2021
ARCHITECTURE, ENGINEERING, TECHNOLOGY, COMPUTER AND MATHEMATICAL SCIENCES
Why the University of Adelaide?

Education that enlightens

Studying with South Australia’s highest ranked university—consistently placed among the world’s top 1%—equips students to be tomorrow’s leaders.

Having learnt from, and with, teachers and researchers who are themselves international leaders in their fields, our graduates are highly regarded and professionally recognised around the globe. What’s more, they’re well prepared to take advantage of the opportunities this recognition can bring; with a complementary emphasis on practical career skills, we’re also the state’s leading university for graduate employability*.

Our long and proud tradition instills confidence in our students. We are Australia’s third-oldest university and have a history of excellence in education spanning more than 145 years.

We are distinguished by a commitment to equality and an ongoing focus on delivering outstanding research for the benefit of society. The University has played key roles in many of the world’s important discoveries and advancements, and our alumni have contributed significantly to shaping the educational, political and social arenas of their day.

At the University of Adelaide, students are taught, supported and inspired to be everything they can be.

* QS Graduate Employability Ranking 2020.
WHY ARCHITECTURE, ENGINEERING, TECHNOLOGY, COMPUTER SCIENCE/IT AND MATHEMATICAL SCIENCES?

We are living in a time of rapid technological advancement. In the context of this disruption, architects, engineers, technologists, computer scientists and mathematicians are driving global change and are front-and-centre in developing practical solutions to the world’s greatest challenges.

The Faculty of Engineering, Computer and Mathematical Sciences (ECMS) offers a range of degrees designed to prepare you for careers of the future.

We’ve worked closely with industry and reinvented our degrees to offer unique learning experiences across a breadth of disciplines, enabling you to graduate as an effective leader and real-world problem-solver.

The University of Adelaide is the only South Australian university ranked in the world’s top 50 for Computer Science and Engineering*. The faculty is home to a number of world-class research institutes and centres where you’ll learn from internationally-renowned academics at the cutting edge of research and discovery.

* Academic Ranking of World Universities 2019

Flexible programs to suit your interests

We understand your interests can change as you learn, so we offer a wide range of disciplines and specialisations. You’ll have the flexibility to choose from key disciplines across engineering, computer science, and mathematics, and opportunities to specialise with an interdisciplinary or discipline-focused major.

We offer double degrees, combined degrees and a flexible entry option if you’d prefer to choose your main engineering discipline after a first year of broad engineering study. There’s also an engineering pathway available if you don’t meet entry requirements.

PRACTICAL AND INDUSTRY-CONNECTED

The faculty has deep industry connections. Studying with us, you’ll apply your knowledge and develop relationships with prospective employers via a range of practical projects, internships, placements and industry led teaching. All our engineering degrees include an eight-week internship work placement.
STATE-OF-THE-ART
FACILITIES

Our six-star green star engineering faculty features world-class, purpose-built teaching and learning facilities available to students throughout their studies. Examples include the state-of-the-art CARM (Computer, Automation, Robotics and Mechatronics) Lab, and our 3D prototyping lab, which features one of the largest 3D printers of its kind in the southern hemisphere.

We offer 24-hour computer suites equipped with the latest discipline-specific software and other specialist facilities, including: acoustic test chambers; laser diagnostic and electron microscopy equipment; a bioprocessing facility; and custom-built laboratories, workshops and tutorial spaces for design work and study.
International experience and global recognition included

Our relationships with highly-ranked universities around the world, and our internationally accredited degrees, provide opportunities for you to travel and study abroad through a range of Global Learning experiences. Overseas study can range from a few weeks to a full academic year and is possible in almost every discipline offered within the faculty.

These experiences are a great way for you to see the world, diversify your studies, add an edge to your CV, and ultimately—should you wish—pursue an international career.

Graduate attributes for careers of the future

As one of our graduates you will meet the highest professional standards in your fields and be ready to lead. Your highly sought-after attributes will include advanced understanding and practical skills in:

- the scientific principles underpinning modern practice
- mathematical analysis and modelling
- communication and leadership
- creative, analytical and critical thinking
- analysing, planning and designing sophisticated systems
- dealing with uncertainty, managing risk and making decisions in complex environments.

ECMS student ambassadors

The faculty’s student volunteer and ambassador program focuses on developing leadership and communication skills and offers a range of benefits to help you stand out as a graduate. This includes a program achievement listed on your academic transcript* and the opportunity to have your volunteer hours count towards the Adelaide Graduate Award.

For more information, visit: ecms.adelaide.edu.au/study-with-us/student-support/student-ambassadors

* Some conditions apply.

FIT UNI INTO LIFE

This diary snapshot is an example of how you may choose to schedule your university study and life. Attendance at university is less structured than at high school. The hours you spend on campus in lectures, tutorials, practicals or in the field—known as ‘contact hours’—depend on the degree you enrol in, your selected study mode (internal, external, online or flexible learning) and course choices.

MONDAY

9am Lecture
10–11am Lecture
12pm Meet Dan and Mia at Grind & Press in Hub Central for lunch
2–4pm Practical, Book Hub Central project room in UNIFIED

TUESDAY

10am Lecture
11am Lecture
12.30pm Adelaide University Engineering Society BBQ on Barr Smith Lawns
2pm Drop into Maths Learning Centre for help with assignment
7pm Uni hockey match

WEDNESDAY

9am Lecture
10–11am Lecture
12pm Lunch at Aroma Cafe in Ingkarni Wardi
1pm Work on assignment at Cat Suite 5
2pm Lecture
3–5pm Tutorial

HANNAH CECCATO
Bachelor of Engineering (Honours) (Civil)

“The Women in STEM Careers program was the best thing I did at University for myself. It gave me opportunities to network with industry and the confidence to give things a try. I strongly recommend the program to anyone who wants to broaden their skillset and learn directly from industry how to best position themselves for the workforce.”

Why Architecture, Engineering, Technology, Computer Science/IT and Mathematical Sciences?
Women in STEM Careers program
Delivered over the course of a year, our Women in STEM Careers program (WISC) is designed to equip female students studying STEM degrees at the University of Adelaide with the skills needed to thrive in their chosen careers.
The program is comprised of practical workshops, personal development sessions, guest lectures, panel sessions and industry networking activities. The personal development sessions focus on strengths-based training, growth mindset, confidence and resilience.

Be part of a community
We’ll prepare you for a successful, long-term career through a range of professional development, networking and extracurricular opportunities. These programs focus on employability, leadership skills, entrepreneurship, building confidence and problem-solving.
A diverse community of student clubs, associations, and membership groups are also available, giving you the opportunity to meet like-minded peers and develop knowledge and networks.
These groups include:

Engineers Without Borders
The University of Adelaide has its own chapter of Engineers Without Borders. Students have the opportunity to get involved with programs and events, including design challenges and school outreach programs. Visit: ewb.org.au/explore/chapters/sa/uofa

Robogals
The South Australian chapter of Robogals—an international organisation aiming to increase female participation in engineering and technology—is a student-run volunteer group that conducts robotics workshops in primary and high schools throughout the state. Visit: robogals.org

Adelaide University Solar Racing Team (AUSRT)
AUSRT is a collection of students and staff who compete in the Bridgestone World Solar Challenge every two years. Visit: ausrt.com

LIFE EXPERIENCE THROUGH GLOBAL LEARNING
www.adelaide.edu.au/global-learning
All students will have the opportunity to study overseas through a range of programs, including student exchange, study tours and summer and winter schools. There are many exciting opportunities in Europe, Asia, the Americas and Africa.

ABORIGINAL AND TORRES STRAIT ISLANDERS
www.adelaide.edu.au/wirltu-yarlu
The University of Adelaide values diversity where the rich cultures of Aboriginal and Torres Strait Islanders are taught, supported and celebrated. Wirltu Yarlu provide a range of services, schemes and preparation programs that are designed to support your desire to gain educational outcomes. Wirltu Yarlu is a place where students can soar to new heights.

WANT TO GET A HEADSTART ON UNI?
www.adelaide.edu.au/headstart
The University of Adelaide’s Headstart scholarship program gives high achieving students the opportunity to study at university while still in Year 12, and have these university studies count towards their SACE and their university aggregate/ATAR.
While studying at the University part-time Headstart students not only have the opportunity to find out what university life is like before they finish school, but also contribute to and benefit from, the diverse cultural and intellectual life of the University of Adelaide.
For further information contact:
Telephone: +61 8 8313 0165
Email: start@adelaide.edu.au

THURSDAY
10am–12pm Tutorial
1pm Lecture
2pm Lecture
3.30-5pm Volunteer for Robogals robotics demonstration
6pm Bar shift

FRIDAY
9am Lecture
10am–1pm Practical
3-4pm Tutorial
9pm Meet up at UniBar

Why Architecture, Engineering, Technology, Computer Science/IT and Mathematical Sciences? 5
THE UNIVERSITY OF ADELAIDE IS THE NUMBER 1 UNIVERSITY IN SOUTH AUSTRALIA

2020 Times Higher Education world ranking

2020 QS World University ranking

2019 Academic Rankings of World Universities (ARWU)

RANKED TOP IN SOUTH AUSTRALIA FOR:

LAW (QS, ERA)

HEALTH (Times Higher Ed, QS, ERA)

NURSING (QS) 9th in Australia Top 50 in the world

ARTS AND HUMANITIES (Times Higher Ed, QS, ERA)

ALL 6 ENGINEERING FIELDS (QS)

SCIENCES (Times Higher Ed, QS, ERA)

COMPUTER SCIENCE (Times Higher Ed, QS, ERA)

MBA (AFR)

MATHEMATICS (QS, ERA)

$182m

The most research income across South Australia (2018)

$40.4m

Received the most ARC and NHMRC funding across South Australia (2018)

ONLY SOUTH AUSTRALIAN UNIVERSITY WITH QS RANKING IN VETERINARY SCIENCE AND DENTISTRY
CAREERS AND STUDY

See below the range of study options in Architecture, Engineering, Technology, Computer or Mathematical Sciences at the University of Adelaide. These are designed to give you the breadth and flexibility needed to pursue a specialisation of interest without locking you into a specific area.

<table>
<thead>
<tr>
<th>BACHELOR OF:</th>
<th>MAJORS</th>
<th>MINORS</th>
<th>PREREQUISITE SAGE STAGE 2 SUBJECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Architectural Design</td>
<td></td>
<td></td>
<td>No subject prerequisites.</td>
</tr>
<tr>
<td>• Engineering (Honours) (Architectural and Structural)</td>
<td>• Renewable Energy</td>
<td>• Pharmaceutical Engineering</td>
<td>Mathematical Methods, Specialist Mathematics and Physics.</td>
</tr>
<tr>
<td></td>
<td>• Minerals Processing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Engineering (Honours) (Chemical)</td>
<td>• Smart Technologies</td>
<td>• Geotechnical Engineering</td>
<td>Mathematical Methods, Specialist Mathematics and Chemistry.</td>
</tr>
<tr>
<td></td>
<td>• Defence Systems</td>
<td>• Structural Engineering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Renewable Energy</td>
<td>• Water Systems Engineering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Construction Management</td>
<td>• Environmental Engineering</td>
<td></td>
</tr>
<tr>
<td>• Engineering (Honours) (Civil)</td>
<td>• Renewable Energy</td>
<td>• Humanitarian</td>
<td>Mathematical Methods, Specialist Mathematics and Physics.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>• Engineering (Honours) (Environmental)</td>
<td>• Smart Technologies</td>
<td></td>
<td>Mathematical Methods, Specialist Mathematics and Chemistry.</td>
</tr>
<tr>
<td></td>
<td>• Defence Systems</td>
<td>• Renewable Energy</td>
<td></td>
</tr>
<tr>
<td>• Engineering (Honours) (Environmental) (Electrical and Electronic)</td>
<td>• Medical Technologies</td>
<td>• Cybersecurity</td>
<td>Mathematical Methods, Specialist Mathematics and Physics.</td>
</tr>
<tr>
<td></td>
<td>• Smart Technologies</td>
<td>• Communication Systems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Defence Systems</td>
<td>• Computer Engineering</td>
<td></td>
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<tr>
<td></td>
<td>• Renewable Energy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Engineering (Honours) (Mechanical)</td>
<td>• Medical Technologies</td>
<td>• Humanitarian</td>
<td>Mathematical Methods, Specialist Mathematics and Physics.</td>
</tr>
<tr>
<td></td>
<td>• Smart Technologies</td>
<td>• Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Defence Systems</td>
<td>• Aerospace Engineering</td>
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<td></td>
<td>• Renewable Energy</td>
<td>• Sports Engineering</td>
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<tr>
<td></td>
<td></td>
<td>• Mechatronics and Robotics</td>
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</tr>
<tr>
<td>• Engineering (Honours) (Mining)</td>
<td>• Mine Automation</td>
<td>• Humanitarian</td>
<td>Mathematical Methods, Specialist Mathematics and Physics.</td>
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<tr>
<td></td>
<td></td>
<td>• Entrepreneurship</td>
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</tr>
<tr>
<td>• Engineering (Honours) (Petroleum)</td>
<td>• Chemical Engineering</td>
<td>• Mechanical Engineering</td>
<td>Mathematical Methods, Specialist Mathematics and Physics.</td>
</tr>
<tr>
<td></td>
<td>• Civil Engineering</td>
<td>• Mining Engineering</td>
<td></td>
</tr>
<tr>
<td>• Engineering (Honours) (Software)</td>
<td>• Smart Technologies</td>
<td>• Entrepreneurship</td>
<td>Mathematical Methods, Specialist Mathematics and Physics.</td>
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<tr>
<td></td>
<td>• Defence Systems</td>
<td></td>
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<tr>
<td>• Engineering (Honours) – Flexible Entry</td>
<td></td>
<td>• Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td>• Engineering (Honours) – Engineering Pathway</td>
<td></td>
<td></td>
<td>Mathematical Methods.</td>
</tr>
<tr>
<td>• Mathematical Sciences</td>
<td>• Applied Mathematics</td>
<td>• Statistics</td>
<td>Mathematical Methods and Specialist Mathematics.</td>
</tr>
<tr>
<td>• Mathematical Sciences (Advanced)</td>
<td>• Pure Mathematics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Mathematical and Computer Sciences</td>
<td>• Applied Mathematics</td>
<td>• Distributed Systems</td>
<td>Mathematical Methods.</td>
</tr>
<tr>
<td></td>
<td>• Artificial Intelligence</td>
<td>• Networking</td>
<td></td>
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<tr>
<td></td>
<td>• Computer Science</td>
<td>• Data Science</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Cybersecurity</td>
<td>• Pure Mathematics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Data and Decision Sciences</td>
<td>• Statistics</td>
<td></td>
</tr>
<tr>
<td>• Computer Science</td>
<td>• Computer Science</td>
<td>• Cybersecurity</td>
<td>Mathematical Methods.</td>
</tr>
<tr>
<td>• Computer Science (Advanced)</td>
<td>• Artificial Intelligence</td>
<td>• Distributed Systems</td>
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<td></td>
<td>• Data Science</td>
<td>• Networking</td>
<td></td>
</tr>
<tr>
<td>• Information Technology</td>
<td>• Cybersecurity</td>
<td>• Artificial Intelligence</td>
<td>No subject prerequisites.</td>
</tr>
<tr>
<td>• Technology (Defence Industries)</td>
<td></td>
<td>• and Machine Learning</td>
<td></td>
</tr>
<tr>
<td>• Technology (Construction)</td>
<td></td>
<td></td>
<td>Mathematical Methods.</td>
</tr>
</tbody>
</table>

Prerequisites are an essential requirement for entry into specific academic programs.

School leavers/applicants with Year 12 qualifications: applicants must obtain a minimum grade of C− or better in SACE Stage 2 subjects prescribed in prerequisites.

Other applicants, including those applying with VET qualifications or STAT results: tertiary preparation programs, bridging courses or alternative pathways may be available for applicants who have not completed prerequisites.
At the University of Adelaide, we want to ensure everyone with a passion for engineering has the opportunity to pursue it.

So we’ve created the Bachelor of Engineering (Honours) – Engineering Pathway for applicants who don’t qualify for direct entry (either through lack of a prerequisite, or a selection rank less than 80), but have achieved a selection rank of 70 or above and successfully completed Mathematical Methods (or equivalent)*.

Don’t have Mathematical Methods?
Maths*Track is a maths bridging course run by the University’s Maths Learning Centre and can be used as a prerequisite in place of Mathematical Methods.

The course is self-paced—which means there are no classes or timetables. You access the course resources yourself when you’re ready and can take as long as you need.

For more information, including cost, visit: adelaide.edu.au/mathslearning/bridging

Support
As a Bachelor of Engineering (Honours) – Engineering Pathway student, you’ll be personally supported to help you choose the necessary courses for a successful transition into your chosen engineering discipline.

First year maths help
First-year maths students have access to a free drop-in service during their studies. Tutors are available to answer questions and offer guidance at any time.

Maths Learning Centre
Our Maths Learning Centre will be available to help you succeed in learning and using maths relating to your coursework at all year levels.

Visit: adelaide.edu.au/mathslearning

* A summer course/electives will be required to catch up on prerequisites.
* See page 16 for more information.

HOW IT WORKS

Apply for the Bachelor of Engineering (Honours) – Engineering Pathway via SATAC.

Ensure you have Mathematical Methods or equivalent*.

Achieve a selection rank of 70 or above.

Received an offer? Accept and commence the engineering pathway.

Use engineering pathway to successfully complete prerequisites*.

Guaranteed transfer into chosen engineering degree.

* If missing this prerequisite, please see our Maths*Track option.
FLEXIBLE ENTRY

Want to study Engineering but unsure what degree?

Our flexible entry option caters for applicants who know they want to be an engineer, but aren’t sure which field to focus on.

This 12-month option introduces and explores a variety of engineering disciplines in a flexible first year of study, enabling you to make a well-informed decision about your preferred career path.

You’ll then transfer into your chosen Bachelor of Engineering (Honours) single, double or combined degree at the completion of the academic year.
Defence Systems

With the Australian Government’s commitment to invest $200 billion in Australia’s defence capabilities—and with many defence organisations now headquartered in South Australia—Adelaide is the best place to study for a career in this strong growth field. This major gives you great opportunities to drive and support defence technologies. The sector has a strong need for highly-skilled professionals to deliver some of the largest and most complex Australian projects. A wide range of engineering careers are on offer—spanning everything from working with aircraft to electrical systems and communications technology.

If specialising in Defence Systems you can undertake courses related to complex systems, human factors and systems engineering, through which you’ll gain experience working with defence organisations in South Australia. This includes the opportunity to develop collaborative final-year projects with industry.

The Defence Systems major is offered in the following engineering degrees:

• Civil Engineering (see p18)
• Electrical and Electronic Engineering (see p22)
• Environmental Engineering (see p19)
• Mechanical Engineering (see p23)
• Software Engineering (see p26).

Medical Technologies

From medical imaging to artificial organs and bionic limbs, advanced technology plays a crucial role in life-changing health solutions for millions around the world; and with ageing populations and rising, global health challenges, its importance is only going to increase.

Our Medical Technologies major offers you the opportunity to learn about the human body and develop technologies that will enhance and sustain lives.

You can study courses related to human physiology and medical instrumentation, through which you’ll gain first-hand experience with health experts. This develops the skills to complete a final-year honours project, building a real-life technological solution in a medical area of interest.

The major is offered in the following engineering degrees:

• Electrical and Electronic Engineering (see p22)
• Mechanical Engineering (see p23).
Smart Technologies
From virtual reality and artificial intelligence to smart homes and cities, the smart technologies of the future will redefine the way we live our lives.

In this exciting field where innovation is key, infrastructure, technology and the Internet work together to improve quality of life, identify issues and enhancements, interpret data and provide options for better and faster solutions.

Specialise in Smart Technologies and you’ll have the opportunity to complete courses related to mobile and wireless systems, computer networks and autonomous systems, through which you’ll gain first-hand experience working with technology companies in South Australia. You will also further hone your skills through a final-year honours project, building a real-life smart-technology solution.

The Smart Technologies major is offered in the following engineering degrees:
• Civil Engineering (see p18)
• Electrical and Electronic Engineering (see p22)
• Environmental Engineering (see p19)
• Mechanical Engineering (see p23)
• Software Engineering (see p26).

Renewable Energy
Developing long-term solutions to meet the world’s rapidly growing energy demands has never been more critical. With energy issues becoming more prevalent, finding new ways to source and provide renewable energy is a global priority.

Specialise in Renewable Energy and you can undertake courses related to biofuels, biomass, renewable power and environmental planning, through which you’ll gain firsthand experience with energy experts in South Australia. This will hone the skills needed for a final-year honours project developing a real-world renewable energy solution.

You’ll graduate with the knowledge and skills to design energy-efficient systems, solve problems related to energy generation and consumption, and contribute to the development of a sustainable future.

The major is offered in the following engineering degrees:
• Chemical Engineering (see p17)
• Civil Engineering (see p18)
• Electrical and Electronic Engineering (see p22)
• Environmental Engineering (see p19)
• Mechanical Engineering (see p23).

Minors offer an extra area of interest, allowing you to develop baseline core subject knowledge applicable in the workforce*.

Entrepreneurship
With an Entrepreneurship-minor you’ll learn how to take the technical knowledge from your degree and create new ventures, in settings ranging from large corporations to small businesses, the not-for-profit sector and community organisations.

All technology advances in the past decade were once just ideas that entrepreneurs brought into reality. You’ll explore the processes, risks, rewards, motivations and societal impacts of innovation and entrepreneurship from regional, national and global perspectives.

Humanitarian
As a Humanitarian-minor student you’ll learn how to have a positive impact on developing-country populations, working in emergency and humanitarian fields.

You’ll conduct design work with a focus on culture, economic background, and political climate, while developing a strong awareness of communities and the people who reside in them. You’ll graduate equipped to solve complex problems and make real-world change.

* Minors can be undertaken with most single or double degrees, but not with a major—with the exception of the Bachelor of Engineering (Honours) (Mechanical), which allows students to take both a major and minor.
Choose subjects at school that will help you prepare for success at university and take advantage of the subject-based entry to some of our most popular degrees. Apply as normal through SATAC, and list the University of Adelaide in your preferences, and we’ll assess your application against your subjects as well as your Selection Rank.

Note: you must complete your SACE and have achieved an ATAR to be considered.

Subject-based pathways are available into:

- Arts
- Commerce
- Engineering
- Health and Medical Science
- Media
- Psychological Science
- Science

### UoA Degree

#### Subject-based entry criteria

<table>
<thead>
<tr>
<th>UoA Degree</th>
<th>Subject-based entry criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Arts</td>
<td>B or better English Literature or English</td>
</tr>
<tr>
<td>(All varieties except Advanced)</td>
<td>B or better Any other Humanities or Social Science subject</td>
</tr>
<tr>
<td>Bachelor of Commerce</td>
<td>B or better English Literature or English</td>
</tr>
<tr>
<td></td>
<td>B or better Specialist Mathematics</td>
</tr>
<tr>
<td></td>
<td>B or better Mathematical Methods</td>
</tr>
<tr>
<td>Bachelor of Engineering (Honours)</td>
<td>B or better English Literature or English</td>
</tr>
<tr>
<td>(Chemical) (Environmental)</td>
<td>B or better Specialist Mathematics</td>
</tr>
<tr>
<td></td>
<td>B or better Mathematical Methods</td>
</tr>
<tr>
<td></td>
<td>C or better Chemistry</td>
</tr>
<tr>
<td>Bachelor of Engineering (Honours)</td>
<td>B or better English Literature or English</td>
</tr>
<tr>
<td>(Architectural and Structural) (Civil) (Mining) (Petroleum) (Software)</td>
<td>B or better Specialist Mathematics</td>
</tr>
<tr>
<td></td>
<td>B or better Mathematical Methods</td>
</tr>
<tr>
<td></td>
<td>C or better Physics</td>
</tr>
<tr>
<td>Bachelor of Health and Medical Science</td>
<td>B or better Biology or Chemistry or Physics</td>
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<tr>
<td></td>
<td>B or better Biology or Chemistry or Physics or Specialist Mathematics or Mathematical Methods or General Mathematics</td>
</tr>
<tr>
<td>Bachelor of Media</td>
<td>B or better English Literature or English</td>
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<tr>
<td></td>
<td>B or better Any other Humanities or Social Science subject</td>
</tr>
<tr>
<td>Bachelor of Psychological Science</td>
<td>B or better English Literature or English</td>
</tr>
<tr>
<td></td>
<td>B or better Specialist Mathematics</td>
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<td></td>
<td>B or better Mathematical Methods</td>
</tr>
<tr>
<td></td>
<td>C or better Mathematics Methods</td>
</tr>
<tr>
<td>Bachelor of Science</td>
<td>B or better Biology or Chemistry or Physics or Specialist Mathematics or Mathematical Methods or General Mathematics</td>
</tr>
</tbody>
</table>
South Australia's biggest STEM student expo

INGENUITY 2020

FREE EVENT
Tuesday 27 October
9.30am - 3.30pm
Adelaide Convention Centre

ecms.adelaide.edu.au/ingenuity
With exciting majors, engineering at the University of Adelaide offers enormous breadth, choice and flexibility to pursue your interests and prepare for dynamic, highly-paid careers in industry growth areas.

At engineering’s core is the ability to take a life-enhancing idea and turn it into reality. Engineers solve some of the world’s most complex challenges by applying specialist skills in mathematics, science, technology and design to create innovative and sustainable structures, systems, devices, machines, materials and processes.

Our degrees cover all engineering disciplines: architectural and structural; chemical; civil, environmental and mining; electrical and electronic; mechanical; petroleum; and software.

**Study at South Australia’s top engineering university**

The University of Adelaide is the only South Australian university ranked in the international Academic Ranking of World Universities top 50 for Computer Science and Engineering**. Our academics are internationally renowned and industry connected.

**Guaranteed entry selection rank**

If you meet your chosen engineering degree’s prerequisites and achieve a selection rank of 80 or above—including any adjustment factors (if eligible)—you’re in. This straightforward process takes the hassle out of entering university. Visit adelaide.edu.au and search guaranteed entry.

**Flexible programs to suit your interests**

Our exciting industry-focused majors offer you flexibility and choice across a range of study areas. You can tailor your studies to focus on areas of particular interest and prepare for a variety of careers; and if you’re not sure which area to study, our flexible entry option will allow you to explore them all before specialising in a particular area.

We also offer double and combined degrees. These enable you to explore complementary disciplines such as arts, finance, science, and mathematical and computer sciences alongside your engineering studies. You’ll graduate with two qualifications and broad career possibilities.

For a full list of double and combined degrees, visit: adelaide.edu.au/degree-finder

**Real-world experience**

Our comprehensive curriculum allows you to practise real engineering through a foundation of theory and hands-on experience from your first year of study. You’ll apply knowledge, develop a solid career portfolio and build connections with prospective employers via a wide range of practical projects, field trips, internships, networking events and Study Abroad opportunities.

You will also undertake a major eight week industry internship. This not only provides experience working on real engineering projects, but allows you to hone the technical and leadership skills sought by employers.

**Embedded honours**

An honours year provides a deeper understanding of your specialisation, demonstrates a commitment to further learning, and prepares you for postgraduate studies (should you wish to pursue them). All our engineering degrees include an honours year as standard, with both design and build components.

**Full accreditation and global recognition**

Our internationally recognised engineering degrees are accredited by Engineers Australia, the country’s peak professional engineering body. Adelaide graduates qualify for professional membership of Engineers Australia and can enjoy access to lucrative opportunities locally and abroad.

**Why the University of Adelaide?**

01 SA’s No. 1 university for Engineering and Technology*

06 Six engineering disciplines ranked in the world’s top 50*

09 From aerospace to medical technologies—get career-ready with our industry-relevant majors.

**06**

Six engineering disciplines ranked in the world’s top 50*

* QS World University Rankings by Subject, 2019.

**Engineering**

**TAHLIA SKLIFOFF**
Manufacturing Engineer, Owens Illinois (O-I)
Bachelor of Engineering (Honours) (Chemical) graduate

"Work experience gave me the opportunity to not only actualise my studies — but to confirm my passion for my field. The personal and professional development this experience provided was also essential to my success in obtaining a position with my chosen employer, and ultimately my career success post university."

**Engineering**
## Engineering Pathway

### Bachelor of Engineering (Honours) – Engineering Pathway

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**Duration**
1 year full-time

**Campus**
North Terrace

**Prerequisites**
- SACE Stage 2: Mathematical Methods*
- IB: Mathematics (SL grade 4/HL grade 3)
* If Stage 2 studies were undertaken prior to 2017, the equivalent subject was known as Mathematical Studies

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### Flexible Entry

### Bachelor of Engineering (Honours) – Flexible Entry

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**Duration**
1 year full-time

**Campus**
North Terrace

**Prerequisites**
- IB: Mathematics (HL grade 3) and Physics (SL grade 4/HL grade 3).
* If Stage 2 studies were undertaken prior to 2017, the equivalent subject was known as Mathematical Studies.

**Assumed Knowledge**
- SACE Stage 2 Chemistry

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**Your way into a top engineering degree**

Do you have a selection rank of 70 or above? Did you complete Mathematical Methods* or equivalent?

At the University of Adelaide, we want to make sure everyone with a passion for engineering can pursue it. If you have not completed the prerequisites to directly enter one of our engineering degrees, you can still study with us in a supportive environment.

**What will you do?**

Our new Bachelor of Engineering (Honours) – Engineering Pathway is designed for students with a foundation in maths and a passion for engineering. You will:

- fulfill any prerequisite requirements
- study core Bachelor of Engineering subjects in your chosen engineering discipline
- prepare to enter the engineering program of your choice.

Our staff will support you in choosing the right topics within the pathway option to make sure you transition successfully.

**Where could it take you?**

With guaranteed transfer into your chosen engineering degree following successful completion of the pathway program, you’ll be ready to pursue what matters most to you at South Australia’s highest ranked university for engineering**.

* For students who have not completed Mathematical Methods or equivalent, please see our Maths Track option: adelaide.edu.au/mathlearning/bridging/

** Academic Ranking of World Universities 2019

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**Kickstart your career with clarity**

Want to be an engineer but not sure which engineering degree is right for you?

At the University of Adelaide, we want to see all graduates in successful and fulfilling careers. This degree is designed to help you pursue the best option for you.

**What will you do?**

Our flexible entry option gives you a first-hand view of engineering at the University of Adelaide. You will:

- explore a variety of engineering disciplines
- attend presentations by practising engineers
- build communication skills essential to the field.

**Where could it take you?**

You’ll transfer into a named Bachelor of Engineering (Honours) single, double or combined degree at the completion of the academic year. We’ll support you in finding the area of engineering that drives you.
CHEMICAL ENGINEERING

BACHELOR OF ENGINEERING (HONOURS) (CHEMICAL)

SATAC CODE 334791
GUARANTEED ENTRY ATAR: 80 / IB: 29
DURATION 4 years full-time
CAMPUS North Terrace

PREREQUISITES
SACE Stage 2: Mathematical Methods*, Chemistry and Specialist Mathematics.
IB: Mathematics (HL grade 3) and Chemistry (SL grade 4/HL grade 3).
* If Stage 2 studies were undertaken prior to 2017, the equivalent subject was known as Mathematical Studies

Solve global challenges
Chemical engineers come up with the best ways to convert raw matter—like minerals or oils—into products we can use. They design renewable energy solutions, new and improved medicines, chemical plants, cosmetics and food factories.
The University of Adelaide is the only South Australian university in the world’s top 50 for Computer Science and Engineering*. What will you do?
Our Bachelor of Engineering (Honours) (Chemical) is interactive from the very first year. You’ll work with award-winning and industry-connected researchers and teachers as you:
• use knowledge and skills from engineering, chemistry, maths and biology to produce chemicals, fuel, drugs, and food
• learn how results in the lab scale up for commercial production
• undertake projects with external groups such as Engineers Without Borders
• benefit from tours, projects, and placements with companies like PepsiCo, Smiths Crisps, Jurlique, and BHP
• complete an eight-week internship.

Majors are available in:
• Minerals Processing The Minerals Processing major explores the science and technology of extracting minerals from raw mined material, and converting them into products such as iron, steel, aluminium, copper, gold and uranium. Graduates can work in a range of roles across the resources industry.
• Pharmaceutical Engineering Pharmaceutical engineering involves the design, development, and operation of process systems to produce pharmaceuticals. Pharmaceutical engineers contribute to the production of pharmaceuticals, biopharmaceuticals, vaccines, nutraceuticals, cosmetics, cosmeceuticals and related products.
• Renewable Energy See page 11 for details. Alternatively, you also have the option of undertaking an Entrepreneurship or Humanitarian minor. See page 11 for details.

Where could it take you?
You could come up with better ways to control air pollution or turn saltwater into fresh water. You might work alongside craft beer brewers. Perhaps you’ll mass-produce a biodegradable version of plastic or move into the exciting world of tissue engineering.

*Academic Ranking of World Universities 2019

COMBINED AND DOUBLE DEGREES

SATAC CODE 334801
GUARANTEED ENTRY ATAR: 80 / IB: 29
DURATION 5 years full-time (or part-time equivalent)
CAMPUS North Terrace

PREREQUISITES
SACE Stage 2: Mathematical Methods*, Chemistry and Specialist Mathematics.
IB: Mathematics (SL grade 4) and Chemistry (SL grade 4/HL grade 3). Missing a prerequisite? See our Engineering Pathway option (page 16).
* As of 2021, the prerequisites for these degrees have changed.

Available combinations include:
• Bachelor of Engineering (Honours) (Chemical) and Bachelor of Arts
• Bachelor of Engineering (Honours) (Chemical) with Bachelor of Finance
• Bachelor of Engineering (Honours) (Chemical) with Bachelor of Mathematical and Computer Sciences
• Bachelor of Engineering (Honours) (Chemical) with Bachelor of Science
• Bachelor of Engineering (Honours) (Chemical) with Bachelor of Science (Biotechnology)
CIVIL, ENVIRONMENTAL AND MINING ENGINEERING

BACHELOR OF ENGINEERING (HONOURS) (ARCHITECTURAL AND STRUCTURAL)

SATAC CODE 334181
GUARANTEED ENTRY ATAR: 80 / IB: 29
DURATION 4 years full-time
CAMPUS North Terrace

PREREQUISITES
SACE Stage 2: Mathematical Methods*, Specialist Mathematics and Physics. IIB: Mathematics (HL grade 3) and Physics (SL grade 4/HL grade 3).

* As of 2021, the prerequisites for these degrees have changed.

Where architectural design meets engineering

Interested in a creative career that explores elements of both architectural design and engineering?

Architectural engineers visualise projects, plan, collaborate, test ideas and come up with high-tech building solutions. They design systems for some of the most innovative infrastructure in today’s society.

What will you do?

Our Bachelor of Engineering (Honours) (Architectural and Structural) brings the disciplines of architecture and engineering together in a unique program. You will:

• learn in state-of-the-art facilities
• undertake practical projects and work on real-world simulations
• build skills in geotechnical engineering, construction, and operation systems
• analyse material strengths, load and stress
• explore sustainability and architectural integrity
• pursue specialisations in your areas of interest
• complete an eight week internship.

In your final year you will also collaborate with industry on a major design project.

Where could it take you?

As an accredited engineer, you’ll be in demand in both the architectural and building industries. You might plan underground infrastructure for renewable energy systems. Perhaps you’ll design blast-proof buildings in the defence sector, or sustainable housing systems. Want to become an architect as well? Graduates have the exclusive opportunity to continue on to further study with our Master of Architecture.

BACHELOR OF ENGINEERING (HONOURS) (CIVIL)

SATAC CODE 334211
GUARANTEED ENTRY ATAR: 80 / IB: 29
DURATION 4 years full-time
CAMPUS North Terrace

PREREQUISITES
SACE Stage 2: Mathematical Methods*, Specialist Mathematics and Physics. IIB: Mathematics (HL grade 3) and Physics (SL grade 4/HL grade 3).

* As of 2021, the prerequisites for these degrees have changed.

Build a global career

Civil engineers design, build and maintain the infrastructure that underpins modern life. They make sure bridges, roads, tunnels, railways, dams, airports and water channels meet the needs of our society in a sustainable way. The University of Adelaide is ranked 17 in the world for Civil Engineering*.

What will you do?

Our Bachelor of Engineering (Honours) (Civil) has a strong focus on design. You’ll learn from award-winning academics in state-of-the-art facilities as you:

• study structural design and mechanics in depth
• access new technologies forming the basis of future design practice
• work on real-life projects
• interact with professionals through an industry-led design practice course
• complete an eight-week internship.

Majors are available in:

• Construction Management
Construction management engineers are involved in managing construction infrastructure, operations and sites. In this major, you’ll study construction processes and practices, including scheduling, labour and plant optimisation, and sustainable construction practices.

• Environmental Engineering
In our Environmental Engineering major, you’ll explore engineering’s connections with environment, society and economy, and learn how to create more sustainable and environmentally-friendly infrastructure. You’ll be exposed to real-world environmental projects based on industry needs in areas of urban water, integrated river management, environmental protection and more.

• Geotechnical Engineering
Geotechnical engineers design foundations, dams, embankments, retaining walls, tunnels and roads, and undertake work relating to landslides, earthquakes and contaminated land remediation. Our Geotechnical Engineering major explores the earth’s composition and nature, and its behaviour under pressure and when water flows through it.

• Structural Engineering
Structural engineers understand the forces that structures must bear and how they deform under load. This major offers the most structural engineering and mechanics design courses of any South Australian engineering degree. You’ll study both traditional methods and materials—such as steel, timber, concrete, aluminium, glass and masonry—and modern technologies and materials, including composites and polymers.

• Water Systems Engineering
Water systems engineers are involved in the design, operation and optimisation of water and wastewater treatment facilities, reservoirs, dams, pipe networks, open channels and stormwater drainage. Our Water Systems Engineering major covers the physical principles of water (both stationary and flowing), hydrology, and factors causing floods.

• Defence Systems
See page 10 for more details.

• Smart Technologies
See page 11.

• Renewable Energy
See page 11.

Alternatively, you also have the option of undertaking an Entrepreneurship or Humanitarian minor. See page 11 for details.

Where could it take you?

You will graduate as an accredited engineer. You might supervise major water projects or the building of sea-bridges. You could connect remote communities as a road and highway engineer. Perhaps you’ll design high-speed railways or help with the construction of an Australian hyperloop.

* Academic Ranking of World Universities 2019
BACHELOR OF ENGINEERING (HONOURS) (ENVIRONMENTAL)

SATAC CODE 334191
GUARANTEED ENTRY
ATAR: 80 / IB: 29
DURATION 4 years full-time
CAMPUS North Terrace
PREREQUISITES
SACE Stage 2: Mathematical Methods*, Specialist Mathematics and Chemistry. IB: Mathematics (HL grade 3) and Chemistry (SL grade 4/HL grade 3).
* As of 2021, the prerequisites for this degree have changed.

Where could it take you?
As an accredited engineer, you could manage coastal erosion, develop policy on energy futures or design recycling schemes. You might address development issues in Southeast Asia. Perhaps you’ll work for the United Nations or monitor the impacts of climate change on populated regions.

Available combinations include:
• Bachelor of Engineering (Honours) (Environmental) and Bachelor of Arts
• Bachelor of Engineering (Honours) (Environmental) with Bachelor of Finance
• Bachelor of Engineering (Honours) (Environmental) with Bachelor of Mathematical and Computer Sciences
• Bachelor of Engineering (Honours) (Environmental) with Bachelor of Science.
BACHELOR OF ENGINEERING (HONOURS) (MINING)

SATAC CODE 334851
GUARANTEED ENTRY ATAR: 80 / IB: 29
DURATION 4 years full-time
CAMPUS North Terrace

PREREQUISITES
SACE Stage 2: Mathematical Methods*, Physics and Specialist Mathematics.
IB: Mathematics (HL grade 3) and Physics (SL grade 4/HL grade 3).
* If Stage 2 studies were undertaken prior to 2017, the equivalent subject was known as Mathematical Studies

Where could it take you?
You will graduate as an accredited engineer with mining as your speciality. You might drill and blast in local stone quarries or travel overseas to unearth rare metals. You could design plans for how to approach newly discovered sites. Perhaps you’ll work in exciting developing fields like deep-sea or space mining.

DOUBLE DEGREES

SATAC CODE 334861
GUARANTEED ENTRY ATAR: 80 / IB: 29
DURATION 5 years full-time (or part time equivalent)
CAMPUS North Terrace

PREREQUISITES
SACE Stage 2: Mathematical Methods*, Physics and Specialist Mathematics.
IB: Mathematics (HL grade 3) and Physics (SL grade 4/HL grade 3).
* As of 2021, the prerequisites for these degrees have changed.

Unearth riches
Mining engineers work with all aspects of ore extraction and processing. They gather valuable minerals or metals and provide a backbone industry for our society.

The reinvigoration of traditional mining plus new advances—such as deep-sea and space mining—mean there’s an exciting future for mining engineers, with a wealth of job opportunities around Australia and overseas.

The University of Adelaide is ranked 13 in the world for Mining and Mineral Engineering*.

What will you do?
Being the only mining engineering course in South Australia, we cover everything from engineering design to management skills. You will:

• take part in field trips to mining locations in Australia and overseas
• gain exposure to industry practices in world-class laboratories
• work closely with experts to develop skills and networks for a successful career
• complete an eight-week internship
• undertake an optional semester at another mining university.

Majors are available in:
• Mine Automation
  Learn about the connection between mining and artificial intelligence, machine learning and big data
  at the only university in Australia currently offering a major in mine automation.

Minors are available in:
• Entrepreneurship
• Humanitarian

Available combinations include:
• Bachelor of Engineering (Honours) (Mining) with Bachelor of Mathematical and Computer Sciences
• Bachelor of Engineering (Honours) (Mining) with Bachelor of Science
Electrical and Electronic Engineering

Bachelor of Engineering (Honours) (Electrical and Electronic)

SATAC Code: 334811
Guaranteed Entry
ATAR: 80 / IB: 29
Duration: 4 years full-time
Campus: North Terrace

Prerequisites
SACE Stage 2: Mathematical Methods*, Physics and Specialist Mathematics. IB: Mathematics (HL grade 3) and Physics (SL grade 4/HL grade 3).
* If Stage 2 studies were undertaken prior to 2017, the equivalent subject was known as Mathematical Studies.

Power our future
Electrical and electronic engineers do so much more than keep the lights on! From smart devices to medical imagery and defence technologies, electrical and electronic engineering contributes to every aspect of modern life.

The University of Adelaide is the only South Australian university in the world’s top 50 for electrical and electronic engineering*. We set you up for a range of global career options in a field that’s leading technological change.

What will you do?
Our Bachelor of Engineering (Honours) (Electrical and Electronic) is practical right from the first year. Working with our internationally renowned staff who are active in cutting-edge discoveries, you will:
• Get hands-on experience in state-of-the-art facilities, including a 3D prototyping lab, autonomous vehicles lab, and electric machines lab
• Work on practical and relevant projects with industry partners
• Specialise in your chosen electrical and electronic engineering major after the first two years
• Complete an eight-week internship.

Majors are available in:
• Communication Systems
  Our Communication Systems major gives you the skills to design and manage complex hardware and software, such as mobile, Internet and broadcast networks, satellite communications, and infrastructure systems.
• Computer Engineering
  The Computer Engineering major focuses on the design, development and use of computers to control devices, equipment and processes, including robots, automated infrastructure and autonomous devices. You’ll graduate well placed to secure jobs in fields such as industrial automation, logistics, and e-commerce.
• Cybersecurity
  Cybersecurity is a high-growth industry. As more devices and systems are connecting to the Internet—creating the Internet of Things —employers are increasingly seeking graduates who can develop secure and robust systems. In this major, you’ll learn from industry experts and have the opportunity to undertake international study tours, such as a cybersecurity tour of Estonia.
• Defence Systems
  See page 10 for details.
• Medical Technologies
  See page 10.
• Renewable Energy
  See page 11.
• Smart Technologies
  See page 11.
  Alternatively, you also have the option of undertaking an Entrepreneurship or Humanitarian minor. See page 11 for details.

Where could it take you?
As an accredited engineer, you could work in artificial intelligence, industrial automation, e-commerce or cybersecurity. You might manage multimillion-dollar energy projects. Perhaps you’ll help design the first purely electric aircraft.

* Academic Ranking of World Universities 2019

Combined and Double Degrees

SATAC Code: 334821
Guaranteed Entry
ATAR: 80 / IB: 29
Duration: 5 years full-time (or part-time equivalent)
Campus: North Terrace

Prerequisites
SACE Stage 2: Mathematical Methods*, Physics and Specialist Mathematics. IB: Mathematics (HL grade 3) and Physics (SL grade 4/HL grade 3).
Missing a prerequisite? See our Engineering Pathway option (page 16).
* As of 2021, the prerequisites for these degrees have changed.

Available combinations include:
• Bachelor of Engineering (Honours) (Electrical and Electronic) and Bachelor of Arts
• Bachelor of Engineering (Honours) (Electrical and Electronic) with Bachelor of Finance
• Bachelor of Engineering (Honours) (Electrical and Electronic) with Bachelor of Mathematical and Computer Sciences
• Bachelor of Engineering (Honours) (Electrical and Electronic) and Bachelor of Science*
  * Please note the combined degree with the Bachelor of Science is only available with a Physics major.
Craft the next generation of machines

Mechanical engineers work with ‘things that move’, from prosthetic limbs and robots to motor vehicles, aircraft and space stations.

When it comes to new technologies, mechanical engineers are key. They design and develop materials, processes and products to improve our lives and the world.

What will you do?

Our Bachelor of Engineering (Honours) (Mechanical) has strong links to industry and a focus on design and creativity.

You will:
- explore core mechanical engineering disciplines
- complete design and build projects
- gain hands-on experience in state-of-the-art facilities
- benefit from internships, placements and projects with experts in the field
- complete an eight-week internship.

In your final year you’ll apply your advanced capabilities in an industry-led design and build research project.

Majors are available in:
- Aerospace Engineering
  Aerospace engineers design and launch equipment to help explore our solar system and beyond—and their future prospects are equally vast. As the only university in South Australia currently offering an aerospace major, we’ll prepare you to take those opportunities, through courses in aeronautical engineering, space vehicle design and aerospace structures.
- Mechanical Engineering
  Mechanical engineers design and build mechanical systems and machines. This major focuses on the materials and numerical methods used to solve engineering challenges in the field, and includes topics in advanced manufacturing.
- Mechatronics and Robotics
  Dreams of the future become today’s innovations when engineers take ideas from science fiction and turn them into science reality. This major prepares you to take those quantum leaps, by studying the components that make up complex mechatronic and robotic systems.
- Sports Engineering
  This major equips you to excel in the rapidly-growing global sports engineering field. It focuses on applying mechanical engineering skills to the design and manufacture of sports equipment and apparel, rehabilitation and exercise equipment, and sports facilities. In addition to topics related to design and engineering science fundamentals, you’ll undertake studies in physiology, anatomy, biomechanics and sports materials.
- Defence Systems
  See page 10 for more details.
- Medical Technologies
  See page 10.
- Smart Technologies
  See page 11.
- Renewable Energy
  See page 11.

Additionally, you also have the option of undertaking an Entrepreneurship or Humanitarian minor. See page 11 for details.

Where could it take you?

Our mechanical engineering graduates are in high demand. As an accredited engineer, you could develop life-saving technology, or innovate in the sustainable energy field. You might be an aerospace or sports engineer. Perhaps you’ll plan, build and test robots and robotic systems with artificial intelligence.

COMBINED AND DOUBLE DEGREES

Available combinations include:
- Bachelor of Engineering (Honours) (Mechanical) and Bachelor of Arts
- Bachelor of Engineering (Honours) (Mechanical) with Bachelor of Finance
- Bachelor of Engineering (Honours) (Mechanical) with Bachelor of Mathematical and Computer Sciences
- Bachelor of Engineering (Honours) (Mechanical) with Bachelor of Science.
# PETROLEUM ENGINEERING

## BACHELOR OF ENGINEERING (HONOURS) (PETROLEUM)

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**PREREQUISITES**

- IB: Mathematics (HL grade 3) and Physics (SL grade 4/HL grade 3).

* As of 2021, the prerequisites for this degree have changed.

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## DOUBLE DEGREE

**BACHELOR OF ENGINEERING (HONOURS) (PETROLEUM) WITH BACHELOR OF SCIENCE**

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**PREREQUISITES**

- IB: Mathematics (HL grade 3) and Physics (SL grade 4/HL grade 3).

* As of 2021, the prerequisites for this degree have changed.

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## BACHELOR OF ENGINEERING (HONOURS) (PETROLEUM) WITH MAJOR

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</table>

**PREREQUISITES**

- IB: Mathematics (HL grade 3) and Physics (SL grade 4/HL grade 3).

* As of 2021, the prerequisites for this degree have changed.

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## Be in global demand

Want to travel the world and face new challenges every day? Petroleum engineering is one of the highest paid engineering fields internationally, with exciting opportunities for qualified graduates. Petroleum engineers help sustain society’s way of life by ensuring we can meet our energy demands. They provide oil and gas in efficient, safe, and environmentally responsible ways.

**What will you do?**

Our Bachelor of Engineering (Honours) (Petroleum) is developed and taught by industry-trained academics through the Australian School of Petroleum and Energy Resources. Australia’s and Southeast Asia’s academic centre for petroleum research and education, and the only school of its kind in Australia. You will:

- learn about petroleum engineering, petroleum geoscience and the oil industry
- take courses in business and project management
- develop technical knowledge and network with potential employers
- undertake interactive projects and field trips
- complete an eight-week internship.

In your final year you’ll also carry out a major research project.

**Where could it take you?**

You’ll graduate as an accredited engineer. You could work for a range of oil, gas and energy companies, or find a role in a government agency. You might take up reservoir drilling and production. Perhaps you’ll be a geoscientist or take on management roles within the business.

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This combination builds a strong foundation of mathematics, physics, geology, geophysics, computer applications and engineering principles. Over the course of the degree, subjects studied change from more general engineering topics to highly specific petroleum and applied geology and geophysics-related topics. There’s also a focus on management and business-related aspects. This integrated curriculum structure is not only unique, but highly valued by industry.

* Please note: the double degree with the Bachelor of Science is only available with a double major in Geology and Geophysics, and Applied Geology.

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Be in global demand

Want to face new challenges every day? Petroleum engineering is one of the highest paid engineering fields internationally, with exciting opportunities for qualified graduates. Petroleum engineers help sustain society’s way of life by ensuring we can meet our energy demands. They provide oil and gas in efficient, safe, and environmentally responsible ways.

**What will you do?**

Our Bachelor of Engineering (Honours) (Petroleum) with major is developed and taught by industry-trained academics through the Australian School of Petroleum and Energy Resources. Australia’s and Southeast Asia’s academic centre for petroleum research and education, and the only school of its kind in Australia. You will:

- learn about petroleum engineering, petroleum geoscience and the oil industry
- take courses in business and project management
- develop technical knowledge and network with potential employers
- undertake interactive projects and field trips
- complete an eight-week internship.
Majors are available in:

• Chemical Engineering
  Chemical engineering sustains and improves a range of industries, including petroleum refining and petrochemicals. In this major you’ll develop skills in the design, development, and operation of process systems for extraction, transformation and recovery.

• Civil Engineering
  Our Civil Engineering major develops your skills in environmentally sustainable infrastructure planning, design, construction and maintenance.

• Mechanical Engineering
  In this major you’ll gain knowledge of, and skills in applying the, technology and scientific principles involved in the design, development and manufacture of products, processes, machines and moving mechanical engineering systems.

• Mining Engineering
  Our Mining Engineering major will develop your skills in the extraction and processing of valuable mineral and metal ores from the earth. Combining petroleum engineering with mining can give you a strong competitive edge and increased career options.

Where could it take you?

You’ll graduate as an accredited engineer. You could work for a range of oil, gas and energy companies, or find a role in a government agency. You might refine crude petroleum into gasoline or plastics. You could optimise extraction techniques. Perhaps you’ll design new equipment, supervise drillings or take on managerial roles.

BRETT JENKINS
Bachelor of Engineering (Honours) (Petroleum and Mechanical)

“ I was able to learn what potential the world could offer. I was given the skills and foundation to pursue the opportunities that my passions were driving me to explore. ”
BACHELOR OF ENGINEERING (HONOURS) (SOFTWARE)

SATAC CODE
334891
GUARANTEED ENTRY
ATAR: 80 / IB: 29
DURATION
4 years full-time
CAMPUS
North Terrace
PREREQUISITES
SACE Stage 2: Mathematical Methods*, Specialist Mathematics and Physics
IB: Mathematics (HL grade 3) and Physics (SL grade 4/HL grade 3).
Missing a prerequisite? See our Engineering Pathway option (page 16).
* As of 2021, the prerequisites for this degree have changed.

adelaide.edu.au/degree-finder
Search software

Thrive in the golden age of software
From South Australia to Silicon Valley, software engineers are using a combination of problem solving and creativity to develop new technologies that change the world. They are involved in the whole life cycle of computer software. They strategise, design, build, test, code and collaborate.

Studying software engineering will prepare you to drive software solutions to enhance our future for generations to come.

What will you do?
Our Bachelor of Engineering (Honours) (Software) combines the underlying principles of software engineering with strong technical and leadership skills.

You will:
• tackle real-world, open-ended and complex programming problems
• take new and refreshed courses that emphasise divergent thinking, collaborative learning and teamwork
• work with industry mentors
• pursue work experience and internship opportunities with some of the world’s best-known companies
• complete an eight-week internship.

Majors are available in:
• Defence Systems
  See page 10 for more details.
• Smart Technologies
  See page 11.
Alternatively, you also have the option of undertaking an Entrepreneurship minor. See page 11 for details.

Where could it take you?
Our software engineering graduates are highly sought after by top companies around the globe. As an accredited engineer, you could develop software for mobile robots and driverless cars. You might create and test video gaming experiences. Perhaps you’ll design apps or entirely new smart technologies. In the software engineering landscape, you can code your own adventure.
ARCHITECTURE
Architects, landscape architects and urban designers play a vital role in society. They consider and respond to environmental, cultural, social and economic issues, as well as functional needs and aesthetic values, to design the cities, buildings and landscapes we all inhabit.

In the School of Architecture and Built Environment we specialise in delivering internationally recognised degrees in Architecture, Landscape Architecture, Planning, Urban Design, Property and Construction Management.

Our Bachelor of Architectural Design is a three-year undergraduate degree that leads to a two-year postgraduate degree. Completion of both will enable you to practise as a professional in your chosen discipline.

Some of the outstanding benefits you’ll enjoy studying with us include:

- an internship program in master degrees that provides professional work experience within an Australian or overseas business or professional practice
- access to industry-sponsored awards recognising your outstanding work
- the opportunity to travel interstate and overseas and learn valuable aspects of design from other cultures
- real-world inspiration from three ‘industry professors’, all award-winning professionals
- access to state-of-the-art computer-aided design, building information modelling and 3D modelling facilities.

**WHY THE UNIVERSITY OF ADELAIDE?**

01 RANKED NO.1 IN SA FOR ARCHITECTURE**

05 RECOGNISED BY 5 PROFESSIONAL ACCREDITATION BODIES

$58.7k MEDIAN GRADUATE STARTING SALARY*

* Source: Salaries by study area, Graduate Outcomes Survey National Report, Quality Indicators for Learning and Teaching (QILT), Graduate Careers Australia Limited, 2018

** QS World University Rankings by Subject, 2019.

**PATHWAYS**

**BACHELOR OF ARCHITECTURAL DESIGN (3 YEARS) FOUNDATION DEGREE**

- Master of Architecture
- Master of Landscape Architecture
- Master of Planning (Urban Design)
- Master of Property
- Master of Construction Management

**HAYLEY EDWARDS**

Bachelor of Architectural Design
Master of Architecture with Master of Landscape Architecture

“ The world is facing growing challenges of explosive population growth. I chose an architectural degree, because architects are uniquely placed to meet these challenges head on.”
BACHELOR OF ARCHITECTURAL DESIGN

SATAC CODE 3M031
GUARANTEED ENTRY ATAR: 80 / IB: 29
DURATION 3 years full-time
CAMPUS North Terrace

ADDITIONAL INFORMATION
Students awarded advanced standing will not have access to both intakes. Students awarded 36 units of advanced standing are normally required to commence in semester two.

ASSUMED KNOWLEDGE
SACE Stage 1 Mathematics (or equivalent).
Basic freehand drawing ability and computing skills

Search architecture

The blueprint for your future
Design goes far beyond the visual. It responds to possibilities and limits, to hopes and needs. It’s equal parts creative and calculated.

Architectural design is about understanding landscapes and the way humans create places within them. Architecture, landscape architecture and urban design share the purpose of aiding society while creating structural works of art.

What will you do?
Our Bachelor of Architectural Design hones concrete skills and encourages big picture thinking. You will:
• visit notable building sites, landscapes, gardens and exhibitions
• gain high-level practical design and model-making skills
• practise computer and hand based drawing techniques
• explore relevant theory, history, tradition and innovation
• consider issues of ecology and environment
• learn how to formulate effective proposals.

Where could it take you?
Our graduates apply design skills in all sorts of rewarding careers, and take on specialised roles through postgraduate study. You might restore beautiful old buildings or be a micro-home master. You could create and preserve natural landscapes and life cycles. Perhaps you’ll design the next iconic skyscraper or opera house.

Professional accreditation
Please note that to practise as an architect or landscape architect, you must complete a professionally accredited combination of degrees in your chosen discipline.

We offer the following choices:
• Bachelor of Architectural Design followed by Master of Architecture recognised by the Australian Institute of Architects and accredited by the Architectural Practice Board of South Australia.
• Bachelor of Architectural Design followed by Master of Landscape Architecture recognised and accredited by the Australian Institute of Landscape Architects.
• Bachelor of Architectural Design followed by Master of Planning (Urban Design) recognised and accredited by the Planning Institute of Australia.
• Bachelor of Architectural Design followed by Master of Property recognised and accredited by the Royal Institution of Chartered Surveyors.
• Bachelor of Architectural Design followed by Master of Construction Management recognised and accredited by the Royal Institution of Chartered Surveyors.
Computer science is the discipline of writing software, or 'code'. It underpins modern society and makes possible the many technological systems we rely on. Computer scientists work on software that pushes the limits of human endeavour in areas such as disease treatment, weather prediction, Internet security, international finance and space exploration.

Our computer science and IT degrees will give you insights into complex computer systems and provide opportunities to apply software-writing and problem-solving skills to a range of real-world scenarios.

**Study with the top university in South Australia for Computer Science**

The University of Adelaide is ranked 43 in the world for Computer Science and Engineering and is number one in South Australia*. You’ll learn from world-renowned academic staff and be highly sought-after by employers.

**Home to the Australian Institute of Machine Learning**

Home to the Australian Institute for Machine Learning—ranked #3 in the world^ and the largest machine learning research group in the country—you’ll learn from world-leading AI researchers and teachers at the cutting-edge of their field.

**Flexible degrees to suit your interests**

You can tailor your computer science studies towards a particular career path, with majors offered in Artificial Intelligence and Machine Learning; Computer Science; Cybersecurity; Data Science; Distributed Systems and Networking.

**Honours**

An honours year provides a deeper understanding of your specialisation, demonstrates a commitment to further learning, and prepares you for postgraduate studies (should you wish to pursue them).

In computer science, honours will be available to you if you perform at a consistently high level. It’s taken as a one-year program of additional study after completing the bachelor degree.

**Full accreditation and global recognition**

Both the Bachelor of Computer Science and Bachelor of Computer Science (Advanced) are accredited by the Australian Computer Society. They also provide the academic requirements for membership of the Institute of Electrical and Electronic Engineers and the American Association for Computing Machinery. Consequently, each qualification’s quality is internationally recognised. Upon graduation, you’ll be perfectly placed to pursue lucrative opportunities at home and abroad.

* Academic Ranking of World Universities, 2019
^ CS Rankings 2019, Global ranking of universities for Computer Vision research

**WILLIAM GALE**

Applied Scientist, Microsoft
Honours Degree of Bachelor of Computer Science graduate

“Studying at Adelaide has given me the opportunity to work with internationally-recognised researchers on exciting projects as part of a world-class education. The University’s industry connections helped me secure a job with Microsoft in Silicon Valley where I will apply my skills to help improve speech recognition.”
BACHELOR OF COMPUTER SCIENCE

SATAC CODE 314111
GUARANTEED ENTRY ATAR: 80 / IB: 29
DURATION 3 years full-time
CAMPUS North Terrace

PREREQUISITES
SACE Stage 2: Mathematical Methods*
IB: Mathematics (SL grade 4 / HL grade 3)
* If Stage 2 studies were undertaken prior to 2017, the equivalent subject was known as Mathematical Studies

Program the future
Ready to take your place in the technology revolution?
Our Bachelor of Computer Science features artificial intelligence and machine learning courses not available anywhere else in South Australia. It’s taught by world-class researchers and teachers within a faculty ranked 43 in the world for Computer Science and Engineering*.

What will you do?
Depending on your chosen major, you will:
• explore self-driving cars, robotic vision, machine learning and image recognition
• learn how to protect networks, data and software systems from attack and unlawful access
• apply cutting-edge data analysis techniques—such as machine and deep learning—to large sets of data
• design, make and study large-scale distributed software systems, including parallel, mobile and cloud-based environments.

Majors are available in:
• Artificial Intelligence
• Computer Science
• Cybersecurity
• Data Science
• Distributed Systems and Networking.

You can also choose a flexible program across all areas of computer science.

Cybersecurity
Our Cybersecurity major gives you advanced skills in the technologies, processes and practices that protect networks, data and software systems from attack and unauthorised access. You’ll learn from industry specialists and world-leading researchers.

Data
In this major you’ll learn how to apply cutting-edge data analysis techniques—such as machine and deep learning—to large sets of data, equipping you to help solve problems across health, education, science, engineering and business.

Distributed Systems and Networking
This major enables you to develop enhanced skills in the design, development and analysis of large-scale distributed software systems, including parallel, distributed, mobile and cloud-based environments.

Alternatively, you can choose a flexible major program with a little bit of everything—from gaming and graphics, to computer vision and software engineering.

Where could it take you?
No matter how technology transforms the jobs market, computer science skills will be crucial. You could design robots or collective virtual reality spaces. You might work at Google as a software engineer. Perhaps you’ll legally break into systems as a ‘white hat’ hacker to test their security.

* Academic Ranking of World Universities 2019

BACHELOR OF COMPUTER SCIENCE (ADVANCED)

SATAC CODE 334681
GUARANTEED ENTRY ATAR: 95 / IB: 37
DURATION 3 years full-time
CAMPUS North Terrace

PREREQUISITES
SACE Stage 2: Mathematical Methods*
IB: Mathematics (SL grade 4 / HL grade 3)
* If Stage 2 studies were undertaken prior to 2017, the equivalent subject was known as Mathematical Studies

Decode grand challenges
Our Bachelor of Computer Science (Advanced) is a distinctive degree for highly capable students who want to tackle global questions in computer science and information technology. The program is taught by world-class researchers and teachers within a faculty ranked 43 in the world for computer science and engineering*. It features artificial intelligence and machine learning courses not available anywhere else in South Australia.

What will you do?
You will apply your skills to real-world challenges through self-directed learning and practical projects. Depending on your chosen major, you will:
• explore self-driving cars, robotic vision, machine learning and image recognition
• learn how to protect networks, data and software systems from attack and unlawful access
• apply cutting-edge data analysis techniques—such as machine and deep learning—to large sets of data
• design, make and study large-scale distributed software systems, including parallel, mobile and cloud-based environments.

Majors are available in:
• Artificial Intelligence
• Computer Science
• Cybersecurity
• Data Science
• Distributed Systems and Networking.

We also set up opportunities within the program for displaying your talents to future employers.

Note: You must maintain a high grade point average to stay in this highly competitive degree.

Where could it take you?
With advanced technology skills, you’ll work on solving real problems in our society. You could come up with multi-cloud solutions to tackle future security issues. You might develop a revolutionary algorithm. Perhaps you’ll program nanorobots that reverse ageing, or design the first unquestionably true artificial intelligence.

* Academic Ranking of World Universities 2019
BACHELOR OF INFORMATION TECHNOLOGY

Connect your career with the future

IT makes and breaks organisations worldwide. Businesses with more intuitive, high-performing systems leave competitors in their wake. But even market leaders risk losing customers by the thousands if they can’t maintain service levels.

Demand for professionals with exceptional IT design and management skills is rising, and our new Bachelor of Information Technology puts you squarely in employers’ sights.

What will you do?

The degree is taught within a faculty ranked 43 in the world for Computer Science and Engineering*. Leveraging the University’s strong industry links and world-class research, it features an emphasis on systems and business approaches, and design thinking.

Majors are offered in either Cybersecurity or Artificial Intelligence and Machine Learning.

In addition to gaining a broad, application-based understanding of computer and information sciences, you’ll develop skills in:

• evaluating and using IT methods, tools and processes in real-world contexts, complemented by the ability to integrate new and emerging technology
• applying systems-thinking principles to manage and develop well-structured, maintainable and safe technological solutions
• designing, making and studying large-scale distributed software systems, including parallel, mobile and cloud-based
• advanced critical and independent thinking and interpersonal communication.

Depending on your chosen major, you’ll also:

• learn how to develop highly secure, complex IT systems
• protect networks, data and software systems from attack and unlawful access
• explore self-driving cars, robotic vision, machine learning and image recognition
• understand how enterprise data and AI tools can be paired to improve productivity
• apply cutting-edge data analysis techniques to large sets of data.

And both majors include a significant industry-focused project or internship.

Where could it take you?

You could support organisations’ IT development and management in virtually any industry, anywhere in the world. From a premium European food producer to an Asian bank or Australian airline… From web computing and user experience in the US, to data science and information security in India… Countless paths will open.

*Academic Ranking of World Universities 2019
A degree in mathematical sciences will teach you the universal language required to describe, model and understand our world, and prepare you for careers in numerous industries—from communications, defence and engineering to finance, health and manufacturing.

At the University of Adelaide, our mathematical sciences degrees provide valuable training in rigour and logical thinking. Our graduates are highly regarded for their creativity, problem-solving abilities and research skills, and pursue successful careers across a range of industries.

You can study mathematical theories and practical applications of mathematics in an applied mathematics specialisation. You could delve into abstract theories that underpin modern science and technology via a pure mathematics program. Or you could specialise in statistics and learn to collect, analyse and model data to solve real-world problems.

Whichever path you follow you’ll learn from prominent academic staff at the forefront of the latest research and industry trends. The Australian Research Council’s 2018-19 Excellence in Research for Australia evaluation recognised our mathematics research as ‘well above’ world standard.

**Guaranteed entry selection rank 80**

All our mathematical sciences degrees offer guaranteed entry. In the case of the Bachelor of Mathematical Sciences and Bachelor of Mathematical and Computer Sciences, for example, if you meet the prerequisites and achieve a selection rank of 80 or above*— including any adjustment factors (if eligible)—you’re in. For more details, visit: adelaide.edu.au and search guaranteed entry.

**Flexible degrees to suit your interests**

If your interests span more than one area of study you may like to consider a double or concurrent degree. Combining two areas of study will give you a diverse academic experience and broaden your career opportunities. Double and concurrent degree combinations allow you to count designated courses from both disciplines towards each degree, thereby reducing the overall time taken to complete them.

You can study the Bachelor of Mathematical and Computer Sciences with a range of engineering degrees as double degree options, in addition to teaching, finance and law. For a full list of double and concurrent degrees, visit: adelaide.edu.au/degree-finder

**Honours**

An honours year provides a deeper understanding of your specialisation, demonstrates a commitment to further learning, and prepares you for postgraduate studies. In mathematical sciences, honours will be available to you if you perform at a consistently high level. It’s taken as a one year program of additional study after completing the bachelor degree.

*Please note, the selection rank requirement for Bachelor of Mathematical and Computer Sciences is less than 80.

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**LIAM STOLDT**

Bachelor of Mathematical Sciences (Advanced)

“I’m enjoying my time at university and I thoroughly enjoy the content and the work I do. Each course leads very smoothly into the next and there is an overall linkage between many different mathematical courses and ideas in the degree.”
BACHELOR OF MATHEMATICAL SCIENCES

SATAC CODE: 324421
GUARANTEED ENTRY: ATAR 80 / IB 29
DURATION: 3 years full-time
CAMPUS: North Terrace

A calculated career move

Mathematics is both a logical and creative pursuit. It's about curiosity, challenge, perseverance and passion. Millions of industries around the world depend on mathematical scientists. They analyse and interpret patterns, predict and model outcomes, solve problems and drive human progress.

What will you do?

Our Bachelor of Mathematical Sciences challenges you to explore the full breadth and depth of mathematical learning. You will:
- learn from award-winning researchers and teachers in state-of-the-art facilities
- build fundamental statistical and mathematical knowledge
- hone your creativity, rigour, logical thinking, professionalism and research skills
- delve into abstract theories that underpin modern science
- create, collect, analyse and model data.

Majors are available in:
- Applied Mathematics
- Pure Mathematics
- Statistics.

Where could it take you?

Our maths graduates go on to all sorts of fascinating careers in technology-led industries. You could crunch numbers for business start-ups as a data scientist or work on modelling to predict the weather. You might be an actuary, applying probability and statistics to insurance and banking. Perhaps you'll design digital games or pursue rocket science.

Differentiate yourself

Want to drive progress through mathematics? Our Bachelor of Mathematical Sciences (Advanced) is a degree for highly capable students who are passionate about maths and want to excel.

What will you do?

Alongside mathematical and statistical expertise, our advanced degree places a strong emphasis on research skills. You will:
- work with award-winning academics and researchers in state-of-the-art facilities
- access special programs designed for high-achieving students
- gain valuable exposure to mathematical sciences research culture
- take three Advanced Mathematical Perspectives courses.

Majors are available in:
- Applied Mathematics
- Pure Mathematics
- Statistics.

Note: You must maintain a GPA of 5.0 to remain in this highly competitive degree.

Where could it take you?

You will emerge with enhanced skills for either higher studies or expert roles in your chosen career. You could be a defence scientist or economic researcher. You might enter the growing field of gaming design and performance analysis. Perhaps you'll figure out the mathematical model behind a scientific breakthrough or even win the Fields Medal.

BACHELOR OF MATHEMATICAL AND COMPUTER SCIENCES

SATAC CODE: 324681
GUARANTEED ENTRY: ATAR 95 / IB 37
DURATION: 3 years full-time
CAMPUS: North Terrace

Multiply your expertise

Enjoy mathematical challenges? Want to apply your skills to computer-based problems? Maths and computer science is a powerful combination. In an increasingly technological age, pairings like these are only becoming more valuable for a wide variety of careers.

What will you do?

Our Bachelor of Mathematical and Computer Sciences is a flexible degree. A program adviser will work with you to develop a study program tailored to your interests and career goals. You will:
- learn from world-class researchers and teachers in state-of-the-art facilities
- build fundamental statistical and mathematical knowledge
- explore complex computer systems and theories
- hone your creativity, rigour, logical thinking, professionalism and research skills
- pursue diverse electives—from business classes to social science programs.

Majors are available in:
- Applied Mathematics
- Artificial Intelligence
- Computer Science
- Cybersecurity
- Data and Decision Sciences
- Distributed Systems and Networking
- Data Science
- Pure Mathematics
- Statistics

A minor is also available in Public Health.

Where could it take you?

You could decode messages and breach security systems as a cryptoanalyst. You might apply linear algebra in the design of virtual reality software. Perhaps you'll develop theorems as an academic or land a job at a major firm in Silicon Valley.

* If you're interested in broadening your mathematical expertise, you can also choose to study any two of Applied Mathematics, Pure Mathematics or Statistics in lieu of a single major.
Available combinations include:

- Bachelor of Mathematical and Computer Sciences with Bachelor of Engineering (Honours) (Chemical)
- Bachelor of Mathematical and Computer Sciences with Bachelor of Engineering (Honours) (Civil)
- Bachelor of Mathematical and Computer Sciences with Bachelor of Engineering (Honours) (Electrical and Electronic)
- Bachelor of Mathematical and Computer Sciences with Bachelor of Engineering (Honours) (Environmental)
- Bachelor of Mathematical and Computer Sciences with Bachelor of Engineering (Honours) (Mechanical)
- Bachelor of Mathematical and Computer Sciences with Bachelor of Engineering (Honours) (Mining)
- Bachelor of Mathematical and Computer Sciences with Bachelor of Laws
- Bachelor of Mathematical and Computer Sciences with Bachelor of Finance
- Bachelor of Mathematical and Computer Sciences with Bachelor of Teaching.
Tackling the major challenges facing our world requires teams of highly qualified professionals. Technologists play key roles in these teams by bringing specialist knowledge and management expertise to solve problems.

Technologists are expert problem solvers and communicators who are able to take an abstract concept or design and translate it into a real-world technological solution. Their strong understanding of general and specialist engineering knowledge enables them to innovatively implement, test and maintain engineered products, processes, systems and services.

Be in demand

Worldwide, demand is soaring for graduates with skills and understanding in technology related areas. Depending on your chosen specialisation, you could support defence-related technology development or construct the next generation of zero-energy buildings using the latest digital and Industry 4.0 technologies.

Technologists will also play key roles in new job functions, such as submarine construction, advanced manufacturing, maintenance of equipment and managing the complex logistics of large projects.

Whichever area you choose to specialise in, you’ll be ready to step up and flourish in the growth industries of the future.

Get career ready with up to 760 hours of work-based training

Developed and delivered in collaboration with industry, all our Technology qualifications have a strong emphasis on real-world experience. The curriculum is designed for rapid transition to industry after graduation. The modules are put together after extensive work between industry partners and University staff, offering an innovative blend of industry relevant knowledge and skills.

Depending on your chosen degree, you’ll undertake two internships, with up to 760 hours of work-based training. The internships are embedded into the degree, with a short placement in the second year, followed up by a long placement, possibly overseas, in the final semester.

Study that fits you

Employed full-time and looking to upskill? Our Technology qualifications are designed to be flexible, ensuring you can make your study fit you. The Diploma, Associate Degree and Bachelor in Technology are nested qualifications—enabling you to progress through your studies at a pace and level of commitment that suits you.
**BACHELOR OF TECHNOLOGY (DEFENCE INDUSTRIES)**

**SATAC CODE** 354131

**GUARANTEED ENTRY**
- ATAR: 70 / IB: 25

**DURATION**
- 3 years full-time

**CAMPUS**
- North Terrace

**PREREQUISITES**
- SACE Stage 2: Mathematical Methods
- IB: Mathematics (SL grade 4/HL grade 3)

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**ASSOCIATE DEGREE IN TECHNOLOGY (DEFENCE INDUSTRIES)**

**SATAC CODE** 318001

**GUARANTEED ENTRY**
- ATAR: 70 / IB: 25

**DURATION**
- 2 years full-time

**CAMPUS**
- North Terrace

**PREREQUISITES**
- SACE Stage 2: Mathematical Methods
- IB: Mathematics (SL grade 4/HL grade 3)

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**DIPLOMA IN TECHNOLOGY (DEFENCE INDUSTRIES)**

**SATAC CODE** 316311

**GUARANTEED ENTRY**
- ATAR: 70 / IB: 25

**DURATION**
- 1 year full-time

**CAMPUS**
- North Terrace

**PREREQUISITES**
- SACE Stage 2: Mathematical Methods
- IB: Mathematics (SL grade 4/HL grade 3)

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**Translate defence tech to the world**

South Australia’s defence industry is growing—and so is its demand for unique expertise. With many big projects in the pipeline, defence-related organisations are calling for specialists who can communicate defence-tech engineering ideas to everyone from on-the-ground operational personnel to potential commercial partners. With our new Bachelor of Technology (Defence Industries) you’ll be ready to step up.

**What will you do?**

Taught over three years full-time within a faculty ranked 43 in the world for Computer Science and Engineering*, the degree leverages the University’s strong industry links and world-class research. It features an emphasis on real-world experience, with two internships providing up to 760 hours of work-based training. In addition to gaining a broad understanding of the foundations of technology, including computing, information, mathematics, and the natural and physical sciences—you’ll develop skills in evaluating and using:

- engineering methods, tools and processes in real-world defence-related contexts
- systems-thinking principles to manage and develop well-structured, maintainable and safe defence technology solutions
- AI and automation technologies (Industry 4.0)
- data analytics and cyber security applications
- mechatronics and electrical principles
- advanced critical thinking and interpersonal communication.

In third-year, you’ll also have the opportunity to build deep knowledge in:

- defence procurement and logistics
- systems engineering, including maritime engineering
- human factors and societal studies.

**Where could it take you?**

You could support defence-related technology development and management anywhere in the world. From advanced radar equipment R&D to submarine fit-outs; from Landing Helicopter Dock ship upgrades to Joint Strike Fighter through-life support.

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**Develop deep defence expertise**

Defence-tech engineering is its own world—unique concepts discussed in unique contexts. But in the industry’s current rate of growth outpacing supply of suitably qualified staff, defence-related organisations are keenly seeking professionals who speak their ‘language’. Our new Associate Degree in Technology (Defence Industries) will give you both the necessary vocabulary and the scientific understanding to use it—whether coordinating research, translating it for customers, or approaching partners.

**What will you do?**

Taught over two years full-time within a faculty ranked 43 in the world for Computer Science and Engineering*, the degree leverages the University’s strong industry links and world-class research. It emphasises real-world experience, with over 150 hours of work-based training. In addition to gaining a broad understanding of technology’s foundational sciences—computer, information, mathematical, natural and physical—you’ll develop skills in evaluating and using:

- engineering methods, tools and processes in real-world defence-related contexts
- systems-thinking principles to manage and develop well-structured and maintainable defence technology solutions
- AI and automation technologies (Industry 4.0)
- data analytics and cyber security applications
- mechatronics and electrical principles
- advanced critical thinking and interpersonal communication.

**Where could it take you?**

You could play an important role linking defence-tech engineering with hands-on technicians and head-office executives in defence-related organisations of all kinds—anything from ‘prime’ contractors to local SMEs or the Department of Defence. You’ll also receive advanced standing towards the Bachelor of Technology (Defence Industries).

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**Be defence tech’s missing link**

Defence technology is at the cutting edge of engineering. But its development and management requires more than engineers. Defence-tech organisations have a growing need for professionals who understand the science and engineering in their work, and are able to communicate it to multiple audiences—internal teams, customers, government and community. Our new Diploma in Technology (Defence Industries) prepares you to do just that.

**What will you do?**

Taught over 12 months full-time within a faculty ranked 43 in the world for Computer Science and Engineering*, the degree leverages the University’s strong industry links and world-class research. It has a strong focus on critical thinking and complex problem-solving. In addition to gaining a broad understanding of technology’s foundational sciences—computer, information, mathematical, natural and physical—you’ll develop skills in evaluating and using:

- engineering methods, tools and processes in real-world defence-related contexts
- systems-thinking principles to manage and develop well-structured and maintainable defence technology solutions
- data analytics and cyber security applications
- AI technologies.

**Where could it take you?**

You could become an industry liaison for a government research organisation. You might help establish multi-contractor alliances. Perhaps you’ll manage a tech manufacturer’s public messaging. You’ll also receive advanced standing towards the Bachelor of Technology (Defence Industries).

* Academic Ranking of World Universities 2019
BACHELOR OF TECHNOLOGY (CONSTRUCTION)

SATAC CODE: 354231
GUARANTEED ENTRY: ATAR: 70 / IB: 25
DURATION: 3 years full-time
CAMPUS: North Terrace

PREREQUISITES:
- SACE Stage 2: Mathematical Methods and Physics.
- IB: Mathematics (SL grade 4/HL grade 3) and Physics (SL grade 4/HL grade 3).

adelaide.edu.au/degree-finder
Search technology

Drive construction in the digital age

Advancing technology is creating exciting opportunities for the construction industry. Digital modelling, automation and innovative engineering techniques are changing what’s possible. Worldwide, demand is soaring for graduates with skills and understanding in these areas, together with a firm grasp of contemporary building, project management and sustainability practices. Our new Bachelor of Technology (Construction) will make these opportunities yours.

What will you do?

Taught over three years full-time, the degree leverages the University’s strong industry links and world-class research. It features an emphasis on real-world experience, with an internship providing 456 hours of work-based training.

In addition to gaining a broad, foundational understanding of the construction industry and project management—you’ll develop skills in applying and using:

- new and emerging technology, including digital building-information modelling tools and automation technologies (Industry 4.0)
- civil engineering principles and technology, in real-world construction contexts
- construction project and people management, including legal requirements
- systems thinking, building science, economics and sustainability principles
- effective interpersonal communication, and critical thinking.

The degree is taught across two schools—Civil Engineering and Architecture—and wherever possible you’ll share classes with students of both. This will prepare you well for a future career in which you’ll frequently work alongside professionals in these areas.

Where could it take you?

You’ll be well equipped to work on high-technology infrastructure and construction projects anywhere in the world. From managing the construction of transformational infrastructure projects, including bridges, tunnels and highways, to constructing the next generation of zero-energy buildings using the latest digital and Industry 4.0 technologies.
Technology

**BACHELOR OF TECHNOLOGY (HONOURS) (CONSTRUCTION)**

- **SATAC CODE**: 354241
- **GUARANTEED ENTRY**
  - ATAR: 70 / IB: 25
- **DURATION**: Four years full-time
- **CAMPUS**: North Terrace
- **PREREQUISITES**
  - SACE Stage 2: Mathematical Methods and Physics.
  - IB: Mathematics (SL grade 4/HL grade 3) and Physics (SL grade 4/HL grade 3).

**Reach higher in modern construction**

Advancing technology is creating exciting opportunities for the construction industry. Digital modelling, automation and innovative engineering techniques are changing what’s possible.

Worldwide, demand is soaring for graduates with high-level skills and understanding in these areas, together with a firm grasp of contemporary building, project management and sustainability practices. Our new Bachelor of Technology (Honours)/(Construction) will prepare you to take a leading role.

**What will you do?**

Taught over four years full-time within a faculty ranked 43 in the world for computer science and engineering*, the degree leverages the University’s strong industry links and world-class research. It features an emphasis on real-world experience, with an internship providing 456 hours of work-based training.

In addition to gaining a broad understanding of the foundations of the construction industry and associated project management—you’ll develop skills in evaluating, applying and using:
- new and emerging technology, including digital building-information modelling tools and automation technologies (Industry 4.0)
- civil engineering principles and technology, in real-world construction contexts
- construction project and people management, including legal requirements
- systems thinking, building science, economics and sustainability principles
- highly effective interpersonal communication and critical, independent thinking.

The degree is taught across two schools—Civil Engineering and Architecture—and wherever possible you’ll share classes with students of both. This will prepare you well for a future career in which you’ll frequently work alongside professionals in these areas.

In fourth year, you’ll also undertake major construction design and research projects. In these, and your internship, you’ll be mentored by our world-class, research-active staff and/or industry experts.

**Where could it take you?**

You’ll be ideally placed to work on high-technology infrastructure and construction projects anywhere in the world. From managing the construction of transformational infrastructure projects, including bridges, tunnels and highways, to constructing the next generation of zero-energy buildings using the latest digital and industry 4.0 technologies. You may also choose to continue your study with our Master of Construction Management.

* *Academic Ranking of World Universities 2018*

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**ASSOCIATE DEGREE IN TECHNOLOGY (CONSTRUCTION)**

- **SATAC CODE**: 318011
- **GUARANTEED ENTRY**
  - ATAR: 70 / IB: 25
- **DURATION**: 2 years full-time
- **CAMPUS**: North Terrace
- **PREREQUISITES**
  - SACE Stage 2: Mathematical Methods and Physics.
  - IB: Mathematics (SL grade 4/HL grade 3) and Physics (SL grade 4/HL grade 3).

**Construct global career opportunity**

Advancing technology is creating exciting opportunities for the construction industry. Digital modelling, automation and innovative engineering techniques are changing what’s possible.

Worldwide, demand is soaring for graduates with training in these areas, together with a grasp of contemporary building, project management and sustainability practices. Our new Associate Degree in Technology (Construction) will start you on this path.

**What will you do?**

Taught over two years full-time within a faculty ranked 43 in the world for computer science and engineering*, the degree leverages the University’s strong industry links and world-class research.

In addition to gaining a broad understanding of the foundations of the construction industry and associated project management—you’ll develop skills in using:
- new and emerging technology, including digital building-information modelling tools and automation technologies (Industry 4.0)
- civil engineering principles and technology, in real-world construction contexts
- construction project and people management, including legal requirements
- systems thinking, building science, economics and sustainability principles
- critical thinking.

The degree is taught across two schools—Civil Engineering and Architecture—and wherever possible you’ll share classes with students of both. This will prepare you well for a future career in which you’ll frequently work alongside professionals in these areas.

**Where could it take you?**

You’ll be ready to work on high-technology construction and infrastructure projects anywhere in the world. From managing the construction of transformational infrastructure projects, including bridges, tunnels and highways, to constructing the next generation of zero-energy buildings using the latest digital and industry 4.0 technologies.

* *Academic Ranking of World Universities 2018*
Unravel the mysteries of space and discover the fundamental processes which define our universe and our planet. Astronomy is an ancient yet dynamically modern science, with new discoveries taking place every year. This is the #1 degree in South Australia for Astronomical and Space Sciences research*, and has a 90% satisfaction ranking by students.^

* 2015 Excellence in Research for Australia (ERA)
^ Student Experience Survey Overall Experience Satisfaction Level 2013 – 2016

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This degree introduces students to the sophisticated high-performance computing techniques required to solve high-level problems in theoretical, computational and mathematical physics. Students develop the skills to program parallel supercomputers using state-of-the-art computer languages, and gain the mathematical and computational skills necessary to solve challenging problems at the forefront of physics.
SEIZE THE OPEN DAY

SUN 16 AUG 2020
9AM–4PM

adelaide.edu.au/openday
Undergraduate degrees available at the University of Adelaide. Students with strong interests in more than one area of study may wish to consider a double or combined degree.

For a comprehensive list of available degrees, visit www.adelaide.edu.au/degree-finder

**Business, Economics and Law**
- Bachelor of Accounting
- Bachelor of Accounting and Corporate Finance
- Bachelor of Business Management
- Bachelor of Business Management and Accounting
- Bachelor of Business (Global)
- Bachelor of Commerce
- Bachelor of Corporate Finance
- Bachelor of Economics
- Bachelor of Economics (Advanced)
- Bachelor of Finance
- Bachelor of Innovation and Entrepreneurship
- Bachelor of International Business
- Bachelor of Laws
- Bachelor of Marketing
- Bachelor of Project Management
- Diploma in Business

**Arts**
- Bachelor of Arts
- Bachelor of Arts (Advanced)
- Bachelor of Creative Arts
- Bachelor of Criminology
- Bachelor of Environmental Policy and Management
- Bachelor of International Development
- Bachelor of International Relations
- Bachelor of Languages
- Bachelor of Media
- Bachelor of Music
- Bachelor of Music (Advanced)
- Bachelor of Music Theatre
- Bachelor of Peace and Conflict Studies
- Bachelor of Philosophy, Politics and Economics
- Bachelor of Sociology
- Bachelor of Teaching (Middle) with Bachelor of Arts
- Bachelor of Teaching (Middle) with Bachelor of Music

**Engineering, Computer and Mathematical Sciences**
- Bachelor of Architectural Design
- Bachelor of Computer Science
- Bachelor of Computer Science (Advanced)
- Bachelor of Engineering (Honours) (Architectural and Structural)
- Bachelor of Engineering (Honours) (Chemical)
- Bachelor of Engineering (Honours) (Civil)
- Bachelor of Engineering (Honours) (Electrical and Electronic)
- Bachelor of Engineering (Honours) (Environmental)
- Bachelor of Engineering (Honours) (Mechanical)
- Bachelor of Engineering (Honours) (Mining)
- Bachelor of Engineering (Honours) (Petroleum)
- Bachelor of Engineering (Honours) (Petroleum) with major
- Bachelor of Engineering (Honours) (Software)
- Bachelor of Engineering (Honours) – Flexible Entry
- Bachelor of Engineering (Honours) – Engineering Pathway
- Bachelor of Information Technology
- Bachelor of Mathematical Sciences
- Bachelor of Mathematical Sciences (Advanced)
- Bachelor of Mathematical and Computer Sciences
- Bachelor of Technology (Construction)

**Health**
- Bachelor of Dental Surgery
- Bachelor of Health and Medical Sciences
- Bachelor of Health and Medical Sciences (Advanced)
- Bachelor of Medical Studies / Doctor of Medicine
- Bachelor of Nursing
- Bachelor of Occupational Therapy (Honours)
- Bachelor of Oral Health
- Bachelor of Psychological Science
- Bachelor of Psychology (Advanced) Honours
- Bachelor or Physiotherapy (Honours)
- Bachelor of Speech Therapy (Honours)

**Sciences**
- Bachelor of Agricultural Sciences
- Bachelor of Applied Data Analytics
- Bachelor of Food and Nutrition Science
- Bachelor of Science
- Bachelor of Science (Honours)
- Bachelor of Science (Advanced)
- Bachelor of Science (Advanced) (Honours)
- Bachelor of Science (Animal Behaviour)
- Bachelor of Science (Animal Science)
- Bachelor of Science (Biomedical Science)
- Bachelor of Science (Biotechnology)
- Bachelor of Science (High Performance Computational Physics) (Honours)
- Bachelor of Science (Marine Biology)
- Bachelor of Sciences (Mineral Geoscience)
- Bachelor of Science (Space Science and Astrophysics)
- Bachelor of Science (Veterinary Bioscience)
- Bachelor of Science (Wildlife Conservation Biology)
- Bachelor of Science and Entrepreneurship
- Bachelor of Veterinary Technology
- Bachelor of Viticulture and Oenology
How to apply
Applications to University of Adelaide undergraduate programs are made online via SATAC: www.satac.edu.au
International students should refer to: international.adelaide.edu.au/apply

Entry pathways
There are many pathways applicants can take to apply to the University of Adelaide, including SACE, International Baccalaureate (IB), Subject-based entry, SATAC TAFE, preparatory programs, foundation study and more. To find out more about the available pathways, visit adelaide.edu.au/study/undergraduate and select ‘Entry Pathways’ from the menu.

Fees and costs
In 2020, student contributions for Commonwealth supported students studying an equivalent full-time study load were as follows.

<table>
<thead>
<tr>
<th>Band</th>
<th>Areas of study</th>
<th>2020 contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Humanities, behavioural sciences, social studies, foreign languages, visual and performing arts, education, nursing, clinical psychology</td>
<td>$6,684</td>
</tr>
<tr>
<td>2</td>
<td>Computing, built environment, allied health, other health, engineering, surveying, agriculture, science, mathematics, statistics</td>
<td>$9,527</td>
</tr>
<tr>
<td>3</td>
<td>Law, dentistry, medicine, veterinary science, accounting, administration, economics, commerce</td>
<td>$11,155</td>
</tr>
</tbody>
</table>

These annual fees are indicative only as actual charges are determined at the course level based on the area of study. Fees may increase in 2021.

HECS Higher Education Loan
This program, known as HECS-HELP assists eligible students to pay their student contribution. Further information is available at: www.studyassist.gov.au

Scholarships
The University of Adelaide has a range of scholarships available to students from a variety of backgrounds and academic levels. Comprehensive information about scholarships, and how to apply, can be obtained by contacting us (refer below for details) or visiting the scholarships website: adelaide.edu.au/scholarships

Student services and amenities fee
Students are charged an annual student services and amenities fee (SSAF) to assist with the funding of student services and amenities at the University. In 2020, the SSAF amount for full-time students was $308, and for part-time students it was $231. Fees may increase in 2021. Eligible students may defer this fee to an SA-HELP loan. For further information about the SSAF and SA-HELP visit: adelaide.edu.au/student/finance and select ‘Other Fees and Charges’.

Additional costs
Students may be required to pay for specialist equipment, reading materials, etc. Students are advised not to purchase any equipment until they receive their faculty/school handbook, available during orientation. For more information on other program-related fees and charges, visit adelaide.edu.au/student/finance and select ‘Other Fees and Charges’.

Adjustment factors
SATAC centrally administer a South Australian Universities Adjustment Factors Scheme. The two schemes are the SA Universities Equity Scheme and the SA Language, Literacy and Mathematics Adjustment Factors Scheme. For more details, visit adelaide.edu.au and search ‘adjustment factors’.

Degree intake
Many undergraduate degrees will allow students to begin study in February or July. Please refer to individual degrees on Degree Finder (adelaide.edu.au/degree-finder) to check whether midyear entry is available. Where Degree Finder states ‘subject to availability’ applicants should contact Ask Adelaide (refer below for details) to check whether midyear entry is available.

Deferring your studies
Most undergraduate degrees can be deferred for up to two years. Please refer to specific degrees for exceptions.

English language requirements for international students
All international students undertaking an Australian year 12 program are required to achieve a Pass grade or above in one of the approved English as a Second Language or English language subjects. If an applicant attempts, but does not pass, the English language subject then alternative options, such as an acceptable English language proficiency test result, may be arranged.

Permanent residency
International students who have studied an Australian year 12 program or the IB and expect to be granted Australian permanent residency before the commencement of their university study must contact Future Student Enquiries.

Accommodation
The University understands that finding the right accommodation is important to successful study. For accommodation options and costs please visit: adelaide.edu.au/accommodation

Admission transparency
We believe in providing clear and relevant information to help student choose the best university and degree to study. Find out more, visit adelaide.edu.au/study/undergraduate/admissions-information

More information
Answer your questions using our online Knowledge Base or our helpful staff can respond via email to your enquiries. Please see back cover for contact details.
KAURNA ACKNOWLEDGEMENT

We acknowledge and pay our respects to the Kaurna people, the original custodians of the Adelaide Plains and the land on which the University of Adelaide’s campuses at North Terrace, Waite, and Roseworthy are built. We acknowledge the deep feelings of attachment and relationship of the Kaurna people to country and we respect and value their past, present and ongoing connection to the land and cultural beliefs. The University continues to develop respectful and reciprocal relationships with all Indigenous peoples in Australia, and with other Indigenous peoples throughout the world.