

Bachelor of Engineering (Honours) (ETB001.2)

Please note these are the 2024 details for this course

Domestic students

Selection rank	60
	Note: The selection rank is the minimum ATAR plus adjustment factors required for admission to the program in the previous year. This is an indicative guide only as ranks change each year depending on demand.

English language requirements	An IELTS Academic score of 6.5 overall, with no band score below 6.0 (or equivalent). View IELTS equivalences
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Duration	4.0 years
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UAC code	365016
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Faculty	Faculty of Science and Technology
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Discipline	Academic Program Area - Technology
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Location	UC - Canberra, Bruce
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Fees 

Per Unit	Per Annum	Full Course
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International students

Academic entry requirements	To study at UC, you'll need to meet our academic entry requirements and any admission requirements specific to your course. Please read your course admission requirements below. To find out whether you
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meet UC's academic entry requirements, visit our [academic entry requirements page](#).

[View UC's academic entry requirements](#)

English language requirements An IELTS Academic score of 6.5 overall, with no band score below 6.0 (or equivalent).
[View IELTS equivalences](#)

CRICOS code 099434M

Faculty Faculty of Science and Technology

Discipline Academic Program Area - Technology

Location UC - Canberra, Bruce

Duration 4.0 years

Fees 

Per Unit

Per Annum

Full Course

About this course

Engineer the future you've always dreamed of

Gain the knowledge, skills and experience to design and build the robotic, AI or Networking future you've always dreamed of creating with the highly respected UC Bachelor of Engineering (Honours).

Held over four years this course is has been created to help those students interested in exploring a career in either Robotics and Artificial Intelligence and/or Network and Software Engineering by creating a platform from which to choose your specialisation.

- Robotics & Artificial Intelligence - this specialisation offers conceptual grounding in intelligent systems with the opportunity to apply theoretical knowledge in a practical setting through direct access to humanoid robots, robotic arms, wheeled platforms and other hi-tech robotic equipment.
- Network and Software Engineering - in this course you will gain in-depth knowledge and skills in the design,

development and operation of software-based networked systems, including mobile and wireless data communications networks, network security applications and services relating to cloud computing, big data and multimedia networks.

Study a Bachelor of Engineering (Honours) at UC and you will:

- gain highly desirable knowledge and skills in a future proof industry
- work with the latest computer aided software.
- learn how to design systems from the ground up
- become proficient in engineering research, design and management
- contribute your own ideas during site visits field work
- participate in numerous Work Integrated Learning (WIL) opportunities
- learn professional ideologies such as professional ethics, expectations and teamwork
- choose to specialise in either Robotics and Artificial Intelligence or Network and Software Engineering.
- be able to participate in the Engineers without Borders Challenge
- gain unrivalled access to industry and government stakeholders
- build extensive professional networks
- earn a globally recognised qualification
- be in-demand

Work Integrated Learning (WIL)

WIL is an integral component of the Bachelor of Engineering (Honours) course as it offers students the opportunity to gain valuable hands-on experience and build professional relationships through real work, or work-like placements.

As part of this course students will be invited to also participate in the Engineers without Borders Challenge which is a humanitarian-focused activity offered in all UC engineering honours degrees.

To ensure our students have access to the right people and places, UC works hard to foster close industry connections and regularly engages with industry partners who possess both the skills and experience to provide specialised knowledge and training opportunities.

All course content is reviewed annually by our Course Advisory Group which is made up of a panel of highly qualified and respected industry experts.

Career opportunities

Whether you're pursuing a career in robotics and AI, or wish to specialise in Network and Software Engineering, The UC Bachelor of Engineering (Honours) offers a natural progression into any one of the following careers:

- cyber security engineer
- network architect
- chief technology officer
- artificial intelligence engineer
- robotics engineer
- data scientist
- business intelligence analyst

- data analyst
- software engineer
- network engineer
- ICT manager

Professional accreditation

This course will pursue accreditation with Engineers Australia at Professional Engineer level and also with the Australian Computer Society at Professional level.

Admission requirements

Admission to this course is based on an entrance rank. A rank can be achieved by the following means:

- Year 12 ATAR
- other Australian Qualification
- work experience
- overseas qualification

We also offer a number of entry initiatives that give you the opportunity to gain entry to the University via alternate pathway programs and admissions schemes.

More information is available on our Alternative Entry page: <http://www.canberra.edu.au/future-students/applications/apply-now/alternative-entry>

Additional admission requirements

Year 12 Mathematical Methods (T) or equivalent.

Assumed knowledge

Basic knowledge and skills in ICT (Information and Communication Technology); Basic numeracy and literacy skills.

Periods course is open for new admissions

Year	Location	Teaching period	Teaching start date	Domestic	International
2024	UC - Canberra, Bruce	Semester 1	05 February 2024	✓	✓
2024	UC - Canberra, Bruce	Semester 2	29 July 2024	✓	✓

Credit arrangements

There are currently no formal credit transfer arrangements for entry to this course. Any previous study or work experience will only be considered as part of the application process in accordance with current [course rules and university policy](#). Credit is not permitted

towards completion of a graduate certificate.

Course requirements

Bachelor of Engineering (Honours) (ETB001) | 96 credit points

Required - 57 credit points as follows

[Expand All](#) | [Collapse All](#)

Core Major in Engineering (57cp) (CM0032) | 57 credit points

Required - Must pass 57 credit points as follows

- Introduction to Information Technology (4478) | 3 credit points – Level 1
- Discrete Mathematics (6698) | 3 credit points – Level 1
- Introduction to Computer Engineering (8223) | 3 credit points – Level 1
- Electronics Systems (8224) | 3 credit points – Level 1
- Signals and Systems (8235) | 3 credit points – Level 3
- Information & Communication Technology Project (9785) | 6 credit points – Level 3
- Technology and Engineering Management (9789) | 3 credit points – Level 3
- ICT and Engineering Research Methods (9826) | 3 credit points – Level 4
- Digital Signal Processing (10003) | 3 credit points – Level 3
- Engineering Project (Part A) (10004) | 6 credit points – Level 4
- Engineering Project (Part B) (10005) | 6 credit points – Level 4
- Engineering Work Experience (Ocp) (10006) | 0 credit points – Level 4
- Engineering Mathematics (10087) | 3 credit points – Level 1
- Technological Innovation and Entrepreneurship (11408) | 3 credit points – Level 2
- Introduction to Network Engineering (11485) | 3 credit points – Level 1
- Professional Practice in Engineering (11519) | 3 credit points – Level 1
- Introduction to Cyber Security (11906) | 3 credit points – Level 1

Restricted Choice - Must select 1 of the following

Specialist Major in Robotics and AI (Engineering) (SM0062) | 36 credit points

Required - Must pass 36 credit points as follows

- Software Technology 1 (4483) | 3 credit points – Level 1
- Database Design (5915) | 3 credit points – Level 1

Designing Human-Computer Interaction (6389) | 3 credit points – Level 2

Soft Computing (7168) | 3 credit points – Level 3

Wireless Networks (8227) | 3 credit points – Level 2

Foundations of Robotics (11370) | 3 credit points – Level 2

Computer Vision and Image Analysis (11376) | 3 credit points – Level 3

Advanced Robotics (11479) | 3 credit points – Level 3

Pattern Recognition and Machine Learning (11482) | 3 credit points – Level 3

Network Architecture (11484) | 3 credit points – Level 3

Systems Analysis and Modelling (11486) | 3 credit points – Level 1

Internet of Things (11511) | 3 credit points – Level 3

Specialist Major in Network Engineering (SM0087) | 33 credit points

Required - Must pass 33 credit points as follows

Software Technology 1 (4483) | 3 credit points – Level 1

Database Design (5915) | 3 credit points – Level 1

Wireless Networks (8227) | 3 credit points – Level 2

Enterprise and Cloud Computing (9281) | 3 credit points – Level 3

High Speed Networks (9783) | 3 credit points – Level 4

Network Architecture (11484) | 3 credit points – Level 3

Systems Analysis and Modelling (11486) | 3 credit points – Level 1

Software Systems Architecture (11491) | 3 credit points – Level 3

Mobile Technologies (11492) | 3 credit points – Level 3

Internet of Things (11511) | 3 credit points – Level 3

Advanced Cyber Security (11907) | 3 credit points – Level 3

- The course award is determined by the selected specialist major. E.g. Completing the Robotics & AI major leads to the Bachelor of Engineering (Honours) in Robotics & AI award name.

Open Electives - Must pass between 3 and 6 credit points as follows

- Network Engineering Specialisation: Students must pass 6 credit points from anywhere in the University.

- Robotics and AI Specialisation: Students must pass 3 credit points from anywhere in the University.

In addition to course requirements, in order to successfully complete your course you must meet the inherent requirements. Please refer to the [inherent requirements statement](#) applicable to your course

Typical study pattern

UC - Canberra, Bruce

Standard Full Time, Semester 1 Commencing with Network Engineering Specialisation

Year 1

Semester 1

Database Design (5915)

Discrete Mathematics (6698)

Introduction to Information Technology (4478)

Introduction to Network Engineering (11485)

Semester 2

Engineering Mathematics (10087)

Introduction to Computer Engineering (8223)

Introduction to Cyber Security (11906)

Professional Practice in Engineering (11519)

Year 2

Semester 1

Electronics Systems (8224)

High Speed Networks (9783)

Mobile Technologies (11492)

Software Technology 1 (4483)

Semester 2

Network Architecture (11484)

Signals and Systems (8235)

Systems Analysis and Modelling (11486)

Technological Innovation and Entrepreneurship (11408)

Year 3

Semester 1

Digital Signal Processing (10003)

Internet of Things (11511)

Technology and Engineering Management (9789)

Wireless Networks (8227)

Semester 2

Advanced Cyber Security (11907)

Information & Communication Technology Project (9785)

Software Systems Architecture (11491)

Year 4

Semester 1

Engineering Project (Part A) (10004)

Enterprise and Cloud Computing (9281)

ICT and Engineering Research Methods (9826)

Semester 2

Two Open Electives

Engineering Project (Part B) (10005)

Engineering Work Experience (Ocp) (10006)

Standard Full Time, Semester 2 Commencing with Network Engineering Specialisation

Year 1

Semester 2

Discrete Mathematics (6698)

Introduction to Computer Engineering (8223)

Introduction to Cyber Security (11906)

Professional Practice in Engineering (11519)

Year 2

Semester 1

Database Design (5915)

Engineering Mathematics (10087)

Introduction to Information Technology (4478)

Introduction to Network Engineering (11485)

Semester 2

Network Architecture (11484)

Signals and Systems (8235)

Systems Analysis and Modelling (11486)

Technological Innovation and Entrepreneurship (11408)

Year 3

Semester 1

Electronics Systems (8224)

High Speed Networks (9783)

Mobile Technologies (11492)

Software Technology 1 (4483)

Semester 2

Advanced Cyber Security (11907)

Information & Communication Technology Project (9785)

Software Systems Architecture (11491)

Year 4

Semester 1

Digital Signal Processing (10003)

Internet of Things (11511)

Technology and Engineering Management (9789)

Wireless Networks (8227)

Semester 2

Open Elective

Engineering Project (Part A) (10004)

ICT and Engineering Research Methods (9826)

Year 5

Semester 1

Open Elective

Engineering Project (Part B) (10005)

Engineering Work Experience (0cp) (10006)

Enterprise and Cloud Computing (9281)

Course information

Course duration

Standard 4 years full time, or part time equivalent. Maximum duration is 10 years.

Learning outcomes

Learning outcomes	Related graduate attributes
Demonstrate advanced knowledge of contextual factors, research direction, and underpinning information impacting the engineering discipline, including risk identification and management, and design and implement design metrics and alternatives, systems measurement, simulation, modelling and analysis, and environmental constraints and safety issues.	<p>UC graduates are professional: Employ up-to-date and relevant knowledge and skills; communicate effectively; use creativity, critical thinking, analysis and research skills to solve theoretical and real-world problems; work collaboratively as part of a team, negotiate, and resolve conflict; display initiative and drive, and use their organisational skills to plan and manage their workload; take pride in their professional and personal integrity.</p> <p>UC graduates are global citizens: Think globally about issues in their profession; adopt an informed and balanced approach across professional and international boundaries; understand issues in their profession from the perspective of other cultures; communicate effectively in diverse cultural and social settings; make creative use of technology in their learning and professional lives; behave ethically and sustainably in their professional and personal lives.</p> <p>UC graduates are lifelong learners: Reflect on their own practice, updating and adapting their knowledge and skills for continual professional and academic development; be self-aware; adapt to complexity, ambiguity and change by being flexible and keen to engage with new ideas; evaluate and adopt new technology.</p>

Demonstrate an understanding of contemporary engineering, including the role of standards and the need for the continuing professional development of engineers, and identify, formulate, solve and manage innovative methods in the context of solving a complex problem involving the development of new knowledge.

UC graduates are professional: Employ up-to-date and relevant knowledge and skills; communicate effectively; use creativity, critical thinking, analysis and research skills to solve theoretical and real-world problems; work collaboratively as part of a team, negotiate, and resolve conflict; display initiative and drive, and use their organisational skills to plan and manage their workload; take pride in their professional and personal integrity.

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Understand and proficiently apply the relevant sciences and scientific methods in engineering specialisation area, to design solutions to complex problems.

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Identify, interpret and critically appraise current developments and advanced technologies and apply knowledge of these to engineering specialisation area.

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thinking, analysis and research skills to solve theoretical and real-world problems; work collaboratively as part of a team, negotiate, and resolve conflict; display initiative and drive, and use their organisational skills to plan and manage their workload; take pride in their professional and personal integrity.

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UC graduates are lifelong learners: Reflect on their own practice, updating and adapting their knowledge and skills for continual professional and academic development; be self-aware; adapt to complexity, ambiguity and change by being flexible and keen to engage with new ideas; evaluate and adopt new technology.

Research, identify, conceptualise, investigate, and interpret knowledge from modern engineering specialisation tools and techniques to synthesise a coherent approach to the solution of a problem and/or the design of a project.

UC graduates are professional: Employ up-to-date and relevant knowledge and skills; communicate effectively; use creativity, critical thinking, analysis and research skills to solve theoretical and real-world problems; work collaboratively as part of a team, negotiate, and resolve conflict; display initiative and drive, and use their organisational skills to plan and manage their workload; take pride in their professional and personal integrity.

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Placements requirements

450 hours of practical work experience, which can be reduced by participation in CPD, professional practice units and other practical experiences in alignment with Engineers Australia requirements.

Majors

- [Core Major in Engineering \(57cp\) \(CM0032\)](#)
- [Specialist Major in Network Engineering \(SM0087\)](#)
- [Specialist Major in Robotics and AI \(Engineering\) \(SM0062\)](#)

Awards

Award	Official abbreviation
Bachelor of Engineering (Honours) in Robotics and Artificial Intelligence	BE (Hons) Robotics&AI
Bachelor of Engineering (Honours) in Network Engineering	BE (Hons) NetworkEng

Honours

The Bachelor of Engineering in Network and Software Engineering (Honours) is an Honours degree. The Honours merit calculation will be based on the Honours Grade Point Average (Honours GPA) defined as the GPA in the required UG Level 3 and Level 4 units of the course and other conditions:

- First Class: Honours GPA >6, and High Distinction in Engineering Project (Part A) and Engineering Project (Part B);
- Second Class Division I: Honours GPA >5.25, and Distinction in Engineering Project (Part A) and Engineering Project (Part B);
- Second Class Division II: Honours GPA >4.5, and Credit in Engineering Project (Part A) and Engineering Project (Part B).
- The rest of students who pass the course take out honours without a class.

Enquiries

Student category	Contact details
Prospective Domestic Students	Email study@canberra.edu.au or Phone 1800 UNI CAN (1800 864 226)
Prospective International Students	Email international@canberra.edu.au or Phone +61 2 6201 5342
Current and Commencing Students	In person, Student Centre Building 1 or Email Student.Centre@canberra.edu.au

Download your course guide

Scholarships

Find the scholarship that's the right fit for you

[Explore Scholarships](#)

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CRICOS 00212K

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UC acknowledges the Ngunnawal people, traditional custodians of the lands where Bruce campus is situated. We wish to acknowledge and respect their continuing culture and the contribution they make to the life of Canberra and the region. We also acknowledge all other First Nations Peoples on whose lands we gather.