

Bachelor of Engineering (Honours)

Engineers build extraordinary things. With an accredited Federation degree, you can too.



Welcome to Federation University Australia

We're thrilled that you've taken the first step towards completing a degree with Federation University. Whatever your passion or career goals, Federation has everything you need to make your mark in the world.

Reasons to choose Federation University

TOP 200	Young Universities in the World ¹
TOP 300	Universities worldwide for Sustainable Development Goals ²
TOP 400	Universities worldwide for Engineering and Technology ³
#1	in Victoria for Undergraduate Starting Salary ⁴
5/5 RATING	Excellence in Research⁵ Federation was rated at or above world standard in 80% of our submitted Fields of Research
	Affordable tuition fees and great scholarships available
	High quality , personalised teaching and dedicated international student support
	Industry integrated learning with opportunities for real life projects with industry leaders

1 Times Higher Education (THE) Young University Rankings 2023

2 Times Higher Education (THE) World University Impact Rankings 2023

3 Times Higher Education (THE) World University Rankings by Subject 2023

4 The Good Universities Guide 2024

5 Excellence in Research Australia, 2018 National Report



Welcome to the Institute of Innovation, Science and Sustainability

With proven experience in teaching engineering for over 150 years, Federation University will provide you with the skills and knowledge you need to build a successful career engineering. Specialise in one of our many available majors and contribute to building a better tomorrow.

Our Institute of Innovation, Science and Sustainability (IIS) delivers contemporary engineering degrees, designed to meet the needs of industry now and long into the future. Incorporating teachings from our expert academics and industry leaders, you will develop your skills in the classroom and put them into practice through real-world projects, simulations and placements.

We ensure that every Bachelor of Engineering graduate is equipped with confidence, knowledge, skills and experience to succeed in their career. That's why Federation University is internationally recognised by employers for producing highly desirable graduates.

Women in STEMM

Federation University is proud of the achievements and contributions of its female researchers, students and staff, and remains committed to supporting gender diversity and equity within the university.

We take a holistic approach to ensuring women have equal access to study, work and pursue research with us at Federation.

We are proudly an Athena SWAN member – the only globally recognised framework for gender equity, diversity and inclusion. In 2020, we achieved SAGE Athena SWAN Bronze Accreditation by promoting gender equity and diversity in Science, Technology, Engineering, Mathematics and Medicine (STEMM).

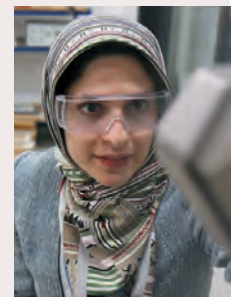
Visit our website to learn more about this accreditation. [federation.edu.au/research/women-in-research/sage-athena-swan](https://www.federation.edu.au/research/women-in-research/sage-athena-swan)



Dr Fatemeh Javidan

Doctor of Philosophy (Structural Engineering)

Structural engineering lecturer, Dr Fatemeh Javidan, strongly encourages young women to study engineering and capitalise on increased career opportunities, especially in trending areas of bioengineering, textile engineering and design fabrics.



“ There are different, rewarding disciplines that girls will be interested in if they are made more aware of those. After you have passed learning the theories, and doing the maths, when it comes to your actual designs or structures, that's when you can add your creativity. If you get into research, you then have ideas and the space to bring them into practice. ”

Fatemeh's research has made significant contributions to Australia's construction industry, developing a new type of steel that can be sustainably produced compared to traditional sources. View Dr Javidan's profile and published research in more detail by visiting the Federation website.

What to expect

Our Bachelor of Engineering will see you:

- explore key areas of **electrical, civil, mechanical** and **mining** engineering
- undertake 480 hours of **supervised industry placement** to put your skills into action in real workplace settings
- study in our new \$45 million science and engineering precinct (based at the Mt Helen Campus) whilst working in dedicated labs with access to the **latest technology and equipment** used by industry leaders
- obtain a qualification that's been **accredited by Engineers Australia** – the trusted accreditation authority for engineering education in Australia and overseas.

The Bachelor of Engineering (Honours) degree offers a solid foundation in first year, with specialisations from second year including Civil, Mining, Mechanical or Electrical and Information Engineering.

What's in the detail?

INTAKES

Semester 1 (February)
Semester 2 (July)

CAMPUSES

Mt Helen (Ballarat)
Gippsland[^]

[^]Available for students completing Civil or Electrical and Information Engineering majors.

DURATION

4 years full time (480 credit points)

FEES (ANNUAL)

\$31,080

New international students may be eligible for a tuition fee scholarship.

[federation.edu.au/current-students/starting-at-federation/scholarships/international-scholarships](https://www.federation.edu.au/current-students/starting-at-federation/scholarships/international-scholarships) ↗

ACCREDITATION

This degree is accredited by Engineers Australia. ↗

Industry connections

Put your dream career in reach

At Federation University we understand that you need real-world experience, along with your degree, to achieve your career aspirations. That's why our engineering students complete industry projects and placements – putting newly acquired skills and knowledge into practice under the mentorship of host organisations. Take full advantage of our existing relationships with local government bodies such as VicRoads, national companies such as Energy Australia and AGL Energy, or global businesses like BHP Billiton.

Upon graduation you'll be qualified for a fulfilling career in a wide range of engineering roles, including:

- Local government engineer
- Structural engineer
- Hydraulic design engineer
- Mechanical engineer
- Civil engineer
- Electrical engineer
- Mining engineer
- Geotechnical engineer
- Construction engineer

Sample course plan

Year one

COMMON FIRST YEAR		
S1	Professional engineering	Materials in engineering
	Engineering physics	Modelling and change (Introductory level)
S2	Engineering design and drafting	Engineering computer modelling
	Engineering mechanics	Linear algebra and applications

During the second year of their course, engineering students will undertake an additional Professional Practice course (0 credit points). Students complete 12 weeks of professional experience, through work placements and other industry engagement activities, immersing themselves in industrial and technical engineering environments before graduation.

Year two, three and four – Study options by major specialisation

CIVIL (CRICOS CODE 085617G)			
	YEAR 2	YEAR 3	YEAR 4
SEMESTER 1	Hydraulics and hydrology	Structural design	Engineering project 1 (30 credit points)
	Concrete technology and civil construction	Geotechnical engineering	
	Mechanics of solids	Traffic and transport	Civil engineering elective (15 credit points)
	Modelling continuous change	Engineering surveying	Any engineering elective (15 credit points)
SEMESTER 2	Engineering project management and sustainable design	Engineering research methodology and management	Engineering project 1 (30 credit points)
	Structural analysis	Engineering design project	Civil engineering elective (15 credit points)
	Introduction to geotechnical engineering	Road engineering	
	Modelling and change (Advanced level)	Water and wastewater	Any engineering elective (15 credit points)

ELECTRICAL AND INFORMATION ENGINEERING (CRICOS CODE 0100639)			
	YEAR 2	YEAR 3	YEAR 4
SEMESTER 1	Signals and systems	Power electronics	Engineering project 1 (30 credit points)
	Digital logic and electronic systems	Power system analysis	
	Big data and analytics	Engineering computer applications and interactive modelling	Electrical power distribution engineering
	Modelling continuous change	System dynamics and control	Micro-grid and energy storage systems
SEMESTER 2	Engineering project management and sustainable design	Engineering research methodology and management	Engineering project 1 (30 credit points)
	Principles of renewable energy sources	Power system protection	
	Electrical and electronic drives and actuators	Digital communication principles	Power electronic application to renewable energy systems
	Modelling and change (Advanced level)	Digital imagine and artificial intelligence	Digital and embedded systems

MECHANICAL (CRICOS CODE 085618G)			
	YEAR 2	YEAR 3	YEAR 4
SEMESTER 1	Signals and systems	Fluid dynamics	Engineering project 1 (30 credit points)
	Mechanics of solids	Introduction to vibration analysis	
	Engineering dynamics	Robotics	Machine dynamics and vibration
	Modelling continuous change	System dynamics and control	Modelling and simulation
SEMESTER 2	Engineering project management and sustainable design	Engineering research methodology and management	Engineering project 1 (30 credit points)
	Mechanism and machine theory	Engineering design project	
	Thermofluids	Thermodynamics	Energy conversion
	Modelling and change (Advanced level)	Manufacturing engineering	Machine system design

MINING (CRICOS CODE 085619F)			
	YEAR 2	YEAR 3	YEAR 4
SEMESTER 1	Mechanics of solids	Engineering surveying	Engineering project 1 (30 credit points)
	Mine power and services technology	Underground production systems	
	Rock fragmentation	Subsurface environment engineering	Mine planning and scheduling
	Modelling continuous change	Landscape restoration and mine site rehabilitation	Mineral processing I
SEMESTER 2	Thermofluids	Engineering research methodology and management	Engineering project 1 (30 credit points)
	Rock mechanics applications	Surface mining operations and equipment	
	Modelling and change (Advanced level)	Advanced mine ventilation	Smart engineering technologies
	Planet earth	Economic geology	Mineral processing II

Entry and application information

Entry requirements

To be eligible for this course students must have **successfully completed**:

- An Australian **Year 12 Certificate** (or equivalent); and
- **Academic IELTS overall score of 6.0**, with no bands less than 6.0 (or equivalent)

For more information on satisfying English language requirements, including accepted test programs, please visit [this link](https://www.federation.edu.au/english-language-requirements) ↗ **federation.edu.au/english-language-requirements**

Once you have submitted your application, you will be assessed against the course requirements and for available pathways and scholarships.

Pathways designed specifically for you

If you have not met the entry requirements for this course, don't worry. With a range of pathways now available, you can be studying at Federation University sooner than you think.

Foundation Studies

(CRICOS Code 110818J)

This pre-university course is designed for international students to meet the requirements needed to join a higher education diploma or fast-track your way directly into the first year of a Bachelor degree. Develop your English and academic skills in a supportive environment, undertaking a broad selection of courses to gain insight into what we provide.

Find out more ↗

study.federation.edu.au/course/DGFO

English Language courses

(CRICOS Code 113565A)

Students who do not meet the English language requirements for this course may be eligible to complete our General English or English for Academic Preparation (EAP) courses. These courses have been newly designed to equip you with the English speaking, reading, writing and listening skills needed to be successful in your university studies. Depending on your English level, the Admissions team will package the appropriate pathway option together with your chosen degree.

Find out more ↗

2024 course information will become available soon. To learn more, visit study.federation.edu.au/area/pathways

Diploma of Engineering (Higher Education)

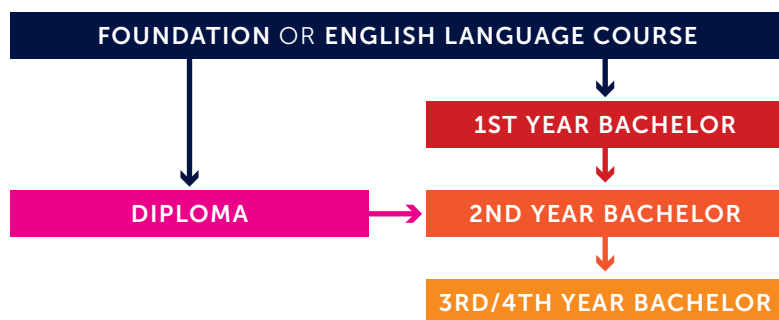
(CRICOS Code 109400A)

For guaranteed entry into the second year of our Bachelor of Engineering in any major, complete our globally recognised Diploma of Engineering (Higher Education). This course will equip you with the academic skills and knowledge of broad-based engineering theory before diving into engineering elements of design and drafting, mechanics, computer modelling and algebra. Delivered across two semesters, you'll complete foundational courses from the first year of the Bachelor of Engineering course in small classrooms with additional English support services and more one on one time with lecturers.

Find out more ↗

study.federation.edu.au/course/DGN1

Your pathway journey



Scholarships

Studying in Australia just became more affordable

At Federation University Australia, we're driven to make a real difference to the lives of every student who studies with us.

Our scholarships help ease the financial stress of commencing study at a university, especially for international students who are moving to Australia. From accommodation support to tuition fee discounts and research grants, we offer a range of scholarships to help you start studying sooner.

Visit our website to learn more about available scholarships, terms and conditions, eligibility criteria, and how to apply.

Find out more ↗

federation.edu.au/scholarships



Sydney, Zimbabwe

Bachelor of Engineering (Mechanical) (Honours)

Graduating from high school in Zimbabwe and starting at university in Australia within six months was a big change for engineering student Sydney.



“ This is my first Bachelor’s degree and my first time at university. I found the first semester was a little bit hard for me, you really have to manage your own time and be self-disciplined. But now, at the end of my second semester, I feel I know a lot about my course and it’s becoming more interesting every day. ”

When asked why he chose mechanical engineering, Sydney said he consulted a number of people for their advice.

“ I chose mechanical engineering as the career opportunities are so diverse. I can work in manufacturing, the transport sector, and still complete subjects in electrical engineering and mining.

I’m just grateful to all the support I received from the library, university staff, my teachers – everyone was lovely and helpful. ”

Feel supported to succeed

We understand that choosing to study abroad is both an exciting and challenging time. Help at Federation University is readily available – be it support with your English, understanding your assignments, or finding someone to talk to about personal life concerns. No matter the challenge, our range of student-focused services enables international students to develop skills, knowledge and confidence in a supportive environment that is united in your ambition to succeed.

Some of our support services include:

	English Language Support Service
	Libraries and Learning Skills Advisory
	Counselling
	International Student Employability
	International Student Advisory
	Spiritual facilities
	Support for students with disabilities
	Sports and clubs

Your next steps

Whether you're applying directly or via an agent, just follow these simple steps



Step 1

FIND YOUR COURSE

Find the Federation University course you wish to study

- For undergraduate and postgraduate courses visit study.federation.edu.au
- Check you meet the academic entry requirements
- Check you meet the English language requirements
- Check for any essential requirements that you need to complete in addition to your application.

Essential requirements may include auditions, tests or interviews.



Step 2

APPLY

- International students or their agents must apply through the **StudyLink** online application system
Visit federation.edu.au/international/study-at-federation/apply
- Follow the instructions and ensure you have attached all relevant supporting documents.
- Details of documentation required is available at federation.edu.au/international/prepare

Note: Be aware of cut off dates.



Step 3

ASSESSMENT

Your application will be assessed by our team

- English language requirements
- Academic entry requirements
- Scholarships



Step 4

OFFER MADE

Congratulations!

You will be sent an International Student Offer and Acceptance Pack that includes:

- Letter of Offer
- Information for accepting your offer
- GTE and/or financial assessment forms*

Refer federation.edu.au/SSVF for more information.

*International students may be required to complete a pre-visa screening process as a condition of their offer under the requirements of the Simplified Student Visa Framework (SSVF). The requirements will depend on a number of factors.



Step 5

ACCEPTANCE AND PAYMENT

Once you have provided all documentation and met all conditions, sign the acceptance of your offer letter and pay the required fees.

We will then issue you with an electronic Confirmation of Enrolment (CoE).

Note: Payments to Federation must be made via Convera GlobalPay through your StudyLink application.



Step 6

VISA APPLICATION WITH COE

You will need your CoE to apply for your Australian student visa.

More information on the visa application process is available at immi.homeaffairs.gov.au

Note: Make sure you plan in advance to get your visa in time.



Step 7

PREPARE TO ARRIVE

We will send you an International Student Support Guide to help you understand what to expect.

FLIGHTS

Make sure you arrive in time to attend the compulsory International Student Orientation Program that is held in the weeks before semester commences.

ACCOMMODATION

Check out the offers from FedLiving – on-campus accommodation in Ballarat, Berwick and Gippsland.



Federation.edu.au
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#feduni/
feduniaustralia

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