Civil Maintenance and Reliability
Mechanical Mechatronic Systems
Mining

FOR STUDY IN
2019
Build your engineering career with FedUni

We’re rated number one university in Victoria for overall quality of educational experience in undergraduate engineering.*

Our tailored admission pathways provide opportunities to acquire technical skills to pursue study in a variety of engineering fields. Our first year course structure allows you to experience each of our civil, mechanical, mechatronic and mining specialisations, providing you the flexibility to determine your specialisation from second year.

Well-developed relationships with industry provide opportunities for you to engage in workplace projects alongside industry professionals.

Our TAFE programs feature a strong focus on manufacturing technologies, ensuring you are ready to step into a skilled position.

Our graduate courses in Mining, Mechanical, Civil, Maintenance and Reliability engineering are renowned in industry, both in Australia and internationally.

*QILT data 2016
Entry Requirements

Entry Requirements will be determined by your background.

Recent Secondary Education: Current Year 12 students, including applicants who have completed Year 12 within the previous two years (and have not undertaken Higher Education or VET studies), must meet Year 12 prerequisite entry requirements.

Eligible applicants will be ranked for admission based on theirATAR and ATAR Adjustment Factors – e.g. Special Entry Access Scheme (SEAS) and Subject Adjustments. Applicants will be selected in order of ranking and the number of offers made to applicants will be based on course specific quotas.

Non year 12 applicants are people who have undertaken Higher Education or VET studies; completed Year 12 more than 2 years previously; or those who are being considered based on other work/life experience. These applicants will be considered based on relevant background, as well as demonstrated ability to undertake further studies.

Some courses have extra requirements during the application process. Depending on the study area, this may be an interview, folio or audition, test or additional form. These are essential requirements and must be completed in order to be considered for selection.

FedUni offers a range of admission pathways for students who do not meet specified entry requirements.

How to apply

You can apply to FedUni via VTAC or direct application. How you apply, and the subsequent entry requirements will be determined by your applicant background.

Higher Education applicants: Current Year 12 students and applicants applying for more than one institution must apply through VTAC. Non Year 12 students only applying to FedUni can submit a direct application form to FedUni.

TAFE applicants: Please check individual courses as application requirements may vary.

Study modes

You may study full-time or part-time, on-campus, or online (where applicable), or a blend of study modes where available.

Student fees

Fees will vary dependent on your circumstances and what course you apply for.

Scholarships, grants and bursaries

Scholarships, grants and bursaries are available to eligible students and may be awarded based on academic merit, indigenous background, financial challenges and hardship or relocation support.

Get online to find out all of the information you need on courses, campuses, scholarships, fees, applying and getting started at FedUni.

federation.edu.au/courseguide
There are many ways for you to achieve the qualification you need for your chosen career.

FedUni offers study at various levels — from VET and undergraduate study through to postgraduate and research. Use the above diagram to see how the levels of study work together, and where each course is on your path to success.

Visit federation.edu.au/pathways

Foundation Access Studies (FAST)

NOTE: FAST is an alternative entry option for most FedUni undergraduate courses. Engineering applicants will need to successfully complete the Higher Maths / Engineering / FAST program.

VCE or equivalent or VCAL

Year 10 or 11

Certificate II in Engineering Studies
NCC: 22209VIC

Certificate III in Engineering Fabrication or Mechanical Trade
NCC: MEM30305/MEM30205

Certificate IV in Engineering or Certificate IV in Engineering Drafting
NCC: MEM40105/MEM40412

Diploma of Engineering – Technical
NCC: MEM50212

Bachelor of Engineering (Honours)
(Civil/Mining/Mechanical)

Bachelor of Mechatronic Systems Engineering (Honours)

Foundation Access Studies (FAST)

NOTE: FAST is an alternative entry option for most FedUni undergraduate courses. Engineering applicants will need to successfully complete the Higher Maths / Engineering / FAST program.

VCE or equivalent

Bachelor of Engineering (Honours)
(Civil/Mining/Mechanical)

Graduate Diploma of Mining

Master of Mining Engineering

Graduate Certificate in Reliability Engineering

Graduate Certificate in Maintenance Management

Graduate Diploma of Engineering Maintenance Management

Master of Maintenance and Reliability Engineering

Eligible 3 year Engineering degree

Bachelor of Mechatronic Systems Engineering (Honours)

Master of Engineering Technology
(Civil/Mining/Mechanical)

Academic support programs

We understand that starting your life as a university student is exciting, but that it also involves change with a challenge or two along the way.

To help you meet these challenges, and to succeed, we have a range of student-focused programs and services available.

To find out more visit federation.edu.au/student-support
Careers in Engineering

Civil Engineering
- Airport engineer
- Civil engineer
- Design engineer
- Geotechnical/soil engineer
- Harbour engineer
- Hydraulic/water resources engineer
- Irrigation/drainage engineer
- Local government engineer
- Materials and testing engineer
- Pipeline engineer
- Planning engineer
- Project engineer
- Railway engineer
- Structural engineer
- Traffic/transport engineer
- Desalination plant engineer
- Waste water engineer

Mechanical Engineering
- Design engineer
- Hydraulic design engineer
- Maintenance, scheduling and/or planning engineer
- Manufacturing engineer
- Mechanical design engineer
- Mechanical engineer
- Mechanical production process engineer
- Plant process engineer
- Printing engineer
- Process engineer
- Project engineer
- Researcher
- Rotating equipment engineer
- Sales engineer
- Service engineer

Mining Engineering
- Construction engineer
- Consultant
- Geotechnical engineer
- Mine safety engineer
- Mining engineer
- Open pit mining engineer
- Planning engineer
- Project engineer
- Researcher
- Sales engineer
- Site manager
- Underground mining engineer

Mechatronic Systems
- Automation engineer
- Automotive systems engineer
- Avionics test engineer
- Controls system engineer
- Data communication and networks officer
- Infrastructure engineer
- Maintenance engineer
- Mechanical engineer
- Mechanical production process engineer
- Plant process engineer
- Printing engineer
- Process engineer
- Project engineer
- Researcher
- Rotating equipment engineer
- Sales engineer
- Scientific equipment designer
- Security systems designer
- Self-diagnostic machinery design engineer

Maintenance and Reliability Engineering
- Chief engineer
- Maintenance and reliability engineer
- Maintenance manager
- Planning engineer
- Production and maintenance engineer
SMB Campus (Ballarat)

We provide vocational training to our students in the state-of-the-art Manufacturing and Engineering Skills Centre, and deliver trade, post-trade and technical training. Our programs reflect the needs of industry deploying the latest technologies and equipment, and are taught by industry-experienced professional teachers.

Mt Helen Campus (Ballarat)

The world class Science and Engineering precinct reflects the importance of the built environment to the learning experience. The laboratories are equipped with current and relevant technologies that allow students to develop the practical skills demanded in a professional engineering working capacity.

Gippsland Campus

Experience our new classrooms, new laboratories, and new mechatronics facilities – all specifically designed to best facilitate hands-on experience and skill development. Our academic staff have strong industry connections and experience, providing excellent opportunities for professional engagement.

Industry Placement Program

The Industry Placement Program (IPP)* is an opportunity for you to gain valuable and relevant workplace experience while working towards your degree.

You will take part in a two-year professional development program within the field of your degree, receiving up to 26 weeks industry placement, and an industry funded scholarship payment of up to $15,000.

Throughout your placement, you’ll apply the knowledge learnt in the classroom, while developing the hands-on employment skills that are sought by employers.

federation.edu.au/ipp

*Eligibility requirements apply. Not available across all courses.

Rhian Bateman
Civil Engineering

Flood mapping for Fish Creek has been my main project here at the WGCMA. This project has involved lots of problem solving and independent research, skills that have been invaluable in my university studies. Flood mapping was something I knew next to nothing about at the beginning of placement, but this kind of work has been the highlight of my internship and something that I am now looking to pursue a career in.
Diploma of Engineering – Technical

You are interested in design and technology. You would like to be part of the exciting future of new machines and devices.

FedUni’s one-year Diploma of Engineering – Technical will make you a highly skilled technician in turning energy into power and motion, whether it’s for your future career in hydraulic power, robotics, ergonomics or even teaching these skills.

During your studies, you’ll experiment with plasma cutters, 3D printers and the latest technologies as they are developed. You’ll also set up circuits, calculate force systems within structures and perform computations.

Your subjects will take you through the areas of robotics, industrial automation, control technologies, advanced manufacturing technology, 2D CAD drafting and 3D solid modelling; preparing you for work in automotive, aviation, food, mining sectors, manufacturing and fabrication sectors.

You will sample many areas and find where you would like to specialise. If you decide you’d like to further your studies, you’ll have earned credits towards FedUni’s Bachelor of Engineering degrees.

Further study options

- Bachelor of Engineering (Civil) (Honours)
- Bachelor of Engineering (Mechanical) (Honours)
- Bachelor of Engineering (Mining) (Honours)
- Bachelor of Mechatronic Systems Engineering (Honours)

Entry Requirements (Refer to page 1 for full details)

Certificate III in Engineering; or Year 12; or industry training/experience.

Extra Requirements

A minimum educational level of Year 12 or Certificate III in Engineering qualification is highly recommended. It is recommended that Year 12 applicants have completed a Year 12 mathematics unit (any) and be proficient in basic algebra and trigonometry.

Career opportunities

- Engineering project officer
- Engineering development officer
- Engineering estimator
- Engineering technical officer
- CAD drafter
- Control systems engineer
- Mechanical engineer
Bachelor of Engineering (Civil) (Honours)

From roads to railways, dams to harbours, houses to high-rises, it’s civil engineers who are responsible for the design and construction of these assets.

It’s also civil engineers who work with other experts like builders, architects and clients to ensure that structures are safe, economical and environmentally-sound. You’ll find out how to prevent flooding, design irrigation systems, and build multi-storied buildings. It’s these skills that may see you specialise in structural engineering, geotechnical engineering, transport engineering, water engineering or infrastructure management.

You’ll learn problem-solving skills, analytical skills and you’ll also understand the environmental, social and political aspects that will impact your career as a civil engineer. In the final year of the course you will have the opportunity to undertake a specialisation in structural or water and wastewater engineering.

Industry placement
You will undertake a 12 week industry placement of your choice before completing your study. You may also choose to apply for the Industry Placement Program (IPP), refer to page 4.

Professional recognition
This program is accredited by Engineers Australia.

Further study options
Master of Engineering Science (refer to page 13 for details).

Career opportunities
You will be responsible for the planning, design and construction of all types of structures including multi-storied building complexes, roads and railways, airports, towers, bridges, pipelines, gas and water supply systems, sewerage systems, dams, harbours and more. Civil engineers also plan, design and test the structures of private and public buildings and facilities.

What will you study?
Areas of study
- Concrete Technology and Civil Construction
- Engineering Computer Modelling
- Engineering Design and Drafting
- Engineering Design Project
- Engineering Mechanics
- Engineering Physics
- Engineering Project Management and Sustainable Design
- Engineering Research Methodology and Management
- Engineering Surveying
- Geotechnical Engineering
- Hydraulics and Hydrology
- Materials in Engineering
- Mechanics of Solids
- Modelling and Change
- Modelling Continuous Change
- Professional Engineering
- Professional Practice (12 weeks)
- Road Engineering
- Secrets of the Matrix
- Structural Analysis
- Structural Design
- Traffic and Transport
- Water and Wastewater
- Engineering Project – undertaken over 2 semesters, culminating in a presentation and dissertation. A sequence of specialisation electives from:
  - Advanced Structural Analysis
  - Modelling and Simulation
  - Asset Management Techniques
  - Management of Water Resources
  - Environmental Geoengineering
  - Surface Water Hydrology
  - Geographic Information Systems

Correct at time of printing. Study areas and majors are subject to change. Please refer to study.federation.edu.au
Bachelor of Engineering (Mining) (Honours)

Mining is big business in Australia and the Asia Pacific. It needs skilled professionals to help manage teams and lead projects.

You may work on surface mines or in underground mining. We'll teach you how to mine in a sustainable and safe way and teach you the social and political aspects that will impact your career. You'll also learn communication and problem-solving that are essential in the industry. Study areas include mineral deposit evaluation and processing, underground production systems, mine power and services, surface mining operations and mine environment and safety.

Perhaps you'll launch your career in design, planning or operations or you'd like to be manager. Opportunities exist for you in government and private organisations, mining companies and consulting firms.

When you graduate from this Honours degree, you'll be eligible for admission to Engineers Australia under the professional engineer (full member) category.

Industry placement
You will undertake a 12 week industry placement of your choice before completing your study. You may also choose to apply for the Industry Placement Program (IPP), refer to page 4.

Professional recognition
This degree is accredited by Engineers Australia.

Further study options
Master of Engineering Science (refer to page 13 for details).

Correct at time of printing. Study areas and majors are subject to change. Please refer to study.federation.edu.au.

### Duration
4 years FT or PT equivalent

### Location
Mt Helen Campus (Ballarat)

### Application
VTAC/Direct

### Entry Requirements
(Refer to page 1 for full details)

**Year 12:**
- Units 3 and 4: a study score of at least 20 in one of Maths: Mathematical Methods or Maths: Specialist Mathematics; and a study score of at least 20 in any English, or interstate/overseas equivalent.

**Non-Year 12:**
- HE, VET and/or work/life experience.

### Extra Requirements

**Non-Year 12:** Applicants applying based on work/life experience must complete a personal statement. Applicants must also provide copies of ATAR and Study Scores if Year 12 was completed.

**Year 12 applicants will be ranked for admission based on ATAR and relevant adjustments. Refer to page 1 for details.**

### Career opportunities
Mining engineers work in all parts of the industry from feasibility studies through to mine design, to managing actual production and sales. You will oversee the skilled people who will construct the designs you have created. You will work at a theoretical level to isolate, analyse and define a required engineering outcome.

Mining engineers also work with geologists to extract ore bodies and mineral deposits, as well as non-metallic ores and fuels such as coal and uranium. They plan the safest and most cost effective way of removing minerals from the ground, rivers or the sea bed. They may be involved with designing, installing and supervising the use of mining machinery and equipment.

Mining engineers who protect conditions for both people and the environment in the vicinity of mines are in high demand in Australia and the Asia Pacific Region. This degree will enable you to seek employment in a wide range of resource related industries, including consulting.

### Areas of study

<table>
<thead>
<tr>
<th>Advanced Mine Ventilation</th>
<th>Mechanics of Solids</th>
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</thead>
<tbody>
<tr>
<td>Economic Geology</td>
<td>Mine Planning &amp; Scheduling</td>
</tr>
<tr>
<td>Engineering Computer Modelling</td>
<td>Mine Power and Services Technology</td>
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<tr>
<td>Engineering Design and Drafting</td>
<td>Mineral Processing</td>
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<tr>
<td>Engineering Mechanics</td>
<td>Modelling and Change</td>
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<tr>
<td>Engineering Physics</td>
<td>Planet Earth</td>
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<tr>
<td>Engineering Research Methodology and Management</td>
<td>Professional Engineering</td>
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<tr>
<td>Engineering Surveying</td>
<td>Professional Practice (12 weeks)</td>
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<tr>
<td>Landscape Restoration and Mine Site Rehabilitation</td>
<td>Rock Fragmentation</td>
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<tr>
<td>Materials in Engineering</td>
<td>Rock Mechanics Applications</td>
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<td></td>
<td>Secrets of the Matrix</td>
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<tr>
<td></td>
<td>Subsurface Environmental Engineering</td>
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<td>Surface Mining Operations and Equipment</td>
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<td>Thermofluids</td>
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<tr>
<td></td>
<td>Underground Mine Planning and Infrastructure Development</td>
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<td>Underground Production Systems</td>
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<td></td>
<td>Engineering Project – undertaken over 2 semesters, culminating in a presentation and dissertation.</td>
</tr>
</tbody>
</table>

Correct at time of printing. Study areas and majors are subject to change. Please refer to study.federation.edu.au.
Bachelor of Engineering (Mechanical) (Honours)

Invent new products, design innovative machines and change the way humans interact with mechanics.

Perhaps you want to learn to build robots. In this degree, you’ll learn about electric circuits and machines, thermodynamics, industrial robots and more. When you graduate, you’ll be a professional engineer who is an expert in planning, design and management. Your career may see you managing teams who will build the designs you’ve created.

You’ll be studying in FedUni’s world class $43 million Science and Engineering precinct at our Mt Helen Campus. Your subjects include ‘machine design’, ‘simulation in engineering’ and ‘energy conversion’. In your final year, you’ll take on an engineering project to research and perfect your skills in your favourite area.

Industry placement

You will undertake a 12 week industry placement of your choice before completing your study. You may also choose to apply for the Industry Placement Program (IPP), refer to page 4.

Professional recognition

This degree is accredited by Engineers Australia.

Further study options

Master of Engineering Science (refer to page 13 for details).

Career opportunities

You will be involved in all aspects of design specification, development, research, evaluation, manufacture, installation, testing, operation, maintenance and management of machines and systems. This will include, but not be limited to, mechanical and mechatronic systems, automated systems and robotic devices, heat transfer processes, thermodynamic and combustion systems; and fluid and thermal energy systems. Our engineering graduates are highly sought after by industry and this four year degree will allow you to qualify as a professional engineer without the need to undertake further graduate level study.

Previous FedUni graduates have found employment with engineering companies large and small, both locally and all over Australia.

What will you study?

Areas of study

- Energy Conversion
- Engineering Computer Modelling
- Engineering Design and Drafting
- Engineering Design Project
- Engineering Dynamics
- Engineering Mechanics
- Engineering Physics
- Engineering Project Management and Sustainable Design
- Engineering Research Methodology and Management
- Fluid Dynamics
- Introduction to Vibration Analysis
- Machine Dynamics Vibration
- Machine System Design
- Manufacturing Engineering
- Materials in Engineering
- Measurement and Computer Instrumentation
- Mechanics of Solids
- Mechanism & Machine Theory
- Modelling and Change
- Modelling and Simulation
- Modelling Continuous Change
- Professional Engineering
- Professional Practice (12 weeks)
- Robotics
- Secrets of the Matrix
- System Dynamics and Control
- Thermodynamics
- Thermofluids
- Engineering Project – undertaken over 2 semesters, culminating in a presentation and dissertation.

Correct at time of printing. Study areas and majors are subject to change. Please refer to study.federation.edu.au
Bachelor of Mechatronic Systems Engineering (Honours)

**Duration**
4 years FT or PT equivalent

**Location**
Gippsland Campus (Churchill)
Off-campus/Online#

**Application**
VTAC/Direct

**Entry Requirements** (Refer to page 1 for full details)

**Year 12:** Units 3 and 4: a study score of at least 20 in one of Maths: Mathematical Methods or Maths: Specialist Mathematics; and a study score of at least 20 in any English; or interstate/overseas equivalent.

**Non-Year 12:** HIE, VET and/or work/life experience.

**Extra Requirements**

**Non-Year 12:** Applicants applying based on work/life experience must complete a personal statement.

**Application**

**Year 12 applicants will be ranked for admission based on ATAR and relevant adjustments. Refer to page 1 for details.**

**Career opportunities**

As a mechatronics engineer you will apply mechanical, electronics and software design to create products and processes to meet market needs. Your skills are required in sectors such as manufacturing and process automation, transportation (automotive, rail, aviation and navy), power production, mining and resources, agriculture and forestry. Job areas include: robotics and process automation, data communication and networks, smart infrastructure, security systems, processing and packaging, scientific equipment design, self-diagnostic machinery, plant design and management.

**What will you study?**

- Advanced Control Systems Engineering
- Analog and Digital Electronics
- Digital and Embedded Systems
- Digital Imaging and Artificial Intelligence
- Electrical and Electronic Drives and Actuators
- Engineering Computer Applications and Interactive Modelling
- Engineering Computer Modelling
- Engineering Design and Drafting
- Engineering Design Project
- Engineering Mechanics
- Engineering Physics
- Engineering Project Management and Sustainable Design
- Engineering Research Methodology and Management
- Fluid and Pneumatic Control
- Industrial Robotic Systems
- Intelligent Mechanisms Design
- Materials in Engineering
- Mechanism and Machine Theory
- Mechatronics Components Design
- Modelling and Change
- Modelling Continuous Change
- Professional Engineering
- Professional Practice (12 weeks)
- Secrets of the Matrix
- Sensors and Artificial Perception
- System Dynamics and Control
- Terotechnology and Life Cycle Costs
- Engineering Project – undertaken over 2 semesters, culminating in a presentation and dissertation.

Correct at time of printing. Study areas and majors are subject to change. Please refer to study.federation.edu.au

**Stuart Cilia**

**Bachelor of Mechatronic Systems Engineering (Honours)**

I was able to follow the pathway into the Bachelor degree from TAFE. Although I didn’t originally intend on going into mechatronics it suited my strengths and presented a good way of moving into a career.
Further study options

**Graduate Certificate in Maintenance Management**

- **Duration**: 1 year PT
- **Location**: Off-campus/Online
- **Application**: Direct
- **Entry Requirements** (Refer to page 1 for full details)
  
  A three-year degree in engineering, science, applied science or appropriate degree program or at least three years of high-level experience and successful completion of two subjects on a non-award basis from the maintenance and reliability engineering course offerings.

**Graduate Certificate in Reliability Engineering**

- **Duration**: 1 year PT
- **Location**: Off-campus/Online
- **Application**: Direct
- **Entry Requirements** (Refer to page 1 for full details)

  A three-year degree in engineering, science, applied science or appropriate degree program or at least three years of high-level experience and successful completion of two subjects on a non-award basis from the maintenance and reliability engineering course offerings.

**Credit for prior studies**

Students may articulate with full credit for all units successfully completed from the Graduate Certificate in Reliability Engineering or the Graduate Diploma in Engineering Maintenance Management.

Students may be eligible for credit from other previous postgraduate studies. A maximum of 25 percent of the program requirements for other postgraduate level studies not considered for any award may be credited. Credit or exemptions will not be granted for undergraduate qualifications. Credit is assessed on an individual basis.

Students entering the Master program with a four year honours degree in engineering or with a Bachelor’s degree and a minimum of 3–5 years relevant work experience may be eligible for exemptions for a maximum of 60 credit points.
Graduate Diploma in Engineering Maintenance Management

<table>
<thead>
<tr>
<th>Duration</th>
<th>2 years PT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Off-campus/Online</td>
</tr>
<tr>
<td>Application</td>
<td>Direct</td>
</tr>
<tr>
<td>Entry Requirements</td>
<td>(Refer to page 1 for full details)</td>
</tr>
</tbody>
</table>

A recognised degree in Engineering or a related area, together with at least two years of work experience, or completion of the Graduate Certificate in Maintenance Management or the Graduate Certificate in Reliability Engineering.

Successful graduates of the Graduate Diploma of Engineering Maintenance Management can progress to the Master of Maintenance and Reliability Engineering.

This program is designed for engineers and other technical people who are involved with asset management of industrial, public sector or defence systems.

Through successful completion of this program, graduates can make a positive contribution to their companies’ performance. Study includes; reliability and application of data, condition modelling (CM) techniques, risk engineering, and a Monte Carlo simulation. The program also includes leadership and management techniques, planning and application of maintenance and maintenance strategies, terotechnological aspects of engineering economics and accountancy and implementation of maintenance planning systems, asset operations optimisation.

Master of Maintenance and Reliability Engineering

<table>
<thead>
<tr>
<th>Duration</th>
<th>2 years PT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
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<td>Direct</td>
</tr>
<tr>
<td>Entry Requirements</td>
<td>(Refer to page 1 for full details)</td>
</tr>
</tbody>
</table>

Applicants should have a Bachelor of Engineering degree with honours, or have completed the Graduate Diploma in Engineering Maintenance Management with an average result of 65%. In certain circumstances, applicants with a Bachelor of Engineering pass degree or other appropriate degree together with honours equivalent work experience may be admitted.

Increase your value in the workplace along with your specialised knowledge with our well recognised program.

As a professional asset manager who helps ensure that industrial assets work more efficiently, your work directly relates to the profitability of businesses. We’ll walk you through terotechnology and lifecycle costs, risk engineering, reliability applications, maintenance, and asset management, so that you can become the best in your industry.

David So
Sustainment Analysis Engineer, Raytheon Australia

I am based in Perth, and we have several locations over Australia. The flexibility of having online study is one of the highlights about this program, coupled with access to the study material and lecturers with the assurance that queries are responded to in a timely manner. Having touched on topics like life cycle costing, terotechnology and capital expenditure analysis, I expect to be able to provide further value for future bid work as well as continue to develop effective task plans.

Having been asked by our corporate division to undertake this course, I’ve been fortunate to be supported by the company financially (100% funded). I have also been provided with some time off to study for exams. On completion, I believe this program will assist me in obtaining my Chartered Professional Engineering qualification and will continue to open doors either within, or outside Raytheon Australia.
Further study options

### Graduate Diploma of Mining

- **Duration**: 2 years FT or PT equivalent
- **Location**: Mt Helen Campus (Ballarat), Off-campus/Online
- **Application**: Direct

The Graduate Diploma in Mining was created with the working engineer in mind. Intended as continuing education for scientists and engineers already involved with the mining industry. The course is expected to appeal particularly to civil, mechanical, electrical, chemical and construction engineers, geologists, metallurgists, surveyors and other professionals with an interest in mining practice.

This course will build upon the knowledge already gained from invaluable industry experience.

### Master of Mining Engineering

- **Duration**: 1.5 years to maximum of 3 years (FT equivalent)
- **Location**: Mt Helen Campus (Ballarat), Off-campus/Online
- **Application**: Direct

Applicants should have a three or four year degree in Mining Engineering, or have completed a Graduate Diploma of Mining from the Federation University Australia, the Western Australian School of Mines or the University of New South Wales. Alternatively candidates must possess a four-year degree in Mining Engineering, from a college or university recognised by the National Office of Overseas Skills Recognition (NOSR) as awarding degrees that are comparable to the education level of an Australian bachelor degree.

Mining engineers are in high demand in our region and beyond and often enjoy excellent income rates. Make the most of our program’s flexibility, which allows you to work full time while studying.

You’ll become highly skilled as you learn advanced concepts and skills across a range of mining engineering subjects. You can also focus on an area of interest with a research component.

We’ll guide you through the fundamental engineering concepts at an advanced level. You will explore technical systems, apply the visualisation of three-dimensional space and discover your responsibilities in relation to the environment and sustainable development.

Our graduates are employed as mining engineers, mine planning engineers, mine managers, ventilation officers and engineers in geotechnical roles as consultants and many other roles.

### Master of Engineering Technology (Civil Engineering/ Mechanical Engineering/ Mining Engineering)

- **Duration**: 2 years FT or PT equivalent
- **Location**: Mt Helen Campus (Ballarat)
- **Application**: Direct

Candidates must possess a three year Bachelor of Engineering Science, Bachelor of Engineering Technology or Bachelor of Engineering degree, with a GPA of 5, to be eligible to enrol in the Master of Engineering Technology course.

As a civil engineering graduate, you will have developed advanced skills together with the knowledge and appreciation of the environment, sustainable development, social and political aspects that impact upon the work of the civil engineer.

As a mechanical engineer you will apply the principles of physics and mechanical science to the design and construction of all forms of mechanical systems.

As a professional mining engineer you will oversee teams of engineering technologists and skilled trade staff to construct the designs that you have created. You will work at a theoretical level to isolate, analyse and define a required engineering outcome.

**Professional recognition**

This course is fully accredited by Engineers Australia.

Note: You apply to enrol only in a stream (or discipline) which matches the stream (or discipline) in which you obtained your Bachelor degree/s. This is stipulated by the regulations set by the accrediting professional body (EA).
Master of Engineering Science

Duration: Minimum of 1.5 years to a maximum of 2 years (FT equivalent)
Location: Mt Helen Campus (Ballarat)
Gippsland Campus (Churchill)
Application: Direct
Entry Requirements (Refer to page 1 for full details)

To be eligible for admission as a Candidate for a Masters by research degree a person must:
• have graduated with or qualified for a four year Honours Bachelor degree, or Degree with Honours, at least second class honours level, that included a dissertation demonstrating the ability to undertake research at Masters level; or
• hold qualifications and/or have demonstrated skills, experience, research, or publications which are assessed as being at least equivalent to the qualifications above.

The degree is awarded on the basis of an externally examined thesis of approximately 40,000 words. The thesis must demonstrate a command of the knowledge and skills pertinent to the area of investigation as well as a critical appreciation and understanding of the relationship of the work to that of others.

Jeremy Courtney Jones
Master of Engineering Technology (Mechanical Systems)
Bachelor of Engineering Science (Mechanical)
Bachelor of Applied Computing

Engineering has been my family’s profession for many generations, but I have always been interested in computers from an early age, so a dual degree for my undergraduate made sense. After working out in industry for a few years, I have developed a passion for project management, and chose the masters to improve my technical understanding to facilitate better career outcomes.

The University offered a combination of Engineering/Computing which suited my interests, the open day was a useful opportunity to visit the University, meet staff and students. Moving out of home for the first time, Ballarat is an exciting and vibrant place to be, whilst not too overwhelming and a great social community at the university.

I enjoyed the hands on nature of the engineering courses and the smaller class sizes allowed for additional support from staff. The computing degree allowed for flexibility in selected classes which allowed me to study my interest areas.

My current career goals are to build my skill set and knowledge base in the telecommunications/technology industry to work into a technical project management role.

Advanced Research
PhD level and Advanced Research is carried out in a diverse range of areas.

We bring together a cross-disciplinary group with strengths in geotechnical and hydrogeological engineering, condition monitoring and mechatronics, modelling and mining and resources engineering.

Field and laboratory based investigations of materials and processes combined with advanced modelling are core activities of the group.

The thematic group has a strong track record of engaging with industry in a national and international context attracting substantial external income to support its activities. We are focused on collaborative activities with external stakeholders to enhance the human and natural environment.

federation.edu.au/research
Open Day 2018
Sunday, 26 August 2018
Ballarat, Berwick and Gippsland

1800 333 864 (1800 FED UNI)
federation.edu.au

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