

Bachelor of Engineering in Network and Software Engineering (106JA.3)

Please note these are the 2016 details for this course

Domestic students

Selection rank	68.00
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	
Duration	4.0 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	<p>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.</p> <p>View UC's academic entry requirements</p>
Delivery mode	On campus
Location	
Duration	4.0 years
Faculty	Faculty of Science and Technology
Discipline	Academic Program Area - Technology
CRICOS code	066903D
English language requirements	<p>An IELTS Academic score of 6.0 overall, with no band score below 6.0 (or equivalent).</p> <p>View IELTS equivalences</p>

About this course

Charge your IT future and keep the world connected

Do you want a degree in network and software engineering that offers plenty of choice in your career? Do you want to become an accredited professional engineer? Study at UC.

With our Bachelor of Engineering in Network and Software Engineering you will be in demand internationally across the rapidly growing IT and telecommunications industries.

Study our Bachelor of Engineering in Network and Software Engineering and you will:

- study core areas of network and software engineering
- acquire in-depth knowledge and skills for a range of software based systems in communication network infrastructures
- cover data networking, mobile and wireless communications, network security, cloud computing, big data and multimedia
- be able to design, implement and operate communication networks, as well as associated services and applications.

Study opportunities

Our course is flexible to suit you. You will complete the degree by tackling an exciting industry-oriented engineering project.

You will also be able to undertake professional internships for valuable workplace experience.

Career Opportunities

Our multi-skilled graduates have rich job prospects both in Australia and overseas.

Work in a wide range of sectors including:

- communications
- audio-visual
- recreational
- automobile telematics
- industrial control
- home automation.

Important to know

There is assumed knowledge for this course. Check to see if you are eligible.

Professional accreditation

The course is provisionally accredited by Engineers Australia, full accreditation by the Engineers Australia (EA) is being pursued and is expected to be granted within the normal timeframe. Accreditation by the Australian Computer Society at the Professional level is being pursued so that the course is expected to count with the double accreditation, EA/ACS

Admission requirements

Applicants must meet normal University requirements for admission to an undergraduate course or hold qualifications deemed to be equivalent by the University's Admissions Committee.

Assumed knowledge

Specialist Maths (Recommended) (T) or Mathematical Methods (T) and English (T).

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 Engineering in Network and Software Engineering (106JA) | 96 credit points

Required - 78 credit points as follows

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

Major in Network Engineering (MJ0158) | 24 credit points

Required - Must pass 24 credit points as follows

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

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

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

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

Engineering Project 1 (9587) | 6 credit points — Level 4

Engineering Project 2 (9588) | 6 credit points — Level 4

Required Units - Must pass 54 credit points as follows

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

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

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

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

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

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

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

Introduction to Computer Engineering (8223) | 3 credit points — Level 1

Electronics Systems (8224) | 3 credit points — Level 1

Introduction to DSP (8226) | 3 credit points — Level 1

Engineering Management 2A (8228) | 3 credit points — Level 2

Communication Theory (8233) | 3 credit points — Level 3

Signals and Systems (8235) | 3 credit points — Level 3

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

- Industrial Experience: - A minimum 12 weeks of professional work experience, normally undertaken at the end of the third year of full-time study (or part-time equivalent), is required.

Restricted Choice - Must pass 18 credit points from the following

- The availability of restricted choice units may vary each semester.

Database Systems (7157) | 3 credit points — Level 3

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

[Game Programming Techniques \(7160\)](#) | 3 credit points — Level 3

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

[Security and Support in IT \(7167\)](#) | 3 credit points — Level 2

[Soft Computing \(7168\)](#) | 3 credit points — Level 3

System Testing (7172) | 3 credit points — Level 3

[Visual and Interactive Computing \(7174\)](#) | 3 credit points — Level 3

[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

[Biometric Person Authentication \(8020\)](#) | 3 credit points — Level 3

[Embedded Systems \(8231\)](#) | 3 credit points — Level 3

Pattern Recognition (8240) | 3 credit points — Level 4

Network Programming (8241) | 3 credit points — Level 4

Optical Communications (8242) | 3 credit points — Level 4

Advanced Wireless Communication (8244) | 3 credit points — Level 4

[Software Systems Architecture \(8745\)](#) | 3 credit points — Level 2

[Introduction to Digital Forensics \(9074\)](#) | 3 credit points — Level 2

[Enterprise and Cloud Computing \(9281\)](#) | 3 credit points — Level 3

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

[Database Design \(5915\)](#)

[Introduction to Network Engineering \(8741\)](#)

[Introduction to Software Engineering \(5531\)](#)

Semester 2

[Engineering Management 2A \(8228\)](#)

[Introduction to Computer Engineering \(8223\)](#)

[Software Technology 1 \(4483\)](#)

Year 2

Semester 1

[Mobile Technologies \(8878\)](#)

[Signals and Systems \(8235\)](#)

[Software Technology 2 \(7170\)](#)

[System Software \(7171\)](#)

Semester 2

[Communication Theory \(8233\)](#)

[Electronics Systems \(8224\)](#)

[Systems Analysis and Modelling \(6365\)](#)

[Web Design and Programming \(7175\)](#)

Year 3

Semester 1

[Introduction to DSP \(8226\)](#)

[Wireless Networks \(8227\)](#)

Semester 2

[Computer and Network Security \(8019\)](#)

[Network Architecture \(9428\)](#)

Year 4

Semester 1

[Engineering Project 1 \(9587\)](#)

Semester 2

[Engineering Project 2 \(9588\)](#)

Course information

Course duration

Standard eight semesters full-time or equivalent. Maximum twenty four semesters.

Learning outcomes

Learning outcomes	Related graduate attributes
Demonstrate detailed understanding of telecommunications and software engineering principles to architect, develop and operate communication networks and the associated services and applications assuring the appropriate security and quality mechanisms;	Knowledge: knowledge and underlying principles and concepts in the engineering discipline, which are the basis for independent lifelong learning.
Demonstrate knowledge of the underpinning mathematics, computer and information fundamentals applicable to the engineering discipline;	Knowledge: comprehensive, theory based understanding of the underpinning sciences and engineering fundamentals.
Develop a functional specification from an initial brief, evaluate the various design options available to meet a given set of technical requirements, formulate a final design specification, and demonstrate how to implement and test the preferred option;	Analysis and inquiry: ability to gather information, analyse and evaluate information and situations in a systematic, creative and insightful way.
Determine which engineering principles are appropriate to use in the solution of complex technological problems in the field of information engineering;	Problem solving: ability to apply problem-solving processes in novel situations; identify, analyse problems then formulate, implement solutions.
Demonstrate an understanding of the professional engineering environment including appropriate team working skills, leadership, professional communication, and engineering workplace ethics, responsibilities and sustainability;	Professionalism and social responsibility: capacity and intention to use professional knowledge and skills ethically and responsibly, for the benefit of others and the environment.
Apply systematic approaches to the conduct and management of engineering projects;	Working independently and with others: ability to plan own work, be self-directed, and use interpersonal skills and attitudes to work

	collaboratively.
Communicate effectively in oral and written form to professional and wider audiences;	Communication: ability to present knowledge, ideas and opinions effectively and communicate within and across professional and cultural boundaries.
Design, implement and maintain software and network communication systems, following contemporary engineering practices;	Skills: technical skills for the design, implementation and maintenance of software and network communication systems.
Participate in the processes of business analysis of systems, and appreciate entrepreneurial approaches in engineering practice;	Skills: professional skills for the development of the engineering activity within a broad business context.
Apply relevant theories and techniques of data communication networks and software engineering to the analysis and solution of technological problems in the merging software and telecommunication industry, such as those encountered in the Commonwealth Public Service, major telecommunications companies and national and international software and networking industry companies;	Application of Knowledge and skills: ability to apply relevant theories, techniques and engineering strengths to the analysis, design, construction and maintenance of systems in network communications and software engineering.
Demonstrate the ability to transfer and enhance the knowledge and skills acquired during the course to new or complementary areas of engineering and technology through the establishment of continuing professional development plans and career goal planning, key for lifelong learning;	Application of Knowledge and skills: Lifelong learning and personal attributes applicable to the evolving technological world.

Majors

- [Major in Network Engineering \(MJ0158\)](#)

Awards

Award	Official abbreviation
Bachelor of Engineering in Network and Software Engineering	BE Network&SE

Honours

Honours degree programs are available to students who achieve good results [Grade Point Average (GPA) of 5.00 or better) in the third year of their studies. Honours students then complete additional work (an extension to the project) in their fourth year of study to qualify to graduate with the degree with Honours. The degree with Honours will be awarded in the following classes depending on the Grade Point Average obtained and other conditions as follows: 1. First Class - GPA > 6 in fourth-year subjects, High Distinction for the Engineering project, outstanding work in the Honours extension; 2. Second Class Division 1 - GPA > 5.5 in fourth-year subjects, Distinction for the project, excellent work in the extension; and 3. Third Class - Not awarded. Student takes out the pass degree.

Enquiries

Student category	Contact details
Prospective International Students	Email international@canberra.edu.au or Phone +61 2 6201 5342
Prospective Domestic Students	Email study@canberra.edu.au or Phone 1800 UNI CAN (1800 864 226)
Current and Commencing Students	Please contact the University Student Centre by Email student.centre@canberra.edu.au or Phone 1300 301 727

Download your course guide



Scholarships

Find the scholarship that's the right fit for you

[Explore Scholarships](#)

Printed on 10, May, 2025

University of Canberra, Bruce ACT 2617 Australia

+61 2 6201 5111

ABN 81 633 873 422

CRICOS 00212K

TEQSA Provider ID: PRV12003 (Australian University)

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.