UNIVERSITY OF CANBERRA

Bachelor of Software Engineering (560AA.6)

Please note these are the 2019 details for this course

Domestic students

Selection rank	54.3 **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.
Delivery mode	On campus
Location	UC Canberra - Bruce Campus
Duration	3.0 years
Faculty	Faculty of Science and Technology
Discipline	Academic Program Area - Technology
UAC code	
English language requirements	An IELTS Academic score of 6.0 overall, with no band score below 6.0 (or equivalent). View IELTS equivalences

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 meet UC's academic entry requirements, visit our academic entry requirements page.

	View UC's academic entry requirements
Delivery mode	On campus
Location	UC Canberra - Bruce Campus
Duration	3.0 years
Faculty	Faculty of Science and Technology
Discipline	Academic Program Area - Technology
CRICOS code	054017M
English language requirements	An IELTS Academic score of 6.0 overall, with no band score below 6.0 (or equivalent). View IELTS equivalences

About this course

Develop a career in software engineering

If software engineering is your chosen career focus, then there's no better place to study than UC. A comprehensive course with broad coverage across the whole software engineering spectrum, you'll explore the design and construction of software systems, across a range of different industries.

With the ability to tailor your course to your specific areas of interest, you'll have the opportunity to complete a professional minor from across a range of areas, such as computer security, network computing, games development, digital forensics and intelligent systems. You'll graduate from this Australian Computer Society-accredited course with the skills, knowledge and ambition required to be an exceptional software engineer, in whichever area of the industry you choose to launch your career in.

Study a Bachelor of Software Engineering at UC and you will:

- achieve comprehensive insight into engineering aspects of computer science
- study the current programming languages at an intensive level
- understand the methodology of software systems engineering using analysis and specification methods such as UML, XML, structured and soft systems methodologies
- learn to design and build systems and software using specialist engineering tools
- work within modern development environments that include Windows, Linux, mobile and cloud computing.

Work Integrated Learning

UC works hard to foster close industry connections, with the course content reviewed annually by our Course Advisory Group, made up of a panel of industry experts, and collaborations with industry partners who can provide you with work placement positions and training opportunities.

Previous students have undertaken internships with companies including Intelledox, Omni Executive, Pursuit Technology, Qirx, Fujitsu Australia, Birdsnest, Agsafe, ThoughtPatterns Consulting, ESKAPEE, HydroAlgorithmics, ALLBIDS, VerveEd.com, Emanate Technology, Xero Australia and the Australian Taxation Office.

In your final year, you'll complete a capstone research project, producing and implementing a real-world engineering solution for a local business, government or community organisation.

Career opportunities

- ICT consultant
- Data scientist
- Database administrator
- Cyber security specialist/forensics
- System architect/technical architect
- User interface designer
- Artificial intelligence/machine learning engineer
- Web/mobile app developer
- Software engineer
- Games developer
- IT test engineer
- Robotics specialist
- System administrator

Course-specific information

This course is accredited by the professional body, the Australian Computer Society, at the Professional level.

High-achieving students may be eligible to enrol in Honours in Information Sciences, and there are clear pathways from this course to the Master of Information Sciences (Research) and other postgraduate degrees.

Professional accreditation

This course is accredited by the professional body, the Australian Computer Society, at the Professional level.

Admission requirements

Normal UC admission requirements to an undergraduate course.

Assumed knowledge

ACT: Mathematical Methods. NSW: Mathematics.

Periods course is open for new admissions

This course is not open for new admissions.

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.

Course requirements

Bachelor of Software Engineering (560AA) | 72 credit points

Expand All | Collapse All

Required - 48 credit points as follows

Major in Software Engineering (MJ0109) | 18 credit points

Required - Must pass 12 credit points as follows

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

Software Engineering Practice (7169) | 3 credit points — Level 3

System Software (7171) | 3 credit points — Level 2

Technology and Engineering Management (9789) | 3 credit points — Level 3

Part A - Must pass 3 credit points from the following

Software Technology 2 (7170) | 3 credit points — Level 2

Web Design and Programming (7175) | 3 credit points — Level 2

Mobile Technologies (8878) | 3 credit points — Level 2

Note:

- For students in Bachelor of Software Engineering (560AA), this restricted choice is 7170 Software Technology 2; for students in other courses, any unit of the three listed.

Part B - Must pass 3 credit points from the following

Introduction to Information Technology (4478) | 3 credit points — Level 1

Introduction to Software Engineering (5531) | 3 credit points — Level 1

Note:

- From 2019 the unit code for System Software has changed to 11489 and for Mobile Technologies to 11492.

Required Units - Must pass 30 credit points as follows

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

Systems Analysis and Modelling (6365) | 3 credit points — Level 2

Discrete Mathematics (6698) | 3 credit points — Level 1

Web Design and Programming (7175) | 3 credit points — Level 2

Professional Practice in IT (7722) | 3 credit points — Level 1

Introduction to Network Engineering (8741) | 3 credit points — Level 2

Software Systems Architecture (8745) | 3 credit points — Level 2

Mobile Technologies (8878) | 3 credit points — Level 2

Information & Communication Technology Project (9785) | 6 credit points — Level 3

- From 2019 the unit code for Systems Analysis & Modelling has changed 11486, for Intro to Network Engineering to 11485, for Software Systems Architecture to 11491 & for Mobile Technologies to 11492.

Restricted Choice - Must pass 12 credit points from the following

Computer Technologies and Network Security - May select from

Information Systems Management (7163) | 3 credit points — Level 3

Security and Support in IT (7167) | 3 credit points — Level 2

Computer and Network Security (8019) | 3 credit points — Level 3

Introduction to Digital Forensics (9074) | 3 credit points — Level 2

Information Security (11487) | 3 credit points — Level 2

Security and Support in IT (11488) | 3 credit points — Level 1

- From 2019 the unit code for Information Security has changed to 11487 and for Security & Support in IT to 11488.

Gaming Technologies - May select from

Game Programming Techniques (7160) | 3 credit points — Level 3

Object Oriented Software Design (7165) | 3 credit points — Level 3

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

Visual and Interactive Computing (7174) | 3 credit points — Level 3

Virtual Worlds Technology (8698) | 3 credit points — Level 3

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

Networked Technologies - May select from

Coding Theory (6539) | 3 credit points — Level 3

Distributed Systems Technology (7159) | 3 credit points — Level 3

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

Network Architecture (9428) | 3 credit points — Level 4

- From 2019 the code for Network Architecture changed from 9428 to 11484.

Mathematics - May select from

Mathematical Methods (577) | 3 credit points — Level 1

Coding Theory (6539) | 3 credit points — Level 3

Introduction to Statistics (6540) | 3 credit points — Level 1

Mathematical Structures (6543) | 3 credit points — Level 2

Mathematical Modelling (8103) | 3 credit points — Level 2

Engineering Mathematics (10087) | 3 credit points — Level 1

Intelligent Systems - May select from

Introduction to Statistics (6540) | 3 credit points — Level 1

Business Intelligence Systems (7156) | 3 credit points — Level 3

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

Data Analytics and Business Intelligence (8696) | 3 credit points — Level 3

Advanced Restricted Choice - May select from

Advances in Information Sciences 1 (7897) | 3 credit points — Level 3

Advances in Information Sciences 2 (7898) | 3 credit points — Level 3

Information Sciences Internship (7899) | 3 credit points — Level 3

Contemporary IT & E Issues (9788) | 3 credit points — Level 3

Information Sciences Internship (Extended) (10152) | 3 credit points — Level 3

Science and Technology Internship (12cp) (11473) | 12 credit points — Level 3

Note:

- These units can be counted towards any of the themes, provided that the content covered is appropriate for that particular theme.

- 1. Some units have prerequisites. If a student is planning to study a particular unit, the student should also plan to complete the prerequisite units beforehand.

- 2. In any semester, only a selection of these units is available.

Note:

- (May choose units from only one theme or from multiple themes)

Open Electives - 12 credit points as follows

- Themes: Students may wish to use their Open Electives to complete one of the themes.

- Unit Levels: In choosing electives students should note that not more than 30 credit points at Level 1 is permitted for the entire course.

Note:

- Must pass 12 credit points from anywhere in the University, as a Minor or as individual units.

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

Year 1

Semester 1

Introduction to Information Technology (4478)

Introduction to Network Engineering (8741)

Professional Practice in IT (7722)

Open Elective Unit

Semester 2

Database Design (5915)

Discrete Mathematics (6698)

Software Technology 1 (4483)

Open Elective Unit

Year 2

Semester 1

Mobile Technologies (8878)

Software Technology 2 (7170)

System Software (7171)

Systems Analysis and Modelling (6365)

Semester 2

Software Systems Architecture (8745)

Web Design and Programming (7175)

Restricted Choice Unit

Open Elective Unit

Year 3

Semester 1

Software Engineering Practice (7169)

Technology and Engineering Management (9789)

Open Elective Unit

Restricted Choice Unit

Semester 2

Information & Communication Technology Project (9785)

Two Restricted Choice Units

Standard Full Time, Semester 1 Commencing, From 2019

Year 1

Semester 1

Introduction to Information Technology (4478)

Introduction to Network Engineering (11485)

Professional Practice in IT (7722)

Open Elective Unit

Semester 2

Database Design (5915)

Discrete Mathematics (6698)

Software Technology 1 (4483)

Open Elective Unit

Year 2

Semester 1

Mobile Technologies (11492)

Software Technology 2 (7170)

System Software (11489)

Systems Analysis and Modelling (11486)

Semester 2

Software Systems Architecture (11491)

Web Design and Programming (7175)

Open Elective Unit

Restricted Choice Unit

Year 3

Semester 1

Software Engineering Practice (7169)

Technology and Engineering Management (9789)

Open Elective Unit

Restricted Choice Unit

Semester 2

Information & Communication Technology Project (9785)

Two Restricted Choice Units

Standard Full Time, Semester 2 Commencing

Year 1

Semester 2

Database Design (5915)

Discrete Mathematics (6698)

Professional Practice in IT (7722)

Open Elective Unit

Year 2

Semester 1

Introduction to Information Technology (4478)

Introduction to Network Engineering (8741)

Systems Analysis and Modelling (6365)

Restricted Choice Unit

Semester 2

Software Systems Architecture (8745)

Software Technology 1 (4483)

Two Open Elective Units

Year 3

Semester 1

Mobile Technologies (8878)

Software Technology 2 (7170)

System Software (7171)

Technology and Engineering Management (9789)

Semester 2

Software Engineering Practice (7169)

Web Design and Programming (7175)

Open Elective Unit

Restricted Choice Unit

Year 4

Semester 1

Information & Communication Technology Project (9785)

Two Restricted Choice Units

Standard Full Time, Semester 2 Commencing, From 2019

Year 1

Semester 2

Database Design (5915)

Discrete Mathematics (6698)

Professional Practice in IT (7722)

Open Elective Unit

Year 2

Semester 1

Introduction to Information Technology (4478)

Introduction to Network Engineering (11485)

Systems Analysis and Modelling (11486)

Restricted Choice Unit

Semester 2

Software Systems Architecture (11491)

Software Technology 1 (4483)

Two Open Elective Units

Year 3

Semester 1

Mobile Technologies (11492)

Software Technology 2 (7170)

System Software (11489)

Technology and Engineering Management (9789)

Semester 2

Software Engineering Practice (7169)

Web Design and Programming (7175)

Open Elective Unit

Restricted Choice Unit

Year 4

Semester 1

Information & Communication Technology Project (9785)

Two Restricted Choice Units

Course information

Course duration

Standard six semesters full-time or equivalent. Maximum twenty semesters.

Learning outcomes

Learning outcomes	Related graduate attributes
Knowledge and skills of the cutting edge development in the information technology (IT) industry and application of the knowledge and skills to real life IT systems and their business environments, policies, and management, independently and/or work in a team.	Analysis and enquiry Working independently and with others.
Solid foundation of the relevant theories and the basic principles in IT fields, including business, information systems, system analysis and modelling, system administration, security, networking, software development, and artificial intelligence etc.; from the foundation to acquire up-to-date knowledge and skills in the future.	Analysis and enquiry Personal attributes: critical thinking, reflective practice, thriving in an environment of change.
Knowledge, skills, understanding and application of the investigation, analysis, and synthesis to IT systems and their business environments, policies, and management with a high level of professional ethics, responsibilities, values and standards.	Analysis and enquiry Problem solving Professionalism and social responsibility Personal attributes: critical thinking, reflective practice, thriving in an environment of change.
Communication skills in listening, reading, speaking, explaining, teaching, and writing from and to audiences of different backgrounds and papers of different scops and levels.	Professionalism and social responsibility Communication; Problem solving Working independently and with others.
Expertise and skills to critique, synthesise and apply new development, skills, knowledge, and standards in the IT fields to real world IT systems, with respect to their business environments, policies, and management.	Analysis and enquiry Problem solving Personal attributes: critical thinking, reflective practice, thriving in an environment of change.
Expertise and skills in research to test established theories against a body of knowledge in IT fields; expertise and skills in designing and testing hypothesis for problem solving and conducting research; expertise and skills in contributing new knowledge and skills to the IT fields.	Analysis and enquiry Problem solving Personal attributes: critical thinking, reflective practice, thriving in an environment of change.

Majors

- Major in Software Engineering (MJ0109)

Awards

Award	Official abbreviation

Bachelor of Software Engineering	BSE

Honours

High performing students may be eligible to enrol in the course Honours in Information Sciences.

Enquiries

Student category	Contact details
Current and Commencing Students	Please contact the University Student Centre by Email student.centre@canberra.edu.au or Phone 1300 301 727
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

Download your course guide

Scholarships

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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.