 p.a. for duration of degree	3
Telstra School of Electrical, Computer & Telecommunications Engineering (SECTE) Scholarship	\$8,000 for 1st Year	2
Telstra School of Information Systems & Technology (SISAT) Scholarship	\$8,000 for 1st Year	1
Telstra School of Computer Science & Software Engineering (SCSSE) Scholarship	\$8,000 for 1st Year	1
Telstra School of Mathematics & Applied Statistics (SMAS) Scholarship	\$8,000 for 1st Year	1
Telstra Floating Scholarship	\$8,000 for 1st Year	1
Tibra Capital Scholarship	\$7,000 for 1st Year	2
Mathematics and Statistics First Year Scholarship	\$3,000 for 1 year	1
School of Information Technology & Computer Science (SITACS) First Year Scholarship	\$3,000 for 1 year	1
Women in Electrical, Computer or Telecommunications Engineering	\$3,000 for 1 year	1
Xstrata Coal Electrical Scholarship	\$10,000 p.a. for 4 years	1
State Emergency Services (SES) Scholarship Bachelor of Computer Science	\$10,000 p.a. for 2 years	1
SES Scholarship Bachelor of Information Systems / Bachelor of Information Technology	\$10,000 p.a. for 2 years	1
TATA Consultancy Services	\$5,500 p.a. for 4 years	2

NEXT GENERATION

UOW Informatics graduates are doing amazing things: they're finding solutions, building capacity and bringing the benefits of technology to everyone.



BEN MARELL

BACHELOR OF COMPUTER SCIENCE (DEAN'S SCHOLAR)
WEB APPLICATION SUPPORT, ANSTO

Apple's iOS brought a global audience in the millions and created countless opportunities to a whole new generation of developers—developers like UOW graduate Ben Marell.

Ben studied a Bachelor of Computer Science (Dean's Scholar) at UOW and since graduating in 2011 has been working for the Australian Nuclear Science and Technology Organisation (ANSTO), providing web application support in the IT department. But this is only a part of what Ben does: as well as tutoring a couple of classes a week at UOW, he is working on developing his own iPhone applications.

Studying software development in high school, Ben chose UOW for its reputation. He took the opportunity to be involved with the Apple University Consortium (AUC), a partnership between Apple and Australian universities. Through an AUC scholarship he attended the 2010 Apple Worldwide Developers Conference (WWDC) in San Francisco, the premier technical conference for developers working with Apple technologies.

"It was amazing, I'd never been to America before. The conference was really inspiring, we got to talk directly to a lot of the developers."

Inspired by AUC workshops and his time in America, Ben has already created a number of iPhone apps. He developed iPhone software for a local company in Wollongong during his degree and since graduating he has been commissioned by the UOW Faculty of Informatics to create an app for students to provide feedback on lectures and subjects.

Ben also has a lot of ideas for developing his own apps, but he isn't giving anything away.

"I've got heaps of ideas, but I've picked the few that are the best in terms of marketability and commercial prospects. People tend to think it is all about writing code, but the coding is only a little part of it, before you actually make one you have to do a lot of planning."



WARREN HUDSON

BACHELOR OF INFORMATION & COMMUNICATION TECHNOLOGY (E-BUSINESS MANAGEMENT)
POLITICAL ADVISER TO A MEMBER OF PARLIAMENT

"I've always been interested in politics, I love parliament," reveals UOW graduate Warren Hudson. Sitting inside the walls of NSW Parliament House his words ring true.

Warren was already working at NSW parliament house before he started his degree. Studying the Bachelor of Information and Communication Technology with a major in eBusiness, Warren continued to work part-time allowing him to apply his skills while he was learning.

After graduating Warren got a position full time as a political adviser where he is working in roles varying from media relations to liaising with government ministers to speechwriting and arranging public events.

The challenges of evolving technology are significant and growing every year. Choosing the eBusiness major helped Warren to develop in areas that were important in his area of work.

"Managing innovation, management in a fast changing environment, the technology aspect, the communications aspect:

a lot of the IT content was quite relevant. The work I did in statistics meant that when we would have a huge amount of data to process, I was able to get information in a much shorter time than other staff would be able to do."

UOW proved to be the perfect place for Warren's political passions. Warren was President of one of the political clubs as well as being elected on the WUSA (Wollongong Undergraduate Students Association) for two terms.

"You learn a lot about leadership, you have to attract people to your organisation and make them want to be involved. It's not enough that people just share an ideology, you need to keep it all interesting so that people want to be involved."

Warren's advice for future students interested in politics is that the skills and experience you learn in university can be applied once you graduate no matter what you want to do.

"Pick something that you like doing and the lessons that you learn during your degree you can apply in almost any field."



JESSICA LLOYD

BACHELOR OF COMPUTER SCIENCE – BACHELOR OF CREATIVE ARTS (CREATIVE WRITING)
CHANNELS MANAGER, TECHNOLOGY COMMUNICATIONS WESTPAC GROUP

Working in a communications role for Westpac Group, UOW graduate Jessica Lloyd is benefiting from the advantages of studying a unique double degree combination.

Jessica studied a double degree that combined creative writing with computer science. She explains the appeal of this double was the job security of Informatics while also pursuing her creative side.

“There are such high employment prospects in a computer science degree as well as any of the other informatics degrees, that I could almost guarantee myself a job when I finished.”

Jessica initially joined the Westpac Graduate Program in 2009 on the strength of her computer science qualification, but as time goes on she finds her skills from both degrees complement each other.

“Doing a double degree is great because it gives you skills that you might not get doing a single degree. Having experience in

writing and communications from creative writing gave me an advantage over other graduates.”

In her time at UOW Jessica lived at Campus East for her first year.

“It was great, I ended up living across the hall from someone who I studied with so we could cram together. It was a really good transition going from living at home to living on campus to eventually living on my own.”

Jessica enjoyed variety while she was studying and it is something she has maintained as she has entered the workforce. Her focus may be as a communication officer, but she regularly finds herself in unexpected places from fixing IT issues to helping roll out new software.

“What you choose to study at uni, will help equip you with skills, background and assist you in getting the job you want, but in the end it’s down to you: choosing a career you are interested in.”



LEARN YOUR WAY
CONNECT:
STUDY OPTIONS

DEGREES OVERVIEW

BACHELOR OF BUSINESS INFORMATION SYSTEMS

Focuses on the integration of information systems into business environments through systems analysis, system design and implementation.

BACHELOR OF COMPUTER SCIENCE

Focuses on the science of computer programming including object orientated system design. This degree provides an understanding of the structure of data and the role this plays in delivering solutions to complex problems.

BACHELOR OF ENGINEERING

A four-year accredited qualification in computer, electrical or telecommunications engineering.

BACHELOR OF INFORMATION TECHNOLOGY

Focuses on network design and management, web design and development and e-business solutions. This degree can be customised with one of four areas of major study.

BACHELOR OF MATHEMATICS

A flexible three-year degree that prepares graduates to undertake decision making and problem solving within any sector or industry. It is possible to specialise in mathematics, applied statistics, or a combination of both.

BACHELOR OF MATHEMATICS ADVANCED

An elite three-year mathematics degree for high-achievers which provides students with the opportunity to interact with active academic researchers.

BACHELOR OF MATHEMATICS AND FINANCE

A four-year specialist program that focuses on mathematics, statistics and finance. These three disciplines are increasingly required by leading banking and financial firms who require advanced analytical and numerical techniques to price financial derivatives and manage portfolio risks.

BACHELOR OF MEDICAL MATHEMATICS

A three-year program that develops expertise in advanced modelling and analysis required in the medical sciences sector.

DEAN'S SCHOLAR DEGREES

High-achiever programs with special benefits including possible accelerated learning and academic mentors.

BACHELOR OF BUSINESS INFORMATION SYSTEMS

ATAR	75 / 93 (Dean's Scholar)
DURATION	3 years
STARTS	Autumn (February), Spring (July)
LOCATION	Wollongong
ACCREDITATION	The Bachelor of Business Information Systems is accredited by the Australian Computer Society as meeting requirements for membership at the "Professional level".
UAC	754500 / 754510 (Dean's Scholar)
CRICOS	068718M

Information systems support essential activities in every business and government in the world—they are integral to organisational success.

WHAT YOU WILL STUDY

Your studies will be anchored in systems analysis, design, and implementation of computer programs. In addition to strong interpersonal skills, you will develop a solid understanding of the organisational, social, and data management aspects of business, which will allow you to work effectively in any organisation. You will learn to assess the needs of end-users and effectively communicate these to designers and programmers.

Professional experience

You will undertake an eight-week work placement in one summer session.

CAREERS

A business information specialist can analyse business problems and find possible IT solutions for them. They also develop information systems to meet identified business needs. This could mean running an efficiency audit on a company's information systems; analysing the effectiveness of a file management system or the development of sales and invoicing software. Careers are varied and include building and managing global networks, or managing a systems development project worth millions of dollars.

BACHELOR OF COMPUTER SCIENCE

ATAR	75 / 93 (Dean's Scholar)
DURATION	3 years
STARTS	Autumn (February), Spring (July)
LOCATION	Wollongong
ACCREDITATION	The Bachelor of Computer Science is accredited by the Australian Computer Society as meeting requirements for membership at a "Professional Level".
UAC	Multimedia and Game Development: 754104 Digital Systems Security: 754105 Software Engineering: 754107 Enterprise Systems Development: 754108 Dean's Scholar: 754110
CRICOS	012088K

Computer scientists design and write programs for computer applications. These applications can include computer systems to control machinery, applications for iPads, stock market trend analysis, games design, visualisation of chemical reactions, neural network design, and computational geometry for robot navigation, automatic teller machines and patient monitoring in hospitals and much more.

WHAT YOU WILL STUDY

The core subjects teach you to understand the structure of data and the role it plays in delivering solutions to complex problems. This degree includes a core of programming subjects as well as electives in databases, languages, artificial intelligence, computer security, computer graphics, operating systems, real-time software and software engineering. In third year you'll develop your own application as part of a student team.

You will specialise by choosing one or more of the following majors. You can add flexibility to your qualification by adding a second major, enrolling in a double degree or taking subjects from other disciplines.

DIGITAL SYSTEMS SECURITY

Information Security is becoming increasingly important to business, to government, to consumers and to private citizens. Computer and network security systems and software are growth areas.

ENTERPRISE SYSTEMS DEVELOPMENT

Enterprise systems development focuses on the creation of software systems that use large scale, mixed-platform, distributed computing facilities required by large commercial and government organisations.

MOBILE COMPUTING*

Mobile Computing focuses on the development paradigms, technologies and techniques that deliver mobile content and services. It addresses four key areas within this rapidly changing arena: design for useability principles; distributed systems; internet technology; and mobile application programming. (For more information go to page 10)

MULTIMEDIA AND GAME DEVELOPMENT

This major has been developed in response to the needs of the growing Australian game development industry, where employees require both traditional computer science and creative skills.

SOFTWARE ENGINEERING

This major addresses the software engineering process using an object-oriented approach. You will work in a group that mimics the working environment of the software development industry.

CAREERS

Computer science graduates are in high demand with exceptional career choices in a wide range of sectors. Positions are varied and include: software engineer, project engineer, software consultant, systems architect, senior designer, multimedia designer, systems administrator, games developer, development and test manager.

Computer Scientists and Software Engineers are everywhere, making an impact in business big and small, finance, telecommunications, games and simulations, government, data management, security and surveillance, broadcast, the NBN, water and environmental management and much more.

*Subject to approval

BACHELOR OF ENGINEERING

ATAR	78 / 93 (Dean's Scholar)
DURATION	4 years
STARTS	Autumn (February), Spring (July)
LOCATION	Wollongong
ACCREDITATION	The Bachelor of Engineering Computer and Electrical Engineering is recognised around the world through the Washington Accord.
UAC	Computer: 755621 Electrical: 755622 Telecommunications: 755623 Flexible First Year: 755624 Dean's Scholar: 755630
CRICOS	031273G

Electrical, telecommunication and computer engineers work to design and oversee projects that deliver power, network and broadcast services to millions of people. Drawing on skills from a variety of disciplines, they can implement solutions ranging from microelectronics to industrial power infrastructure; from radio networks to national fibre-optic pipelines.

Ongoing high-quality research has led to the Faculty of Informatics being admitted to the Go8 – Group of Eight Engineering & Associates, the top research faculties in Australia.

WHAT YOU WILL STUDY

As well as thorough specialist training in your chosen area of specialisation (see below), you will learn professional engineering practice from industry experts. You will learn engineering systems and signals; telecommunications engineering including the basics of a communications system, data communications and networks; computer engineering including the basics of computer systems, and digital circuits; electrical engineering including the basics of electrical energy systems. We'll also introduce you to the communication, management and teamwork skills required of professional engineers through a team design activity.

Professional experience

Students in all majors undertake a minimum 12 weeks' industry experience at an approved professional placement.

MAJORS AND FLEXIBLE FIRST YEAR

You can select one of the following majors to specialise your qualification. You can also enrol in the flexible first year program. In the flexible first year, you will study a common core of engineering subjects before deciding which specialisation you want to study.

COMPUTER ENGINEERING

Computer engineers design computers and/or computer systems, hardware and software to control sensors, embedded devices and manufacturing or industrial plants. Specialist expertise in the fields of computer architecture and software design are applied to combine hardware and software solutions to solve practical problems.

What you will study

Electronic engineering, software design, and hardware-software integration, from the development of supercomputers to circuit design. This field of engineering not only focuses on how computer systems themselves work, but how they integrate into the larger picture.

Careers

Computer engineers can choose to work in many areas such as networking, control and automation, multimedia, image processing, machine vision, intelligent systems across a wide range of sectors including manufacturing, telecommunications, government, mining, and finance.

ELECTRICAL ENGINEERING

Electrical engineering focuses on electrical and electronic devices and systems, computer systems, telecommunications, control and electrical power engineering. Electrical engineers play a vital role in renewable energy generation, heavy industry and manufacturing installations, robotics and automation, mining and electrical power distribution.

What you will study

Electricity generation and distribution (including renewable energy), electrical power quality, machines and drives, power electronics, control systems and automation give you the specialist knowledge needed to move into the industry.

It is possible to specialise in any of the following sub-disciplines:

- control engineering focuses on integrated sensors and control systems
- electronics engineering focuses on semi conductors and electronic components in the design and development of engineering systems
- power engineering, dealing with the generation, transmission and distribution of electricity.

Careers

Electrical engineers are sought after professionals for their expertise in the development and application of sustainable electrical and electronic systems across a wide range of sectors.

TELECOMMUNICATIONS ENGINEERING

Telecommunications engineering deals with large-scale data networks, such as the Internet and other devices and systems that represent, store and transmit analog and digital information. This includes data transmission, equipment, customer access technology, analog and digital radio and television systems, satellite communications, global navigation, mobile communications and remote sensing/telemetry systems.

What you will study

You'll be trained to take up roles as telecommunications engineers focusing on the transmission and management of information through channels such as coaxial cable, optical fibres or free space. You will study data communications, control theory digital signal processing and communications systems.

Careers

Telecommunications engineers are responsible for designing and overseeing the installation of telecommunications infrastructure, equipment and facilities, such as complex electronic switching systems, copper telephone facilities, and fiber optics, providing the mechanisms for telephone and high-speed data services.

Telecommunications engineers have skills in designing and managing large-scale and loosely coupled systems, and as such are sought after in many other disciplines outside the telecommunications industry.

BACHELOR OF INFORMATION TECHNOLOGY

ATAR	75 / 93 (Dean's Scholar)
DURATION	3 years
STARTS	Autumn (February), Spring (July)
LOCATION	Wollongong
ACCREDITATION	The Bachelor of Information Technology is accredited by the Australian Computer Society as meeting requirements for membership at the 'Professional level'.
UAC	eBusiness: 754300 Network Design and Management: 754301 Social Policy: 754302 Web Design and Development: 754303 Dean's Scholar: 754310
CRICOS	061445K

A UOW Information Technology degree will provide graduates with the skills to make a company more productive and efficient through the use of IT; to establish an online presence, with e-commerce capabilities. Information technology underpins almost every sector of modern business and leisure.

WHAT YOU WILL STUDY

The focus of this degree is to produce graduates who excel in Network Design and Management, Web Design and Development, E-Business solutions delivery all informed by an understanding of Social Policy. These are the four major areas of study within the BIT which increasingly represent real drivers within organisation today.

Practical experience

Students undertake an eight-week work placement in one summer session.

E-BUSINESS

This major prepares graduates to design, develop and implement e-business capabilities. The capacity to conduct business online is increasingly an essential feature of any organisation's operations.

NETWORK DESIGN AND MANAGEMENT

Every major company in the world now relies on networks to survive. A major in network design and management develops the skills necessary to build or manage networks to support businesses and governments in a competitive global market.

SOCIAL POLICY

Businesses and governments around the world are struggling to develop policies on emergent issues, including privacy, hacking and computer crime. A major in social policy develops an understanding of these and other social issues associated with the growth of Information and Communication Technology (ICT) and the world wide web.

WEB DESIGN AND DEVELOPMENT

Provides the technical knowledge to design and develop effective websites and web applications like shopping carts, online auctions, employee kiosks, online catalogues or social networks. The major also covers issues related to usability and accessibility, navigation, site structure, and information architecture.

CAREERS

IT graduates are in high demand in every industry all over the world. Movies, games and multimedia; radio, television and print media; fashion and decorating; mining and engineering; banking and finance; medicine and healthcare; agriculture, fishing and forestry; resource management and the environment—IT professionals are everywhere.

BACHELOR OF MATHEMATICS

ATAR	75 / 90 (Advanced)
DURATION	3 years
STARTS	Autumn (February), Spring (July)
LOCATION	Wollongong
ACCREDITATION	The Bachelor of Mathematics is accredited by the Australian Mathematical Society.
UAC	756511 / 756512 (Advanced)
CRICOS	002936B / 036040F (Advanced)

Mathematics is the basis for successful decision making and problem solving independent of sector or industry.

Mathematical and statistical models help us analyse and forecast results in economics, finance, medicine and industrial processes. This analysis helps governments and businesses understand the factors behind important decisions. By examining health, social, biological, agricultural and bioinformatics data, mathematical methods drive policy and innovation.

WHAT YOU WILL STUDY

You will learn highly transferable skills in problem solving, data analysis, probability and variability, mathematical modelling, logistics and logic. The degree is flexible, so you can take up to one third of your subjects from other disciplines to expand your career options.

Applied Statistics uses mathematical concepts and methods to develop scientific experiments, sample surveys, medical clinical trials and environmental studies. It uses mathematical models of variation to enable analysis and forecasting in many industries. The School of Mathematics and Applied Statistics at UOW has an international reputation, especially its application to survey and census design and analysis.

The Bachelor of Mathematics Advanced is available to students who have a superior mathematical knowledge on entry to UOW. It allows you to reduce the number of first-year mathematics subjects and replace them with enrichment projects which provide the opportunities to build links with industry and to understand the interaction between mathematics and society. You'll also benefit from a close relationship with active researchers.

CAREERS

Mathematicians work in all areas of industry and government as meteorologists, risk managers, statisticians, investment advisers, biometricians and transport analysts and more. Applied mathematics underpins a number of scientific and commercial enterprises, providing extensive career options. Just about every industry depends at some point on handling and interpreting data, and on predicting and modelling outcomes.

BACHELOR OF MATHEMATICS AND FINANCE

ATAR	82 / 93 (Dean's Scholar)
DURATION	4 years
STARTS	Autumn (February), Spring (July)
LOCATIONS	Wollongong
ACCREDITATION	The Bachelor of Mathematics and Finance is accredited by the Australian Mathematical Society. Completion of this degree provides 'points' towards membership of Financial Services Institute of Australasia (FINSIA). Specific majors may carry other accreditations. The Financial Planning major has been placed on the Australian Securities and Investment Commission's (ASIC) training register. This means that on completion you will satisfy Tier 1 of ASIC's training requirements relevant to a range of advisory activities.
UAC	756503 / 756520 (Dean's Scholar)
CRICOS	016107B

With the sophistication of modern finance products, leading edge banking and financial firms are hiring mathematicians to advance analytical and numerical techniques to price financial derivatives and manage portfolio risks.

Mathematical qualifications are essential in this environment—knowing the principles of finance is not enough. Bankers, investment managers, insurance companies and financial companies all rely on financial mathematics to survive and stay ahead of the competition.

The tools of mathematical analysis and prediction are essential to financial operations. This degree offers you the chance to specialise your skills by selecting one of the majors below.

QUANTITATIVE CORPORATE FINANCE AND INVESTMENTS

Quantitative corporate decision processes may be short-term or long-term. Long-term decisions typically deal with the choice and type of corporate investments, sources of equity or debt funding and financial risk management. Short-term decisions mainly deal with working capital management of short term assets and liabilities.

QUANTITATIVE AND COMPUTATIONAL TRADING

This major provides a solid foundation in mathematical finance and the specialist practical skills necessary to be successful as a quantitative trader. You acquire mathematical, statistical, financial and computer skills to understand, implement and develop computer-driven trading strategies and be able to make informed investment decisions and evaluate portfolio risks.

MATHEMATICAL ECONOMICS

The aim of this major is to provide students with a grounding in the necessary skills for the application of mathematical methods, concepts and reasoning to economic theory and problem solving in both micro-economics and macro-economics. The mathematical foundation includes econometrics, financial and linear modelling and calculus, differential equations, statistics and associated topics.

RISK MANAGEMENT AND INSURANCE

Risk management is now recognised as an essential part of strategic objectives at both personal, corporate and government levels. A strong background in mathematics and statistics is essential for careers in corporate and banking risk management such as market, credit and operational risk. The profession covers a wide range of activities including the assessing, quantifying, monitoring and mitigating of financial risk exposures; and monitoring compliance with financial regulations.

FINANCIAL PLANNING

This major is particularly applicable to those who wish to pursue a career within the financial services industry by gaining professional qualifications in the areas of providing financial planning and financial advice to clients. The areas of service provision are very wide including investment and asset portfolio construction and advice, superannuation, retirement and estate planning and associated services.

CAREERS

Maths and finance graduates work in all areas of industry and government as risk managers, investment advisers, traders, financial analysts, biometricians, transport analysts and more. They work in all aspects of the finance sector from traditional banking to futures trading. Applied mathematics underpins a wide range of scientific and commercial enterprises, providing extensive career options. Just about every industry depends at some point on handling and interpreting data, and on predicting and modelling outcomes.

BACHELOR OF MEDICAL MATHEMATICS

ATAR	85 / 93 (Dean's Scholar)
DURATION	3 years
STARTS	Autumn (February)
LOCATION	Wollongong
UAC	756530 / 756535 (Dean's Scholar)
CRICOS	072790B

The rapid development of medical technology has created a niche sector which relies on the skill sets of mathematicians and statisticians. The Bachelor of Medical Mathematics is a 3-year degree that has been pioneered by UOW in response to the needs identified by the medical and health sectors. For more information, please refer to page 7.

WHAT WILL YOU STUDY

This degree will provide the mathematics and statistics skills required for advanced modelling and analysis applications in medical sciences, as well as a basic background in physiology, chemistry and biology.

CAREERS

Graduates will have the skills needed to pursue careers in mathematics, statistics and medical research and will be suitably prepared for postgraduate studies in medicine, mathematics and allied health professions.

LEARN MORE

INFORMATICS CENTRAL

Phone +61 2 4221 3606

Email informatics-enquiries@uow.edu.au

www.uow.edu.au/informatics

GENERAL ENQUIRIES

www.uow.edu.au/future

Within Australia: 1300 367 869

International: +61 2 4221 3218

uniadvice@uow.edu.au

facebook.com/uowfuture

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