

# BUILT ENVIRONMENT (ENGINEERING)

University courses - Victoria

AUGUST 2021

CAREERS DEPARTMENT





# INTRODUCTION

This document has been developed to assist domestic Year 12 students and their families in researching built environment (architectural, civil and structural engineering) courses in Victoria. Please use entry requirements and indicative ATARs listed in this document as a guide only and check university websites for updates.

**Disclaimer:** information taken from university websites and VTAC. Universities featured in this guide reserve the right to change course information, admissions and entry requirements at any time and without notice.

Note: Monash University has requested to not be included in this brochure.

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## Indicative ATAR

The lowest selection rank (ATAR plus adjustment factors such as academic and equity adjustments) for the 2021 January intake. Please use indicative ATARs as a guide as they may change for future intakes.



## English prerequisite

EAL = English as an Additional Language. 'Any other English' includes English, English Language and Literature.



## Undergraduate

This is usually your first course at university. For example - bachelor's degree.



## Graduate

This is study you do once you have graduated from a bachelor's degree. For example – Graduate Diploma.



## ARCHITECTURAL ENGINEERING

University	Course	Campus	Indicative ATAR
Victoria University	Bachelor of Engineering (Honours) (Architectural Engineering)	Footscray Park	ATAR wasn't used for the 2021 intake
Swinburne University	Bachelor of Engineering (Honours)	Hawthorn	75.00
	Bachelor of Engineering (Honours) (Professional)		85.00
The University of Melbourne	Design pathway	Parkville	
	Bachelor of Design		85.00
	Bachelor of Design (Chancellor's Scholar)		99.90
	Science pathway		
	Bachelor of Science		85.00
	Bachelor of Science (Chancellor's Scholar)		99.90
	Master of Architectural Engineering		Graduate entry

## CIVIL ENGINEERING

University	Course	Campus	Indicative ATAR
RMIT University	Bachelor of Engineering (Civil & Infrastructure)	Melbourne City	80.15
	Bachelor of Engineering (Honours)		78.05
Swinburne University	Bachelor of Engineering (Honours)	Hawthorn	75.00
	Bachelor of Engineering (Honours) (Professional)		85.00
Deakin University	Bachelor of Civil Engineering (Honours)	Melbourne Burwood	70.15
		Geelong Waurin Ponds	68.15
		Cloud	NP
The University of Melbourne	Design pathway	Parkville	
	Bachelor of Design		85.00
	Bachelor of Design (Chancellor's Scholar)		99.90
	Bachelor of Design / Master of Engineering (Graduate Degree Package)		96.00
	Science pathway		
	Bachelor of Science		85.00
	Bachelor of Science (Chancellor's Scholar)		99.90
	Bachelor of Design / Master of Engineering (Graduate Degree Package)		96.00
	Master of Civil Engineering		Graduate entry
Victoria University	Bachelor of Engineering (Honours) (Civil)	Footscray Park	ATAR wasn't used for 2021 intake
La Trobe University	Bachelor of Civil Engineering (Honours)	Melbourne Bundoora	66.00
		Bendigo	71.80
Federation University	Bachelor of Engineering (Civil) (Honours)	Ballarat – Mt Helen	60.00
		Gippsland – Churchill	60.00
Melbourne Polytechnic	Bachelor of Engineering (Civil) (Honours)	Epping	50.00



# ARCHITECTURAL ENGINEERING



## SWINBURNE UNIVERSITY

[www.swinburne.edu.au](http://www.swinburne.edu.au)

Engineers are great at technical solutions. Architects are amazing at designing spaces that are right for the user and environment.

Put the skillsets together and you get architectural engineers, the superhumans who straddle the divide and excel at better, more holistic answers.

Combine logic and imagination to engineer awe-inspiring buildings. Creating the aesthetics of buildings is an incredible feat, but devising the structural systems that keep them soundly in place is an even greater challenge – requiring precision, logic and imagination.

That's why Swinburne offers an innovative architectural engineering course – aimed to give students the theory and flair to enter the industry.

Choose to study architectural engineering at Swinburne and you'll find yourself immersed in both foundational engineering disciplines in the classroom, and practical projects in studio spaces.

### Course options

There are two course options to choose from:

Option 1: Bachelor of Engineering (Honours) majoring in Architectural (4-years)

Option 2: Bachelor of Engineering (Honours) (Professional) majoring in Architectural (5-years).

The content is the same, but you will have access to a year of paid industry experience in the Professional degree.

### Combined degrees

Students can apply to combine the Bachelor of Engineering (Honours) with one of the following degrees:

- Bachelor of Business
- Bachelor of Science
- Bachelor of Laws
- Bachelor of Computer Science

### Professional Recognition

Graduates are eligible to apply for graduate membership of Engineers Australia.

### Early Entry

Swinburne Early Entry program, <https://bit.ly/2WiPub5>

### Pathways

Visit <http://bit.ly/2ybADGx>

Course	Prerequisites	Campus	Guaranteed ATAR
Bachelor of Engineering (Honours) (Professional)	Minimum study scores of 30 in English (EAL) or 25 in any other English; and 20 in Mathematical Methods (CAS) or equivalent.	Hawthorn	85.00
Bachelor of Engineering (Honours)	As above		75.00

## VICTORIA UNIVERSITY

[www.vu.edu.au](http://www.vu.edu.au)

### Bachelor of Engineering (Honours) (Architectural Engineering)

Gain the expertise you need to integrate structural systems into architects' plans, meeting project design, safety and environmental goals.

This course covers the processes behind constructing safe buildings, with an emphasis on sustainable design. It also encompasses elements of other engineering disciplines, including mechanical, electrical and fire protection.

Areas of study include:

- architectural history and design of buildings
- air conditioning, lighting and electrical power distribution
- water supply and distribution
- fire and life safety systems
- sustainable building systems design
- building structures and building construction technology.

### Global exchange

Architectural engineering students can take advantage of six-month placements at the University of Nebraska in Omaha, home to some of the largest engineering and construction companies in the US.

### Industry experience

You will complete 12-weeks of industry experience.

### Professional recognition

Graduates are eligible to apply for graduate membership of Engineers Australia.

### Pathway options

There are pathway options available. View information under 'pathways and credits' <https://bit.ly/2KIDvNV>

Course	Prerequisites	Campus	Indicative ATAR
Bachelor of Engineering (Honours) (Architectural Engineering)	Minimum study scores of 25 in English (EAL) or 20 in any other English; and 20 in any Mathematics.	Footscray Park	ATAR wasn't used for entry in the 2021 intake.

## THE UNIVERSITY OF MELBOURNE

<https://bit.ly/2z653ud>

The University of Melbourne offers an accredited architectural engineering qualification at the graduate level. Applicants will need to complete an undergraduate degree first.

The following are suggested study pathways at The University.

### Via the Bachelor of Design

Step 1: Choose the 3-year Bachelor of Design and major in either Architecture or Civil Systems. For both majors, you will be required to choose additional subjects that are prerequisites for the Master of Architectural Engineering.

Step 2: Complete the 3.5-year Master of Architectural Engineering.

### Via the Bachelor of Science

Step 1: Choose the 3-year Bachelor of Science and major in Civil Systems. You will be required to choose additional subjects that are prerequisites for the Master of Architectural Engineering.

Step 2: Complete the 3.5-year Master of Architectural Engineering.

### Course information

As a Master of Architectural Engineering student, you will gain an internationally-recognised qualification in the architectural, engineering and structural design of buildings.

The degree is highly transferable across industries in different countries.

You will be taught by a world-class group of experts drawn from the Melbourne School of Engineering and the Faculty of Architecture, Building and Planning.

Linkages between the study programs will be explored via a dedicated architectural engineering capstone/thesis subject.

The final year is fully integrated, which means you bring together your skills and knowledge from both disciplines and use them to work on a practical project.

### Professional Recognition

This degree is designed to meet the accreditation requirements of:

- Australian Institute of Architects (AIA)
- Architects Registration Board of Victoria (ARBV)
- Commonwealth Association of Architects (CAA)
- Engineering Australia provisional accreditation

Course	Prerequisites	Campus	Minimum ATAR
Bachelor of Design	Minimum study scores of: 30 in English (EAL) or 25 in any other English and 25 in Mathematics Methods, or equivalent, for the Civil Systems major - <a href="https://bit.ly/3efg5x0">https://bit.ly/3efg5x0</a>	Parkville	85
Bachelor of Science	Minimum study scores of: 30 in English (EAL) or 25 in any other English; 25 in Mathematical Methods or Specialist Mathematics; and 25 in one of Biology, Chemistry or Physics. OR: Minimum study scores of: 30 in English (EAL) or 25 in any other English; 25 in Mathematical Methods AND Specialist Mathematics.	Parkville	85
Master of Architectural Engineering	Detailed entry requirements - <a href="https://bit.ly/2VvIKXI">https://bit.ly/2VvIKXI</a>	Parkville	Graduate entry

# CIVIL & STRUCTURAL ENGINEERING

Civil Engineers plan, design, organise and oversee the construction and operation of dams, bridges, pipelines, gas and water supply schemes, sewerage systems, airports and other civil engineering projects.

Engineers Australia,  
<http://bit.ly/2wXpacL>

Job Outlook information -  
<https://joboutlook.gov.au/>



## RMIT UNIVERSITY

[www.rmit.edu.au](http://www.rmit.edu.au)

### Bachelor of Engineering (Civil and Infrastructure) (Honours)

There are two course options to choose from:

Option 1: Bachelor of Engineering (Civil and Infrastructure) (Honours).

Option 2: Bachelor of Engineering (Honours). You can choose the Civil and Infrastructure major.

Both courses will give you the same outcome and both are accredited, option 2 doesn't require you have Mathematical Methods.

### Combined degree

Students can apply to combine the Bachelor of Engineering (Civil and Infrastructure) (Honours) with the Bachelor of Business.

### Career outcomes

Civil and infrastructure engineers plan, design, construct, supervise, manage and maintain the essential infrastructure of our modern community.

This includes roads, bridges, water supply schemes, sewerage systems, transportation systems, harbours, airports, railways, factories and large buildings.

They look at ways to extend the life of existing structures through fault identification and establishing proactive maintenance schedules.

Civil engineers work as project managers, design engineers and engineering asset managers with consultancies, local government, road authorities, mining companies and construction companies.

### Industry experience

You will complete 12-weeks of industry experience.

### Professional recognition

Graduates are eligible to apply for graduate membership of Engineers Australia.

### Pathway options

There are pathway options available including packaged degrees, <https://bit.ly/35fATAm>

Course	Prerequisites	Campus	Indicative ATAR
Bachelor of Engineering (Civil and Infrastructure) (Honours)	Minimum study scores of 30 in English (EAL) or 25 in any other English; and 20 in one of Mathematical Methods or Specialist Mathematics.	Melbourne City	80.15
Bachelor of Engineering (Honours), major in Civil and Infrastructure	Minimum study scores of 30 in English (EAL) or 25 in any other English; and 20 in any Mathematics		78.05



## SWINBURNE UNIVERSITY

[www.swinburne.edu.au](http://www.swinburne.edu.au)

**There are two course options to choose from:**

Option 1: Bachelor of Engineering (Honours) majoring in Civil or Construction (4-years)

Option 2: Bachelor of Engineering (Honours) (Professional) majoring in Civil or Construction (5-years).

The content is the same, but you will have access to a year of paid industry experience in the Professional degree.

### Global opportunities

Students can apply to undertake a study tour to Malaysia, Turkey or India to get hands-on practical experience and work with local communities.

## Majors

### Choose from Civil or Construction

Gain technical expertise and management skills needed to plan, design, construct and maintain infrastructure (civil) or facilities (construction) such as buildings, bridges, dams, water supply systems, waste treatment systems, road and rail networks, airports and seaports.

### Professional Recognition

Graduates are eligible to apply for graduate membership of Engineers Australia.

### Pathway options

If you don't receive an offer for the engineering degrees, there are pathway options available. Visit <https://bit.ly/2ybADGx>

## Combined degrees

Students can apply to combine the Bachelor of Engineering (Honours) with one of the following degrees:

- Bachelor of Business
- Bachelor of Science
- Bachelor of Laws
- Bachelor of Computer Science

### Early Entry

Swinburne Early Entry program, <https://bit.ly/2WiPub5>

Course	Prerequisites	Campus	Guaranteed ATAR
Bachelor of Engineering (Honours) (Professional)	Minimum study scores of 30 in English (EAL) or 25 in any other English; and 20 in Mathematical Methods (CAS) or equivalent.	Hawthorn	85.00
Bachelor of Engineering (Honours)	As above	Hawthorn	75.00

## DEAKIN UNIVERSITY

[www.deakin.edu.au](http://www.deakin.edu.au)

### Bachelor of Civil Engineering (Honours)

Explore a diverse range of civil engineering disciplines related to structural, water, geotechnical, transportation engineering and civil engineering materials, then put the theory you learn into practice in Deakin's world-class, multi-million-dollar engineering precinct.

With hands-on experience, you will realise and validate your designs through combinations of computer simulation and testing.

Key facilities available to civil engineering students include the geotechnical (soil and rock) testing lab, hydraulics and hydrology lab and two structural testing laboratories.

You will also have access to a range of other facilities including 3D printers, a materials science corrosion and polymer lab, concrete and structural testing facilities and CNC machining centres.

### Global opportunities

There is a variety of overseas study opportunities for Engineering at Deakin. We offer study tours and work integrating learning experiences in many countries; including Malaysia, China, Sweden and others.

## Design-based learning

Through project-oriented design-based learning (PODBL), you'll spend 50 per cent of every trimester learning via team-based projects, in which you take real-world industry problems and research, design, test and evaluate solutions, with the support of an academic.

### Industry experience

You will complete at least 12-weeks of industry experience.

### Professional Recognition

Graduates are eligible to apply for graduate membership of Engineers Australia.

Course	Prerequisites	Campus	Indicative ATAR
Bachelor of Civil Engineering (Honours)	Minimum study scores of 25 in English (EAL) or 20 in any other English; and 20 in one of Mathematical Methods or Specialist Mathematics.	Melbourne Burwood Geelong Waurin Ponds Cloud	70.15 68.15 NP

## VICTORIA UNIVERSITY

[www.vu.edu.au](http://www.vu.edu.au)

### Bachelor of Engineering (Honours) (Civil Engineering)

This course covers the planning, design, construction and management of essential infrastructure. This includes:

- commercial and industrial buildings
- water supply and wastewater systems
- irrigation, drainage and flood protection systems
- bridges, roads and transport systems
- port harbour and airport facilities.

VU's civil engineering graduates are known in the industry as well-rounded, accredited engineers. Our focus on practical teaching and work experience will have you job-ready on graduation.

As a civil engineer, you can run your own practice, or find work in a wide range of government departments, private consulting firms, or major construction companies.

Consulting and contract engineering roles include planning and design, operations and construction.

### Professional Recognition

Graduates are eligible to apply for graduate membership of Engineers Australia.

### Industry experience

You will complete at least 12-weeks of industry experience.

### Global exchange

We have the largest international exchange program in Victoria with an extensive network of partners, <https://bit.ly/2KSrP97>

### Pathway options

There are pathway options available. View information under 'pathways and credits' <https://bit.ly/2KJ3Z1M>

Course	Prerequisites	Campus	Indicative ATAR
Bachelor of Engineering (Honours) (Civil Engineering)	Minimum study scores of 25 in English (EAL) or 20 in any other English; and 20 in any Mathematics.	Footscray Park	ATAR wasn't used for entry in the 2021 intake.

## THE UNIVERSITY OF MELBOURNE

<https://study.unimelb.edu.au/>

The University of Melbourne offers accredited civil engineering and structural engineering qualifications at the graduate level. Applicants will need to complete an undergraduate degree first.

The following are suggested study pathways.

### Civil Engineering

#### Step 1: Undergraduate

Complete the 3-year Bachelor of Science or the Bachelor of Design at the University with a major in Civil Systems.

#### Step 2: Graduate

Complete the 2-year Master Civil Engineering

### Structural Engineering

#### Step 1: Undergraduate

Complete a 3 or 4-year degree in Civil or Structural Engineering.

#### Step 2: Graduate

Complete the Master of Engineering Structures.

### Civil or Structural?

#### Civil

Gain advanced civil engineering skills, guided by experts in infrastructure design, water resource management and transport engineering.

#### Structural

Be guided by structural engineering experts in earthquake and blast-resistant technologies. Learn to design and develop materials and systems to protect buildings, bridges and other vital structures.

### Professional Recognition

The Master degrees are accredited by Engineers Australia.

### Guaranteed entry

Applicants can secure guaranteed entry into the Master of Civil Engineering via acceptance into one of the following programs:

#### Graduate Degree Packages.

<https://bit.ly/2VccVml>

- Bachelor of Design / Master of Engineering
- Bachelor of Science / Master of Engineering

#### Melbourne Chancellor's Scholars.

<https://bit.ly/3abwzDp>

- Bachelor of Design (Chancellor's Scholar)
- Bachelor of Science (Chancellor's Scholar).

Course	Prerequisites	Campus	Minimum ATAR
Bachelor of Design	Minimum study scores of: 30 in English (EAL) or 25 in any other English; and 25 in Mathematical Methods (or equivalent).	Parkville	85
Bachelor of Science	Minimum study scores of: 30 in English (EAL) or 25 in any other English; 25 in Mathematical Methods or Specialist Mathematics; and 25 in one of Biology, Chemistry or Physics. OR: Minimum study scores of: 30 in English (EAL) or 25 in any other English; 25 in Mathematical Methods AND Specialist Mathematics.	Parkville	85



## LA TROBE UNIVERSITY

[www.latrobe.edu.au](http://www.latrobe.edu.au)

### Bachelor of Civil Engineering (Honours)

La Trobe's Bachelor of Civil Engineering will help you meet the diverse challenges of civil engineering anywhere in the world. Learn the basics of electrical, mechanical and electronic engineering.

Gain in-depth knowledge of geotechnical, hydraulic, transport and structural engineering.

You'll be equipped to think and act beyond the boundaries of traditional engineering and deliver sustainable, creative solutions to complex technical problems.

### What you will learn

**Sustainable infrastructure:** Gain a grounding in the design and production of renewable energy systems.

**Civil construction:** Understand civil engineering from a design, practical and project management perspective.

**Water resources:** Water engineering is an essential component of civil engineering. Learn about fluid dynamics, hydraulic systems, hydrological cycles, water quality, water management and water treatment.

**Transport engineering:** Analyse and design multimodal transport facilities, road and pavement structures.

**Surveying:** Take measurements of the earth's surface and perform calculations to produce maps and drawings for civil engineering design and construction.

**Computer aided design:** Use computers and software to design, improve and assess civil engineering projects.

### Professional Recognition

Graduates are eligible to apply for graduate membership of Engineers Australia.

### Industry experience

You will complete at least 12-weeks of industry experience.

You can also gain industry experience, with the opportunity for a six-month work integrated learning (WIL) supported by a \$10 000 scholarship.

### Career opportunities

La Trobe graduates work on diverse projects all over the world, such as large-scale structural projects and oil rigs, with mining companies, water authorities and local government.

### Entry pathways

Includes information on the Regional Benefits Program and the Aspire Early Admissions Program, <https://bit.ly/2UPULoZ>

Course	Prerequisites	Campus	Indicative ATAR
Bachelor of Civil Engineering (Honours)	Minimum study scores of 25 in English (EAL) or 20 in any other English; and 20 in one of Mathematics (any).	Melbourne Bendigo	66.00 71.80

## FEDERATION UNIVERSITY

<https://federation.edu.au/>

### Bachelor of Engineering (Civil) (Honours)

Civil engineers 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 multistoreyed 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.

### Specialisation

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 Program

Students can apply to take part in a two-year professional development program and receive up to 26 weeks placement and up to \$15,000 in industry scholarship payments, <https://bit.ly/2p1OgDB>

### Professional Recognition

Graduates are eligible to apply for graduate membership of Engineers Australia.

### Scholarship

Earn an ATAR of 80+ and you will be eligible for a Federation High Achievers Scholarship, <https://bit.ly/2CtBONy>

### Pathway options

There are pathway options available. View information under 'pathways/alternate entry', <https://bit.ly/2YgUjU4>

### Early Offer Program

Visit <https://bit.ly/3fjjJbD>

Course	Prerequisites	Campus	Guaranteed ATAR
Bachelor of Engineering (Civil) (Honours)	Minimum study scores of: 20 in any English; and 20 in one of Mathematical Methods or Specialist Mathematics.	Ballarat – Mt Helen Gippsland – Churchill	60.00 60.00

## MELBOURNE POLYTECHNIC

<https://bit.ly/2BcnKu9>

### Bachelor of Engineering Technology (Civil) (Honours)

#### Engineer a bright future

With a degree in civil engineering technology, you can help create our modern world.

Learn how to design and engineer skyscrapers, roads, bridges, water and drainage systems, civil engineers do it all.

Melbourne Polytechnic's Bachelor of Engineering Technology (Civil) was developed with rigorous consultation with industry stakeholders to provide a versatile degree with an option to exit to industry with an Associate Degree after the first two years of study.

The civil engineering industry has been growing very strongly for the past five years and new employment opportunities are anticipated to grow by another 10% by 2023.

With a growing interest in sustainability and finding new ways for our cities to function into the future, civil engineering is more vital than ever.

Developed with industry for versatility, at Melbourne Polytechnic, we pride ourselves on creating industry-ready graduates, and this Bachelor Degree is no different.

Our industry-based teachers bring practical knowledge and hands-on experience to your training.

#### Specialisations

In your third and fourth year, you can choose to specialise in one of the following study areas:

##### Structural engineering

Structural engineering graduates might work in bridge design, highway structures, hydraulic structures or oil, gas and mineral exploration.

##### Municipal/transportation engineering

Municipal/transportation engineering graduates design, maintain and construct public walkways, water supplies and drainage networks, waste management systems, town planning and subdivision or transportation systems.

##### Construction engineering

Construction engineering graduates might work on large infrastructure projects, including highways, airports, ports and dams, bridges, mines and other complex building projects. As a civil engineer, your contribution is limited only by your imagination.

#### Professional Recognition

This program has provisional accreditation from Engineers Australia.

Course	Prerequisites	Campus	Indicative ATAR
Bachelor of Engineering Technology (Civil) (Honours)	Minimum study scores of: 25 in any English; and 25 in one of Mathematical Methods or Specialist Mathematics. Applicants lacking the maths prerequisite will be required to take a bridging course.	Epping	50

