

Science


Creative
thinkers
made here.

2024 Course Guide

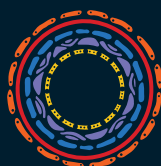
- Bioinformatics
- Chemistry
- Computer Science
- Conservation Biology
- Counter Terrorism Security & Intelligence
- Cybercrime
- Cyber Security
- Data Science
- Environmental Science & Management
- Horticulture
- Information Technology
- Marine & Freshwater Science
- Mathematics
- Physics
- Software Engineering
- Sustainability

Contents

Science at ECU	3
Highlights	4
Work Integrated Learning at the School of Science	6
Bachelor of Science	7
Science at ECU South West	10
Bachelor of Science /Bachelor of Commerce	11
Bachelor of Environmental Science	12
Bachelor of Science (Cybercrime, Security and Intelligence)	13
Bachelor of Science (Cyber Security)	14
Bachelor of Computer Science	15
Bachelor of Counter Terrorism Security and Intelligence	16
Bachelor of Information Technology	18
Postgraduate Courses	19



Creative thinkers
made here.



ECU is committed to reconciliation and supports a Voice to Parliament being enshrined in the Australian Constitution. We recognise and respect the significance of Aboriginal and Torres Strait Islander peoples' communities, cultures and histories. We also acknowledge and respect the Noongar people as the traditional custodians of the land on which our campuses are located.



ecu.edu.au/about-ecu/indigenous-matters



Ranked in the world's
top 100 universities
under 50 years old.



The top public university in Australia
for undergraduate teaching quality
for seven years in a row.



Science at ECU

When it comes to studying computing, security, science and the environment, ECU's teaching and research facilities are world-class. You'll find a range of practical degrees that can lead to distinctly different careers in fields such as biology, bioinformatics, cyber security, computer science, counter terrorism security, physics, information technology, environmental science and management, chemistry, mathematics, data science, horticulture, and more.

Our flexible courses and world-class teaching, combined with our Work Integrated Learning program and close industry links, will provide you with endless possibilities in Australia and internationally.

Rankings

In the 2023 Good Universities Guide, ECU received a 5 Star rating for teaching quality. This rating has now been achieved for 16 years in a row. ECU has also received the following rankings for its science and computing disciplines:

#1 IN AUSTRALIA
COMPUTING & INFORMATION SYSTEMS
Undergraduate Overall Educational Experience,
Good Universities Guide 2023

#1 WA UNIVERSITY
ENVIRONMENTAL STUDIES
Undergraduate Overall Educational
Experience, Good Universities Guide 2023

#1 WA UNIVERSITY
SCIENCE & MATHEMATICS
Undergraduate Overall Educational
Experience, Good Universities Guide 2023

7 reasons to study Science at ECU

Choice

- 1 A range of courses and majors across diverse fields. You'll have the option to study degrees focusing on a specific area, or broader degrees which cover multiple areas within a single discipline.

Industry & career networking

- 2 Students get the opportunity to meet and network with prospective employers, industry representatives and professionals at the Science Annual Careers Events.

International reputation

- 3 ECU is the only Australian university recognised as an International Cybersecurity Center of Excellence, and one of our staff members is a member of the INTERPOL Global Cybercrime Expert Group.

Scholarships

- 4 A range of scholarships valued up to \$15,000, including for high performing school leavers.

Work integrated learning

- 5 Students receive real world experience through placements, internships, industry projects and volunteering.

Industry standard facilities

- 6 Students have access to labs equipped with the latest technology, from state-of-the-art mass spectrometry analytical equipment to the latest in computer technology, including the only multimillion dollar Security Operations Centre at an Australian university.

International opportunities

- 7 International study options available via study tours, student exchange and international internships, as well as the opportunity to study a dual degree and graduate with a degree from UK's University of Portsmouth along with an ECU degree.



Security Operations Centre

Highlights

Computing and Security at ECU

ECU is recognised as a leader in cyber security. Our computing and security courses offer a range of majors to choose from, studying in world-class facilities. Our cyber security research and education team is the best in Australia and highly respected globally. ECU is the only Australian university recognised as an International Cybersecurity Center of Excellence, and also plays a key role in the \$139 million Cyber Security Cooperative Research Centre.



Science at ECU

ECU offers an exciting Bachelor of Science degree covering a broad range of disciplines that give students the opportunity to specialise in a major discipline of study and multi-skill by selecting from a range of optional units, creating a unique graduating skillset to increase their career options.

Students will get the opportunity to learn in a brand new Science building containing multiple super laboratories, the facade of which features the largest permanent periodic table in the world.



Grow your future with a Horticulture major

If the world of plants is your thing, our Horticulture major should be your first pick as part of your ECU Science degree. Horticulturists are experts in the improvement of plant propagation, growth, yields and nutritional value. They also understand how to optimise the quality of fruits, vegetables and flowers, including for economic benefits. Expect lots of lab work and field experiences in this major, as well as engagement with industry professionals.



Aquaria Lab

Science meets Hollywood

ECU marine scientists helped bring the marine environment to life on the big screen using the world-class equipment used by staff and students during the filming of Tim Winton's latest movie *Blueback* which depicts the escalating global climate crisis and the state of the world's oceans. ECU marine scientists lent their field equipment and microscopes as well as provided advice to the film crew to assist in realistically depicting how science is conducted both underwater and on research vessels along the West Australian coast, where filming took place.



Get connected with Science careers events

Students get the opportunity to meet and network with prospective employers, industry representatives and professionals at the School of Science Annual Careers Events. An exciting event, students meet industry professionals, explore the range of career pathways available with representatives from Australia's top employers, and speak to Graduate Program recruiters.



ATAR Outstanding Achievement Scholarships

High performing Year 12 students can now take advantage of ECU ATAR Outstanding Achievement Scholarships valued at \$15,000. These scholarships are available for qualifying students, based on their ATAR. Successful students will receive \$15,000, paid as \$5,000 per year over 3 years, once they become an enrolled student at ECU.



For further details and conditions, please visit ecuworldready.com.au/science

Work Integrated Learning at the School of Science

Work Integrated Learning (WIL) is described in any number of ways across the university sector in Australia, but at its core WIL is any learning activity or program that provides students with industry experience. ECU's School of Science provides a number of WIL opportunities for its students including:

- Short term placements
- Industry embedded placements or internships
- Industry suggested projects completed on-campus
- Industry or community volunteering

Students who meet eligibility requirements can spend their final semester with an industry partner, including commercial, government or not-for-profit employers.

Eligibility requirements vary from course to course and students are encouraged to check with their course coordinator to find out how to avail themselves of WIL opportunities and to make sure they are eligible.

This opportunity prepares you for industry. It will also allow you to get your foot in the door on your path to your dream career and introduces you to networks and potential employers.



“During my final year I undertook a Work Integrated Learning placement at Western Power where I had many opportunities to assist on unique projects.”

Claudia Muller

ECU Counter Terrorism Security and Intelligence graduate

ECU City

Our new campus in the heart of the Perth CBD will represent the future of university education – urban, connected, integrated with business and community – and part of the lifeblood of a thriving city.

ECU City will seamlessly bring together Creative Industries, Business and Technology to deliver a world-class university campus that transforms the city of Perth.



ECU City will be home to:

- Western Australian Academy of Performing Arts (WAAPA)
- Founding Pianos
- Arts, Design and Communications
- WA Screen Academy
- Broadcasting
- Kurongkurl Katitjin, ECU's Centre for Indigenous Australian Education and Research
- Business and Law
- Technology programs from the School of Science
- University Pathway Programs

Located at the heart of Perth's commercial, cultural and entertainment districts, ECU City will feature some of the world's most digitally advanced facilities and labs, which will enable next-generation learning in future technologies.

ECU City will open to students from 2026.



To follow the journey, visit citycampus.ecu.edu.au

Bachelor of Science

Indicative ATAR: 70

Duration: 3 years full-time or part-time equivalent

Availability: JO ML SW OL

Full-time ■ *

Part-time ■ *

* Students studying on the South West (Bunbury) campus can select a major in Conservation Biology or Environmental Management, and can select from a range of optional units. Units undertaken at the South West campus will be delivered as a series of lectures and weekly laboratory classes, supported by technology enhanced learning and digital content. There are also practicum weeks in which fieldwork activities are carried out.

This course provides students the opportunity to engage in high quality studies across a range of science and mathematics disciplines. Students specialise in a single major discipline aligned to their interests and aspirations and select from a range of optional units to broaden their skills and knowledge base. Students also have a great opportunity to gain real world experience through a semester long work integrated learning placement, the only one of its kind in Australia. This course also provides a strong pathway into the Master of Teaching course for those aspiring to become science or mathematics teachers.

Students studying on the South West (Bunbury) Campus can select a major in Conservation Biology or Environmental Management.

Admission Requirements

One or more of the majors in this course has admission requirements. Refer to the major for more information.

Employment Opportunities

Science graduates are employed across a wide range of organisations. These include agrochemical companies, automotive and aerospace industries, banking, computing, consultancies, conservation organisations, defence, education, energy, environmental departments, environmental consulting, export, government, health, healthcare, IT, land and water management, materials, meteorology, mining, natural heritage, parks and gardens, sport, technology, industries deal with conservation of biodiversity, environmental impact assessment and management and rehabilitation of specific ecosystems (such as wetlands, forests, coastlines and arid regions), species conservation programs, environmental planning.

Careers

Analytical Chemist, Environmental Consultant, Data Scientist, Modelling Analyst, Environmental Management Office Horticultural Project Officer, Marine Scientist, Freshwater Biologist, Medical Physicist, Sustainability Practitioner



“In my mind there is no better industry to put your environmental management expertise into practice.”

Scott Hazelden

ECU Environmental Management graduate

Available Majors	JO	ML	SW	OL
Chemistry	■			
Conservation Biology	■		■	
Data Science	■			
Environmental Management	■		■	
Horticulture	■			
Marine and Freshwater Science	■			
Mathematics	■			
Physics	■			
Sustainability	■			



See more course information — ecu.edu.au/courses/M04

MAJORS

Chemistry

This major provides a thorough grounding in analytical chemistry. With a strong emphasis on developing analytical skills and instrumentation, students study diverse methods used to investigate the chemical nature of substances in a range of applications—from pure laboratory analysis to environmental investigations and monitoring and medical applications.

Conservation Biology

This major focuses on knowledge and skills required for the study and management of biodiversity. Students develop the ability to analyse complex interplays between humans and the natural world, and devise approaches to important conservation issues.

Data Science

This major focuses on the numeracy and analytical repertoire of graduates. Graduates will gain statistical expertise in analysing and visualising simple and complex data sets from a variety of sources such as disease markers, genomic and transcriptomic data and business data sets. Graduates will be competitive in the data science job market as it is implemented in computing, business and sciences.



Environmental Management

This major is designed for students who want to develop a specialisation in the area of environmental management, including sustainable management of natural areas and urban landscapes. This major focuses on the multidisciplinary nature of environmental management, equipping students with knowledge and skills across scientific, economic, legal and societal domains. Students gain a grounding in the biological and physical aspects of the environment, and the knowledge and skills used in its management.



Vanessa's story

From Western Australia to Washington State, USA, ECU science graduate Vanessa has had an interesting journey and an exciting career. Soon after graduating from ECU, Vanessa started working at an Environmental Consultancy called Astron, based in Perth but working mainly out of Newman and Karratha. Since then, she's worked for an Environmental Consultancy in the state of Utah (USA), identifying and delineating wetlands and streams and managing groundwater and soil contamination cleanup, as well as for the US Virgin Islands Department of Planning and Natural Resources doing water quality analysis and advising on water quality standards and regulations.

Vanessa credits her ability to excel in different disciplines in environmental science to the breadth of units she studied during her degree. "There isn't a single unit I completed at ECU during my undergrad which hasn't been valuable to me in some way throughout my professional career. I've worked in Australia, the United States and the Caribbean in a myriad of environmental management roles."

Vanessa is now Senior Vice President and Chief of Policy & Compliance at Hamer Environmental, a renowned environmental consulting firm in Washington, USA. Her advice for prospective students? "Environmental Science is an incredibly competitive, but also rewarding career path. Be utterly relentless in the pursuit of real-world experience whilst working on your degree."

Horticulture

This major allows students to develop transdisciplinary knowledge in environmental sustainability, and undertake a relevant project in natural sciences to enrich understandings of ecologically sustainable processes on land and in water. Students will engage with industry to provide a direct link between their university studies and professional practice.

Marine and Freshwater Science

This major is designed for students with an interest in aquatic environments. Students study biological and physical processes that occur in both marine and freshwater systems, and develop skills to enable them to contribute to management and understanding of water-based ecosystems. There is an emphasis on the continuity of these environments across the transition from fresh water to estuarine and marine systems. Students will be able to apply their degree in marine and terrestrial park management, environmental impact assessment, and conservation of marine and freshwater fauna and flora.

Mathematics

This major provides students with a broad base of mathematics skills across the core areas of applied mathematics, including calculus, statistics, mathematical modelling and linear algebra. The applied flavour of the major provides the necessary background for students wishing to pursue higher studies in areas of applied mathematics and statistics. Students whose primary focus is in the biological sciences, physical sciences, business or finance, will also benefit from the development/enhancement of core skills in data analysis and modelling, making mathematics a strong choice as a second and supporting major.

Physics

This major provides students with a thorough background in fundamental and advanced physics with a strong emphasis on scientific instrumentation, measurement and analytical skills.

The major is designed to meet industries' need for capable, dynamic and innovative graduates with well-developed analytical and problem-solving skills and a sound theoretical knowledge in physics. It gives students a hands-on and practical understanding of physics with laboratory-based programs and projects to encourage practical learning.



Sustainability

This major allows students to develop transdisciplinary knowledge in environmental sustainability, and undertake a relevant project in natural sciences to enrich understandings of ecologically sustainable processes on land and in water. Students will be able to apply these understandings to nature conservation, impact assessment and natural resource management. Studies will include an emphasis on field-based exercises and workplace learning.



“I’ve always had an interest in the environment and chose ECU because it offers hands-on, job ready degrees.”

Kendra Campbell
ECU Marine and Freshwater Biology graduate

Science at ECU South West

The Bachelor of Science is also offered at ECU's South West Campus in Bunbury.

This course focuses on the multidisciplinary nature of environmental management and the conservation of biodiversity. It offers a balance between theory and practical learning with many fieldwork opportunities available in the environmentally diverse South West region. In addition, the internships and work integrated learning opportunities prepare graduates for careers in government agencies and other organisations that deal with the conservation of biodiversity, environmental impact activities, planning and management, many of which already have a presence in the region.

With state-of-the-art equipment and a course structure that mirrors what is offered at ECU Joondalup, South West students are guaranteed a quality tertiary education, with the ability to easily transition between campuses if desired. Scholarships are available for those interested in studying this course in the South West.

→ See ecu.edu.au/ecu-south-west for further details.



“I moved here from Germany and have enjoyed my study experience at ECU. Being on a small campus (Bunbury) has made transitioning to Australia easier.”

Georgina McGiveron
ECU Environmental Science & Conservation
Biology graduate





Bachelor of Science / Bachelor of Commerce

Indicative ATAR: 70

Duration: 4 years full-time or part-time equivalent

Availability: JO ML SW OL

Full-time	■			
Part-time	■			

This double degree equips students with the theory, practical experience, and employability skills to become business professionals and scientists. Researching, analysing and explaining interactions between people, business and their environments are examples of skills that are developed. Practical experience in leadership, teamwork, self-assessment, critical thinking, communication and problem-solving improve career perspectives, providing an industry-relevant learning experience that meets the needs of a variety of complex, competitive and dynamic global environments.

Admission Requirements

One or more of the majors in this course has admission requirements. Refer to the major for more information.

Employment Opportunities

Graduates of this double degree will contribute to the development and marketing of products and services which utilise and extend Australia's strong scientific, technological and commercial expertise. It will prepare you to fulfil the financial potential of scientific discoveries and apply commercial knowledge in research environments.

Careers

Sustainability Officer, Climate Change Adaptation Manager, Scientific Consultant, Government Scientist, Scientific Adviser, Horticultural Scientist, Business Manager, Business Consultant/Adviser, Marketing Officer



See more course information — ecu.edu.au/courses/W27

Students can also choose from the following double degrees:

Bachelor of Arts / Bachelor of Science

(Course Code W58)

For more information please refer to the Arts and Humanities Course Guide or visit ecu.edu.au/courses/W58

Bachelor of Engineering Honours / Bachelor of Science

(Course Code W32)

For more information please refer to the Engineering and Technology Course Guide or visit ecu.edu.au/courses/W32

Bachelor of Engineering (Computer Systems) Honours / Bachelor of Computer Science

(Course Code Y64)

For more information please refer to the Engineering and Technology Course Guide or visit ecu.edu.au/courses/Y64

Bachelor of Environmental Science

Indicative ATAR: 70

Duration: 3.5 years full-time or part-time equivalent

Availability: JO ML SW OL

Full-time	■			
Part-time	■			

Secondary Location

The first two years are delivered by Edith Cowan University on the Joondalup Campus. The third year is delivered by the University of Portsmouth in the United Kingdom on campus, and the final semester is delivered by Edith Cowan University on the Joondalup Campus.

This International Dual Degree provides you with an opportunity to gain valuable international experience while receiving two degrees. Graduates will receive both a Bachelor of Environmental Science from ECU and a BSc (Hons) Environmental Science and Management from the University of Portsmouth (UK).

Students gain a grounding in the biological, chemical, physical and social aspects of the environment, and the knowledge and skills used in its management. The course draws on the cross disciplinary knowledge and skills across ECU and the University of Portsmouth to facilitate the pursuit of a career across the broad employment domains of environmental science and management and takes advantage of the specialisations each university offers. Students will spend their third year at the University of Portsmouth undertaking fieldwork in the Mediterranean amongst other subjects, developing resilience, independence and an international outlook.

Employment Opportunities

The strong management focus of this course prepares graduates for careers in government agencies and industries which deal with conservation of biodiversity, environmental impact assessment, environmental planning and the management and rehabilitation of specific ecosystems such as wetlands, forests, coastlines and arid regions.

Careers

Sanctuary Manager, Catchment Officer, Ecotourism Officer, Natural Resource Officer, Environmental Management Officer, Conservation Field Officer, Land Management Officer, Environmental Consultant, Landcare Officer



See more course information —
ecu.edu.au/courses/W89



Science Facilities,
University of Portsmouth



Student life,
Portsmouth

Dual Degrees at ECU and the University of Portsmouth

ECU and the University of Portsmouth (UK) are working in partnership to provide students a truly global educational experience while receiving two degrees.

Based between both universities, students will study for a dual degree in less time than it would take to study both degrees consecutively.

Students benefit from the teaching expertise, research and facilities of both institutions, expanding their life experience, and benefiting from studying their chosen field in an international context.



For more information visit —
ecu.edu.au/uni-portsmouth





Aerial view of Portsmouth

INTERNATIONAL DUAL DEGREE

Bachelor of Science (Cybercrime, Security and Intelligence)

Indicative ATAR: 70

Duration:	3.5 years full-time or part-time equivalent			
Availability:	JO	ML	SW	OL
Full-time	■			
Part-time	■			

Secondary Location

The first two years are delivered by Edith Cowan University on the Joondalup Campus. The third year is delivered by the University of Portsmouth in the United Kingdom on campus, and the final semester is delivered by Edith Cowan University on the Joondalup Campus.

This International Dual Degree program provides you with an opportunity to gain valuable international experience while receiving two degrees. Graduates will receive both a Bachelor of Science (Cybercrime, Security and Intelligence) from ECU and a BSc (Hons) Counter Terrorism, Intelligence and Cybercrime from the University of Portsmouth (UK).

The course prepares graduates to work across the broad security and crime prevention employment domains at the national and international levels. Students will be introduced to the concepts of security risk management, security technology in the protection of assets, counterterrorism, crime prevention and cyber crime.



Computing Facilities,
University of Portsmouth

The degree draws on cross disciplinary knowledge and skills from both universities to develop graduates for careers across the broad employment domain of security, crime prevention, law enforcement and community safety (community security).

Employment Opportunities

Graduates can access careers in national security, corporate security, defence, intelligence, government, policing and law enforcement, homeland security, justice, criminology, critical infrastructure protection, threat and risk assessment, security consultancy, corporate intelligence, counter terrorism, and security analysis.

Careers

Security Analyst, Security Manager, Intelligence Analyst, Counter Terrorism Consultant, Security Consultant, Security and Risk Manager, Intelligence Officer, Strategic Risk Analyst, Security Profiler, Intelligence Profiler

→ See more course information — ecu.edu.au/courses/W87



Bachelor of Science (Cyber Security)

Indicative ATAR: 70

Duration:	3 years full-time or part-time equivalent			
Availability:	JO	ML	SW	OL
Full-time	■			■
Part-time	■			■

Focuses on the practical and theoretical dimensions of cyber security across a range of fundamental areas, such as network security and vulnerability assessment, information security policy and governance, digital forensics, and ethical hacking. Students will gain a solid grounding in conventional computer and network security concepts and skills. In addition, the course is designed to meet the changing landscape of secure computing, which involves not only computers, but also network enabled devices such as smartphones, tablet devices, and Internet of Things (IoT).

Professional Recognition

Australian Computer Society (ACS) have accredited this course.

Employment Opportunities

This course prepares students for careers in the field of cyber security, including areas such as network security, digital forensics, vulnerability assessment, security risk assessment, penetration testing, threat hunting, and incident response.

Careers

Cyber Security Analyst, Cyber Security Officer, Technical IT Security Officer, Network Security Engineer, Digital Forensic Practitioner (Acquisition and Analysis), Information Security Auditor, Information Security Analyst, Security Consultant, Software Auditor

➔ See more course information — ecu.edu.au/courses/Y89



“The knowledge I have gained from ECU has been a fantastic foundation for me in the workforce.”

Soumita Kale
ECU Cyber Security student



Bachelor of Computer Science

Indicative ATAR: 70

Duration: 3 years full-time or part-time equivalent

Availability:	JO	ML	SW	OL
Full-time	■			■
Part-time	■			■

Focuses on the practical and theoretical dimensions of computer science, and prepares students for careers in the fields of computing and software development. The course emphasises critical thinking and problem solving alongside discipline knowledge and skills, providing students with the opportunity to undertake complex computer science projects both independently and in teams.

Students are introduced to concepts including programming, mathematics, networking, databases and security in their foundation year, before specialising in an area of computer science. Advanced topics in computer science, including artificial intelligence and distributed computing, are studied alongside the chosen area of specialisation.

Professional Recognition

Australian Computer Society (ACS) have accredited this course.

Employment Opportunities

This course prepares graduates for a range of careers via practical experience in analysing and solving real world problems in computer science and related disciplines, underpinned by strong theoretical concept knowledge. Over the course of the degree students have the opportunity to undertake international study tours, work integrated learning and internships in their chosen field.

Careers

Computer Programmer, Computer Support Officer, Application Developer, Mobile Application Developer, Systems Analyst, e-Commerce Developer, Software Engineer, Software Designer, Project Manager



Available Majors:	JO	ML	SW	OL
Cyber Security	■			■
Software Engineering	■			■

→ [See more course information —
ecu.edu.au/courses/U65](https://ecu.edu.au/courses/U65)

MAJORS

Cyber Security

This major focuses on both the practical and theoretical dimensions of cyber security across a range of fundamental areas. These include network security and vulnerability assessment, information security, digital forensics, cryptography and ethical hacking.

Software Engineering

This major reflects the modern engineering approach to developing software. It covers all areas of the systems development life-cycle, including analysis, design, implementation and testing.



“During my internship at IBM I got to work on and develop products that are already being used by the client now.”

Jakub Antoniewicz
ECU Computer Science graduate



Bachelor of Counter Terrorism Security and Intelligence

Indicative ATAR: 70

Duration:	3 years full-time or part-time equivalent			
Availability:	JO	ML	SW	OL
Full-time	■			■
Part-time	■			■

Brings together the key aspects of national and international security with an emphasis on contemporary security issues. By studying the core elements of terrorism, security and intelligence in the foundation year, students are able to undertake specialised study in how to counter the terrorist threat, apply intelligence gathering techniques, think critically, analyse and understand criminal motivation.

Students will learn to utilise suitable technology to secure assets, protect critical and national infrastructure and employ security management techniques to achieve desired security outcomes.

Employment Opportunities

Graduates can access careers in national security, corporate security, defence, intelligence, government, policing and law enforcement, homeland security, justice, criminology, critical infrastructure protection, threat and risk assessment, security consultancy, corporate intelligence, counter terrorism, and security analysis.

Careers

Security Analyst, Security Manager, Intelligence Analyst, Counter Terrorism Consultant, Security Consultant, Security and Risk Manager, Intelligence Officer, Strategic Risk Analyst, Security Profiler, Intelligence Profiler

Available Majors:	JO	ML	SW	OL
Aviation	■			
Criminology	■			■
Cyber Security	■			■
Data Science	■			
Historical and Political Studies		■		■
Law in Business	■			■
Management	■			■
Professional Studies	■			■



See more course information — ecu.edu.au/courses/Y14

MAJORS

Aviation

Recommended for students who wish to enter the aviation industry in non-flying roles. This major provides a broad professional education and introduction to the core industry activity of flying people and freight from point-to-point.

Criminology

Recommended for students with an interest in criminology and justice. This major will provide an understanding of the criminal justice system, offenders, policing and corrections in a contemporary environment. It also includes skills required for employment, such as Indigenous cultural responsiveness.

Cyber Security

This major focuses on both the practical and theoretical dimensions of cyber security across a range of fundamental areas. These include network security and vulnerability assessment, information security, digital forensics, cryptography and ethical hacking.

Data Science

Focuses on the numeracy and analytical repertoire of graduates. Graduates will gain statistical expertise in analysing and visualising simple and complex data sets from a variety of sources such as disease markers, genomic and transcriptomic data and business data sets. Graduates will be competitive in the data science job market as it is implemented in computing, business and the natural sciences.

Historical and Political Studies

History and Politics address some of the most important and contentious issues facing humanity. In this major, students will examine the ideas, structures and processes that drive society at both the national and international level. One of the primary focuses of this course is the historical and political processes and patterns that have structured the relationship between individuals and communities. The unit explores the nature of contemporary political challenges and the role of leadership, the media, corporate interests, public opinion and grassroots political movements in framing and addressing these challenges. In addition there is a focus on the role understanding our history can play in informing solutions to these issues.

While the focus is global, thematic and interdisciplinary, specialist units are offered in Australian, European and Chinese politics. The major offers students the opportunity to build links between pressing contemporary issues that are impacting on global politics and international relations. These are contextualised through a historical lens that situates the discipline as a rigorous, evidence-based approach among multiple narratives that helps frame our understanding of politics and history.

[This major can also be studied in the Bachelor of Arts and related double degrees.](#)

Law in Business

No industry can escape the legal context in which all businesses and organisations must operate. Having a sound understanding of commercial law and the ability to manage legal risk is a skill valued by employers both in the private and public sector. Students will study the foundations of law including legal framework, legal process, legal writing and research, torts and trade practices, competition and consumer protection law. Students can then tailor the major to suit their area of interest with three electives including property, employment, banking, mining, international trade and intellectual property, among others. While this major does not qualify students to become practising lawyers, graduates will qualify for entry to Bachelor of Laws (Y11) after completing the first year core units with a credit transfer for the professionally accredited law units already studied within the last 10 years.

[This major can also be studied in the Bachelor of Commerce and related double degrees.](#)



“My work integrated learning placement was with the Western Australia Police Force as a Security and Risk Support Officer. I absolutely loved my time at WA Police and remain in contact with my former supervisor and colleagues.”

Leah Armand
ECU Counter Terrorism Security and Intelligence graduate

Management

The world needs leaders like never before. This major teaches you the skills to take the lead and succeed in managerial positions in any business. There is a focus on organisational behaviour, human resource management, ethics, leadership and strategy to help you navigate the future of commerce.

You'll develop skills in critical and innovative thinking, problem-solving, teamwork and communications to open doors to a variety of employment options.

[This major can also be studied in the Bachelor of Commerce and related double degrees.](#)

Professional Studies

Aimed towards enhancing students' employability upon graduation by augmenting core security knowledge and academic skills with professional employability requisites. Students undertaking this major will study units relating to the corporate environment, including management, business analytics, governance and project management. They will then be placed with one of ECU's business and industry partners for a semester to undertake a real world project that will meet specific corporate security objectives, consequently enhancing employability opportunities post-graduation through the delivery of a real-world security project/projects.



Bachelor of Information Technology

Indicative ATAR: 70

Duration:	3 years full-time or part-time equivalent			
Availability:	JO	ML	SW	OL
Full-time	■			■
Part-time	■			■

Focuses on the practical and theoretical dimensions of information technology, and prepares students for careers in the fields of information technology, IT management and cyber security.

The course places an emphasis on critical thinking and problem solving alongside discipline knowledge and skills, providing students with the opportunity to undertake complex information technology projects both independently and in teams. Students are introduced to concepts including programming, mathematics, networking, databases and cyber security in their foundation year, before developing advanced skills in information technology, including web development, data management and visualisation in an enterprise context, IT security management and project management.

Professional Recognition

Australian Computer Society (ACS) have accredited this course.

Employment Opportunities

This course prepares graduates for a range of careers via practical experience in analysing and solving real world problems in information technology and related disciplines, underpinned by strong theoretical concept knowledge. Over the course of the degree students have the opportunity to undertake international study tours, work integrated learning and internships in their chosen field.

Careers

Computer Support Officer, Systems Analyst, IT Consultant, Systems Administrator, Software Support Officer, Project Manager, Systems Integrator, Data Analyst



See more course information —
ecu.edu.au/courses/U67



“My work placement in my final semester helped get my career off to a great start.”

Paige Chapman
ECU Information Technology graduate

Postgraduate Courses

The School of Science offers a diverse range of industry-relevant courses in the areas of environmental sciences, mathematics, physics, computing & security, cyber security and other sciences. Our courses are informed by an active research program, with the school being home to diverse research groups covering natural sciences, mathematics, physics, computing, security and technology. Our research aims to find positive solutions to real-world problems related to the environment and the way we live and work.

Research

For researchers we offer:

Honours programs (1 year*)

A mixture of some specialist coursework units and a major research thesis.

Masters programs (2 years*)

A major research project resulting in a thesis, plus some specialist coursework units.

PhD programs (3 years*)

A substantial research project and thesis, available for any research in a range of fields.

PhD programs – Integrated (4 years*)

A substantial research project and thesis, available for any research in a range of fields. ECU encourages interdisciplinary research that may span multiple research fields and Schools.

*Full-time or part-time equivalent.

Research Postgraduate Courses

- Bachelor of Computing and Security Honours
- Bachelor of Science Honours
- Master of Computing and Security by Research
- Master of Science by Research
- Doctor of Philosophy
- Doctor of Philosophy (Integrated)



Coursework

For those with degrees in any discipline (or the required amount of relevant work experience) seeking to upgrade skills or gain qualifications in a new discipline, we offer Graduate Certificate (0.5 years*), Graduate Diploma (1 year*) and Master (2 years*) courses. These flexible courses have been designed to meet the needs of industry, government and consulting sectors.

We offer a range of entry pathways into these programs including a cognate entry for students who already have a related undergraduate degree, allowing you to complete your Coursework Masters program in just 1.5 years.

Coursework Postgraduate Courses

The following postgraduate coursework courses are on offer:

- Graduate Certificate of Cyber Security
- Graduate Certificate in Data Science
- Graduate Certificate in Environmental Assessment and Management
- Graduate Diploma in Environmental Science
- Master of Bioinformatics
- Master of Computer Science
- Master of Cyber Security
- Master of Data Science
- Master of Environmental Science
- Master of Horticultural Science



See more course information —
ecu.edu.au/degrees/study-areas/science



“Being recognised for your hard work and dedication to your studies is very rewarding.”

Lance D'Antoine
ECU Cyber Security graduate

Life as a student

It doesn't matter if you've just left high school or you haven't been a student for a few years, study at uni is a whole new world. The good news is, no matter what your study challenges, we're ready to help you succeed.

Adjusting to study whatever your situation

At ECU, we'll support you through your studies whatever your personal circumstances. This includes if you have a medical condition or disability or have responsibilities for caring for a family member in a similar situation.

It might also include ensuring you can continue to observe any cultural or religious practices.

Our Access and Inclusion team will work with you to identify reasonable adjustments to your study and uni life. They'll also provide ongoing support to you through an individual Learning Access Plan.



Adjusting to academic life

Learning at university can be a bit daunting to begin with, but we've got you covered whatever help you need.

That includes help with preparing assignments, help with researching or referencing, help with online study and loads more. You even get a peer mentor in your first semester!





Career advice and job skills

You can get support and resources to help you plan your future career, as well as find work or volunteering experience while you're a student.

This includes career-based workshops, industry events, one-to-one career advice and more.

Free counselling service

If you need to discuss any personal issues that may be affecting your ability to study, we have a free, professional and confidential psychological counselling service.

Sports and Gyms

Being physically active positively stimulates your student brain and helps you reduce the stress of assignment deadlines or exams.

So, it's a good thing that our campuses have terrific sports and gym facilities. You can also join group fitness classes, social sports teams or attend regular healthy activities like yoga classes.

Student health services

The ECU campuses in Joondalup and Mount Lawley have student health centres with doctors (GPs), and nurses to assist you if you need them. The services are covered by Medicare or Overseas Student Health Funds so most visits are free or low cost.



What pathway can you take into ECU?

If you don't have an ATAR, or you do but got a lower ATAR than expected, you still have pathway options into university courses.

For some of these pathways, you may need to have completed WACE.



Watch a short video on pathways to ECU — youtu.be/p1UUREajlNI

University Preparation courses

This is a pathway we recommend to students who didn't get an ATAR, or didn't get the ATAR they had hoped for. UniPrep courses are free too.

UniPrep is either a standard uni semester course or one of two intensive courses – UniPrep Accelerate for 4 weeks in January and UniPrep Summer from November to January.



Read more about UniPrep — ecu.edu.au/degrees/uniprep

Experience Based Entry

If you don't have an ATAR (or had a near-miss) or any VET qualifications, like a Cert IV, this could be your way into university.

You'll need to include a letter telling us about your goals and why you want to go to uni as part of your application, along with references.



Read more about Experience Based Entry — ecu.edu.au/future-students/course-entry/experience-based-entry-scheme

Diploma or Cert IV Entry

If you've completed or started a VET course at a TAFE or another training organisation since high school, you might also have a pathway to uni.

If you completed a Diploma or an Advanced Diploma you may be eligible to go straight into an undergraduate course.



To read more about all pathways — ecu.edu.au/degrees/pathways

How to apply

Application options can vary, depending upon your situation and your chosen pathway.

Australian universities have 4 standard categories that cover student applications.

These are:

- Recent secondary education (typically most school leavers)
- Work and life experience (usually mature age students who've been working)
- Vocational education and training (VET) (think TAFE students)
- Higher education student (people who've got a degree or done a bridging course)

We won't try to explain these in this space, but we suggest you visit our Applying page and see which category is your best fit.

The page also details your different entry requirements and options.

→ [Everything about applying is here —
ecu.edu.au/future-students/applying](https://ecu.edu.au/future-students/applying)

If you'd rather talk to us about applying for courses, we'd love to hear from you. Call 134 328 or drop into your nearest ECU campus.



Become an ECU student in 6 steps

- 1 Choose your course.**
Consider having a back-up course in case you've applied for a popular course, and it's oversubscribed. You can apply for up to 3 courses at once.
- 2 Check entry requirements.**
Some courses have special admission or 'inherent' requirements so check these too.
- 3 Check the application date.**
Don't miss the deadline for your chosen course/s.
- 4 Apply for a scholarship.**
These are awarded to all kinds of people, not just high achievers. You can do this when you apply for a course.
- 5 Have your paperwork ready.**
You'll need scanned copies of other qualifications, your résumé or other required paperwork ready to upload.
- 6 Accept your offer.**
If you're successful, we'll send you an offer of a place. We hope you accept it and become an ECU student!

Every effort has been made to ensure that the information in this publication is correct at the time of production. The information is subject to change from time to time and the University requests the right to add, vary or discontinue courses and impose limitations on enrolment in any course. The publication constitutes an expression of interest and is not to be taken as a firm offer or understanding. This publication is intended for Australian citizens and permanent residents only. Some information contained in this publication may not be applicable to international students.

GREENING ECU: Edith Cowan University is committed to reducing the environmental impact associated with its operations by conducting its activities in a socially and environmentally responsible manner. This includes implementing strategies and technologies that minimise waste of resources and demonstrate environmentally sensitive development, innovation and continuous improvement.




Unlock your superpower.



**Creative thinkers
made here.**


CRICOS Provider No. 00279B | RTO Code 4756
TEQSA ID PRV12160, Australian University

Contact

 +61 8 6304 0000
(For calls outside Australia)

 ECU.EDU.AU

Find us at


 [ecujourney](https://www.facebook.com/ecujourney)

 [edithcowanuni](https://twitter.com/edithcowanuni)

 [edithcowanuniversity](https://www.youtube.com/edithcowanuniversity)

 [edithcowanuniversity](https://www.instagram.com/edithcowanuniversity)

 [edithcowanuni](https://www.tiktok.com/edithcowanuni)

 [school/edith-cowan-university](https://www.linkedin.com/school/edith-cowan-university)