

# Engineering study guide

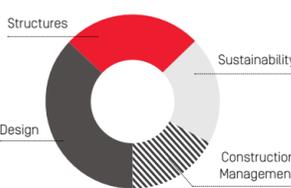
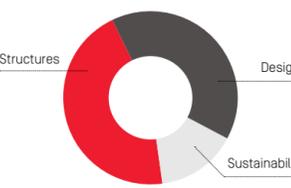
Course options and  
career opportunities

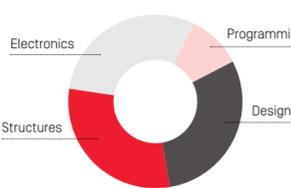
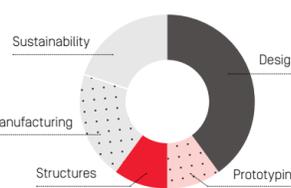
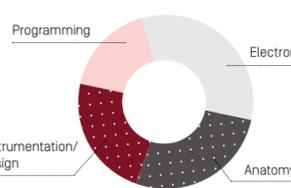
[swinburne.edu.au/engineering](https://swinburne.edu.au/engineering)

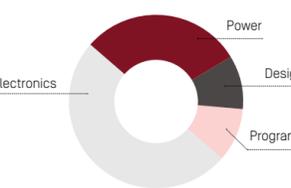
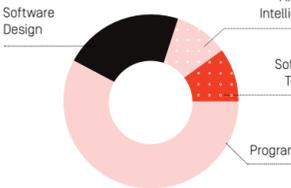


# Innovation for a new generation

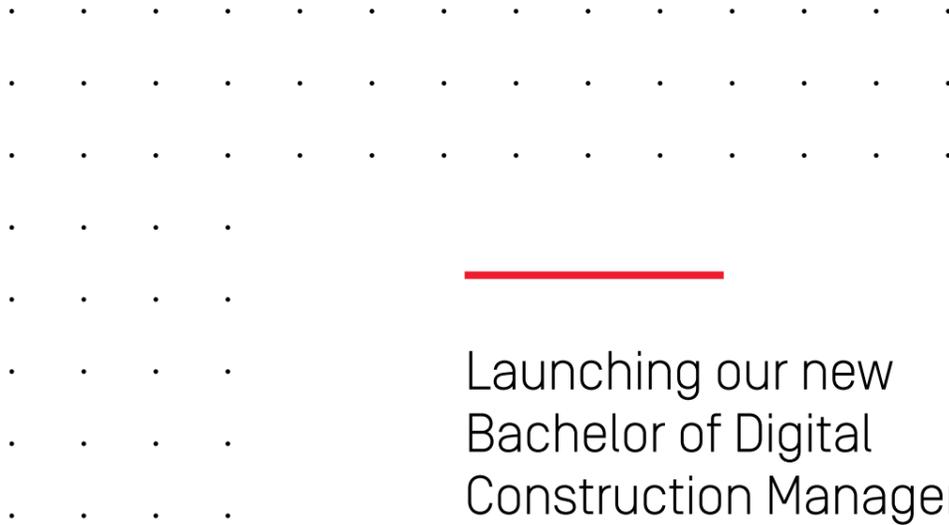
Are you a natural problem solver? Do you love challenging the status quo? Always asking 'how' can it be done better? Say 'hello' to engineering at Swinburne. Civil, mechanical, biomedical, electrical and software engineering are all about finding solutions to life's big problems and improving the way we live.

<p><b>I want to learn</b></p> <p>About designing, building and maintaining infrastructure</p>	<p><b>I want to learn</b></p> <p>How to design beautiful and liveable buildings</p>	<p><b>I want to learn</b></p> <p>How things work and how to make them better</p>
<p><b>Study</b></p> <p>Civil engineering</p> <p><b>To learn about</b></p> 	<p><b>Study</b></p> <p>Architectural engineering</p> <p><b>To learn about</b></p> 	<p><b>Study</b></p> <p>Mechanical engineering</p> <p><b>To learn about</b></p> 
<p><b>With a degree</b></p> <p><b>Bachelor of Engineering (Honours) (Professional)</b> with a major in civil</p> <p><b>Bachelor of Engineering (Honours)</b> with a major in civil</p> <p><i>Pathway to a degree:</i> <b>Diploma of Engineering (UniLink)</b></p>	<p><b>With a degree</b></p> <p><b>Bachelor of Engineering (Honours) (Professional)</b> with a major in architectural</p> <p><b>Bachelor of Engineering (Honours)</b> with a major in architectural</p> <p><i>Pathway to a degree:</i> <b>Diploma of Engineering (UniLink)</b></p>	<p><b>With a degree</b></p> <p><b>Bachelor of Engineering (Honours) (Professional)</b> with a major in mechanical</p> <p><b>Bachelor of Engineering (Honours)</b> with a major in mechanical</p> <p><i>Pathway to a degree:</i> <b>Diploma of Engineering (UniLink)</b></p>
<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Civil engineer</li> <li>• Geotechnical engineer</li> <li>• Water/Environmental engineer</li> <li>• Structural engineer</li> <li>• Transport engineer</li> </ul>	<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Design engineer</li> <li>• Structural system engineer</li> <li>• Architectural engineer</li> <li>• Project engineer</li> </ul>	<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Design engineer</li> <li>• Mechanical engineer</li> <li>• Production engineer</li> <li>• Project engineer or manager</li> </ul>
<p><b>Or an associate degree</b></p> <p><b>Associate Degree of Engineering</b></p>		<p><b>Or an associate degree</b></p> <p><b>Associate Degree of Applied Technologies Associate Degree of Engineering</b></p>
<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Engineering associate</li> </ul>		<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Engineering associate</li> </ul>
<p><b>Or a diploma</b></p> <p><b>Advanced Diploma of Engineering Technology (Civil Engineering Design) (22479VIC)</b></p>		<p><b>Or a diploma</b></p> <p><b>Advanced Diploma of Engineering Technology (Mechanical Engineering Design) (22479VIC)</b></p>
<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Designer or planner</li> <li>• Construction supervisor</li> <li>• Technical officer</li> <li>• Drafting Technician</li> </ul>		<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Drafting technician</li> <li>• Production supervisor or planner or controller</li> <li>• Sales technical officer</li> <li>• Tool designer</li> <li>• Certified welder</li> <li>• Welding supervisor</li> <li>• Technical officer</li> </ul>

<p><b>I want to learn</b></p> <p>How to improve everyday life through automation</p>	<p><b>I want to learn</b></p> <p>How to use technology to design innovative products</p>	<p><b>I want to learn</b></p> <p>How to create devices to improve people's health</p>
<p><b>Study</b></p> <p>Robotics and mechatronics engineering</p> <p><b>To learn about</b></p> 	<p><b>Study</b></p> <p>Product design engineering</p> <p><b>To learn about</b></p> 	<p><b>Study</b></p> <p>Biomedical engineering</p> <p><b>To learn about</b></p> 
<p><b>With a degree</b></p> <p><b>Bachelor of Engineering (Honours) (Professional)</b> with a major in robotics and mechatronics</p> <p><b>Bachelor of Engineering (Honours)</b> with a major in robotics and mechatronics</p> <p><i>Pathway to a degree:</i> <b>Diploma of Engineering (UniLink)</b></p>	<p><b>With a degree</b></p> <p><b>Bachelor of Engineering (Honours) (Professional)</b> with a major in product design</p> <p><b>Bachelor of Engineering (Honours)</b> with a major in product design</p> <p><i>Pathway to a degree:</i> <b>Diploma of Engineering (UniLink)</b></p>	<p><b>With a degree</b></p> <p><b>Bachelor of Engineering (Honours) (Professional)</b> with a major in biomedical</p> <p><b>Bachelor of Engineering (Honours)</b> with a major in biomedical</p> <p><i>Pathway to a degree:</i> <b>Diploma of Engineering (UniLink)</b></p>
<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Design engineer</li> <li>• Project planner or manager</li> <li>• Research and development engineer</li> <li>• Robotics and mechatronics engineer</li> </ul>	<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Product design engineer</li> <li>• Industrial designer</li> <li>• Entrepreneur</li> <li>• Innovation consultant</li> </ul>	<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Biomedical engineer</li> <li>• Clinical engineer</li> <li>• Medical device designer</li> <li>• Medical electronics engineer</li> <li>• Medical imaging technician</li> <li>• Product designer</li> <li>• Project planner or manager</li> <li>• Research and development engineer</li> </ul>
<p><b>Or an associate degree</b></p> <p><b>Associate Degree of Applied Technologies</b></p>	<p><b>Or an associate degree</b></p> <p><b>Associate Degree of Applied Technologies</b></p>	
<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Engineering associate</li> </ul>	<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Engineering associate</li> </ul>	
<p><b>Or a diploma</b></p> <p><b>Advanced Diploma of Engineering Technology (Mechatronics Engineering Design) (22479VIC)</b></p>	<p><b>Or a diploma</b></p> <p><b>Advanced Diploma of Engineering Technology (Mechatronics Engineering Design) (22479VIC)</b></p>	
<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Production supervisor or planner or controller</li> <li>• Technical officer</li> </ul>	<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Production supervisor or planner or controller</li> <li>• Technical officer</li> </ul>	

<p><b>I want to learn</b></p> <p>About circuits and power generation</p>	<p><b>I want to learn</b></p> <p>How to build hardware and program software to solve problems</p>
<p><b>Study</b></p> <p>Electrical and electronic engineering</p> <p><b>To learn about</b></p> 	<p><b>Study</b></p> <p>Software engineering</p> <p><b>To learn about</b></p> 
<p><b>With a degree</b></p> <p><b>Bachelor of Engineering (Honours) (Professional)</b> with a major in electrical and electronic</p> <p><b>Bachelor of Engineering (Honours)</b> with a major in electrical and electronic</p> <p><i>Pathway to a degree:</i> <b>Diploma of Engineering (UniLink)</b></p>	<p><b>With a degree</b></p> <p><b>Bachelor of Engineering (Honours) (Professional)</b> with a major in software</p> <p><b>Bachelor of Engineering (Honours)</b> with a major in software</p> <p><i>Pathway to a degree:</i> <b>Diploma of Engineering (UniLink)</b></p>
<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Communications engineer</li> <li>• Design engineer</li> <li>• Electrical engineer</li> <li>• Power engineer</li> <li>• Product designer</li> <li>• Project planner or manager</li> <li>• Research and development engineer</li> </ul>	<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Embedded systems and mobile application engineer</li> <li>• Quality assurance engineer</li> <li>• Software architect or engineer</li> <li>• Software designer or developer</li> <li>• Systems engineer</li> </ul>
<p><b>Or an associate degree</b></p> <p><b>Associate Degree of Engineering</b></p>	
<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Engineering associate</li> </ul>	
<p><b>Or a diploma or certificate</b></p> <p><b>Advanced Diploma of Engineering Technology - Electrical (UEE62111)</b></p>	
<p><b>To become</b></p> <ul style="list-style-type: none"> <li>• Planning design supervisor</li> <li>• Electrical technician</li> <li>• Systems technician</li> <li>• Project manager</li> </ul>	





## Your next gen\_now upgrades

### Guaranteed real industry experience

At Swinburne, your education is more than reading; with our Work Integrated Learning program, it's doing. Start building your résumé with placements, internships and industry-linked projects while you study. You'll be able to apply your learning in all of our engineering bachelor degrees with eight industry project units; that's one every semester. Guaranteed.

Visit [swinburne.edu.au/workintegratedlearning](http://swinburne.edu.au/workintegratedlearning)

### Professional degrees

More than a standard bachelor degree, a Professional Degree is a premium university experience you'll graduate from having completed a 12-month full-time work placement. Not only will you apply your knowledge in the workplace, you'll be paid award rates and receive academic credit.

### Double degrees

Double degrees are a great way to broaden your study experience and are highly respected by employers. They combine two areas of study and on completion you'll be awarded two degrees.

A double degree is generally only one year longer than a single degree.

Consider combining your Engineering degree with a degree in another study area by studying:

- Bachelor of Engineering (Honours)/Bachelor of Business
- Bachelor of Engineering (Honours)/Bachelor of Computer Science
- Bachelor of Engineering (Honours)/Bachelor of Science
- Bachelor of Laws/Bachelor of Engineering (Honours)
- Bachelor of Engineering (Honours)/Bachelor of Arts

### Applied innovation double degree

Don't just graduate, innovate. By pairing our Bachelor of Applied Innovation with your engineering degree, you'll learn to think like a creator, find opportunities like an innovator and make moves like an entrepreneur.

Visit [swinburne.edu.au/applied-innovation](http://swinburne.edu.au/applied-innovation)

### Pathways to a degree

#### UniLink diplomas

Swinburne UniLink diplomas can offer you seamless connection to a range of our related next-gen degrees – with no extra time or fees.

A Swinburne UniLink diploma could be your pathway to a degree if you:

- are worried about not getting the ATAR you need
- are looking for a little more support to transition into a degree
- didn't complete high school in Australia or;
- missed direct entry to your degree.

After completing the equivalent of eight study units in your UniLink diploma, you can merge straight into your related degree.

#### Certificates and diplomas

Certificates and diplomas are vocational qualifications that provide practical teaching and skills for work. Successful completion of a vocational qualification may help you to prepare for work, or progress to another qualification with advanced standing.

### Scholarships

The Vice-Chancellor's Excellence Scholarship is awarded to students in recognition of academic excellence. Recipients will receive \$5000 per annum for the normal duration of their chosen degree, plus a one-off payment of \$2000 towards an international study experience.

Swinburne also offers scholarships to students from indigenous backgrounds, students suffering from financial hardship and students who have relocated from regional areas to study. For a full list of scholarships, including value and eligibility criteria, visit [swinburne.edu.au/scholarships](http://swinburne.edu.au/scholarships)

## Launching our new Bachelor of Digital Construction Management

Make, well, positively huge things happen in a career in construction management. Stand at the foot of an awe inspiring building and say "yes, I helped build that."

In this exciting new course, develop your essential construction manager leadership, teamwork, project management and resource management skillset – both onsite and in the virtual world.

The construction industry is not only booming with Victoria's Big Build and a Federal government investment of \$110 billion over the decade – it is also going through a massive digital transformation.

And with our Australian-first partnership with a global tech company, Trimble – you'll be at the forefront of the future of the construction industry.

It's the only digital construction management course in the country that gives you access to industry-standard, state-of-the-art hardware and software technology in the Trimble lab.

In this course you'll model and simulate projects for a range of construction management aspects such as time, cost, quality, productivity, safety and sustainability.

With a digital skillset like this – your employability as a construction manager will boom too, landing you in a dynamic, highly paid career when you graduate.

#### Construction Managers\*

Weekly pay \$3450  
Strong future growth  
Very high skill

#### Pre-requisites

VCE Units 3 and 4: a minimum study score of 25 in any English (except EAL) or 30 in English as Alternate Language (EAL) or equivalent



## Why study engineering with us?

Engineering leads to great things. Whether it's biomedical, civil, electrical, mechanical or software engineering, Swinburne delivers all the theoretical and practical skills you'll need to thrive in your career. As for Swinburne itself, see why we're such a great choice:

#100	<b>In the world for civil engineering</b> Academic Ranking of World Universities by subject, 2021
#45	<b>In the world under 50 years old</b> 2021 QS World University Rankings - Top 50 under 50
A\$100 million	Built to the highest specs, our <b>Advanced Manufacturing and Design Centre</b> is a hub for world-leading education and research.
#1 in Australia	<b>Melbourne is Australia's top-ranked student city</b> QS Best Student Cities, 2022

### Want to know more?

[swinburne.edu.au/courses/find-a-course/engineering/construction](http://swinburne.edu.au/courses/find-a-course/engineering/construction)

\*Source [joboutlook.gov.au](http://joboutlook.gov.au)  
The information provided here was correct at the time of printing (January 2023). For the most up-to-date information, please visit our website: [swinburne.edu.au](http://swinburne.edu.au)  
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