



MONASH
University

Engineering

Undergraduate Courses | 2016

monash.edu/engineering



[it's more than you think]

» What does a kangaroo tattoo have to do with Engineering?
Find out more inside.



A staple technology in science fiction for generations is getting closer to reality thanks to a small research lab in the Faculty of Engineering.

Nanobionics bridges the gap between electronic and biological systems by using microscopic nanofibres one-thousandth the diameter of a strand of hair and combining them with synthetic DNA segments.

Professor Wenlong Cheng and his team have already used this technology to create a flexible wearable sensor that could soon make the ubiquitous fitness wristband obsolete. But wearable technology is only a first-step to true integration. Imagine a day when tattoos are not just for aesthetic purposes. You could have a kangaroo tattoo reporting all of your vital statistics to you or your doctor. Or you might decide that you use the logo of your favourite sports club.

Nanobionics could also play a key role in monitoring patients with a heart condition, or as a non-invasive tool to assist in the fight against cancer. It could allow doctors to diagnose illnesses and in some cases treat them without the need for surgery.

This interdisciplinary research combines engineering with science and medicine. It challenges disciplinary boundaries and seeks to improve the lives of others.

As a Monash student, you will be taught by researchers and professionals who are constantly pushing the boundaries of what is possible.

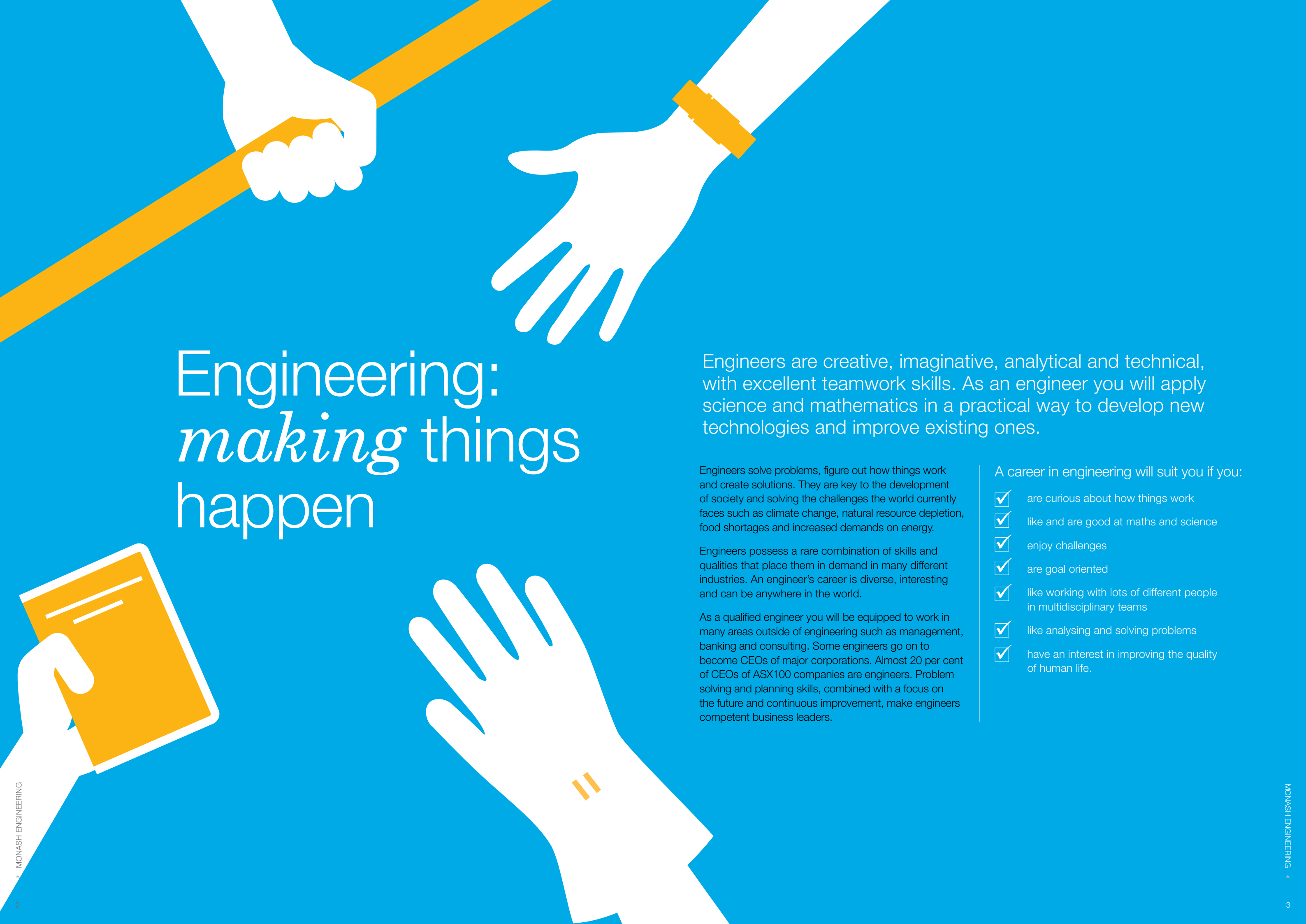


For more information
visit [monash.edu](https://www.monash.edu)

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Engineering: *making* things happen

Engineers are creative, imaginative, analytical and technical, with excellent teamwork skills. As an engineer you will apply science and mathematics in a practical way to develop new technologies and improve existing ones.

Engineers solve problems, figure out how things work and create solutions. They are key to the development of society and solving the challenges the world currently faces such as climate change, natural resource depletion, food shortages and increased demands on energy.

Engineers possess a rare combination of skills and qualities that place them in demand in many different industries. An engineer's career is diverse, interesting and can be anywhere in the world.

As a qualified engineer you will be equipped to work in many areas outside of engineering such as management, banking and consulting. Some engineers go on to become CEOs of major corporations. Almost 20 per cent of CEOs of ASX100 companies are engineers. Problem solving and planning skills, combined with a focus on the future and continuous improvement, make engineers competent business leaders.

A career in engineering will suit you if you:

- ✓ are curious about how things work
- ✓ like and are good at maths and science
- ✓ enjoy challenges
- ✓ are goal oriented
- ✓ like working with lots of different people in multidisciplinary teams
- ✓ like analysing and solving problems
- ✓ have an interest in improving the quality of human life.

The Monash *difference*

Employers know that an engineering degree from Monash University provides the ideal combination of:

Practical hands-on
training



Theoretical learning



More choice; greater flexibility

Not everyone is sure what kind of engineering they want to study, or exactly where their future lies. So Monash created an engineering degree that gives you maximum choice and flexibility.

The Common First Year

The Bachelor of Engineering (Honours) has a common first year, allowing you to better understand engineering and its specialisations before deciding which to pursue, from level two. You can choose from Aerospace, Chemical, Civil, Electrical and Computer Systems, Environmental, Materials, Mechanical, Mechatronics, Mining or Software Engineering. See page 16 for more details.

Double Degrees

Many double degrees are available to maximise your career options.

Whether it's Architectural Design, Arts, Biomedical Science, Commerce, Commerce Specialist, Design, Law, Pharmaceutical Science or Science, Monash allows you to study engineering while pursuing other passions and interests. See page 14 for further details.

Professional recognition

Monash Engineering degrees are recognised by the following professional engineering bodies:

- Engineers Australia
- The Institution of Chemical Engineers (Bachelor of Chemical Engineering (Honours) only)
- Engineering Accreditation Council Malaysia (Malaysian Engineering degrees only)
- Australia is a signatory to the Washington Accord, which enables Monash Engineering graduates to work in any other signatory country, without the need to re-qualify.



For more information about the Washington Accord and a list of signatories visit: ieagreements.org/washington-accord

Excellence in research

Monash undertakes innovative, multidisciplinary research addressing national and international priorities. Monash Engineering has a highly esteemed research profile with extensive links to both industry and the research community worldwide.

Industry-funded awards and prizes

Strong links with industry enable the Faculty of Engineering to offer you a wide range of prizes and scholarships. More than 50 awards and prizes are presented annually.

► See back cover for a list of our industry sponsors.



DID YOU KNOW

You can complete your engineering qualification at Monash in just four years, or study for five years and graduate with a double degree*, or a masters.

*See admissions table on page 30 for details on course duration.



Monash University is a member of the Group of Eight – a select group of Australia's leading universities. Group of Eight universities are consistently the first choice for high-achieving students.

Engineering is a hands-on discipline where learning goes beyond the classroom, so it's important to choose a university with the very best facilities to support your studies.

The *finest* facilities

Monash University's world-class engineering facilities include:

- Computer laboratory facilities, available 24/7, with printing, multimedia, notebook and wireless areas.
- The Cave2™. Imagine being able to step inside a microscope, a virtual world, or the lens of a robot on Mars. With facilities such as the Cave2™, an immersive visualisation platform, you can.
- A science and technology library and resource centre designed specifically for engineering studies.
- The largest wind tunnel in the Southern Hemisphere, used to test the aerodynamics of everything from vehicles (including airplanes, unmanned aerial vehicles, trucks, trains, buildings, yachts and the Monash Motorsport car) to elite athletes such as Tour de France winner Cadel Evans.
- The Monash Centre for Electron Microscopy, housing one of the world's most powerful electron microscopes.
- Communications and power laboratories equipped with commercial systems and best-in-class instrumentation.
- Optical microscopy imaging laboratories.
- The New Horizons Centre, a Monash/CSIRO collaboration dedicated to research and development themes selected for their national and international importance. These include future manufacturing, biological engineering, renewable energy and modelling and simulation.

Engineering *scholarships*

Monash celebrates academic excellence and supports students who are disadvantaged. Monash Engineering offers you a range of scholarships to help ensure that money and circumstances are not barriers to you accessing a world-class engineering education. Visit monash.edu.au/scholarships for a full list of scholarships, bursaries and awards available and for full details.

Engineering Excellence Award

Awarded to the highest-achieving eligible year 12 students entering an engineering course at Monash in Australia. Recipients must receive an ATAR or equivalent of at least 98.00. Includes an invitation to participate in the prestigious Leadership in a Technological Environment program (see page 8 for details).

Number available: Up to 50

Total value: \$24,000

Engineering International Undergraduate Award

Awarded to the highest-achieving eligible international students studying Year 12 or IB in Australia who receive an ATAR or equivalent of at least 90.00.

Number available: Up to 50

Total value: \$5000 (One off payment)

Mining Engineering Scholarship

Awarded to the highest-achieving eligible year 12 students entering the Bachelor of Mining Engineering (Honours). Recipients must receive an ATAR or equivalent of at least 98.00.

Number available: Up to 5

Total value: \$24,000

Women in Engineering Scholarship

Awarded to the highest-achieving eligible year 12 female students commencing an undergraduate engineering program offered by the Faculty of Engineering.

Number available: Up to 50

Total value: \$5000 (One off payment)

Engineering Indigenous Scholarship for Equity

Offered in conjunction with Monash College, this scholarship is awarded to the highest-achieving indigenous students commencing a Diploma of Engineering at Monash College, and articulating to a Bachelor of Engineering (Honours) degree.

Number available: Variable

Total value: Full tuition fees paid for the Diploma of Engineering at Monash College, plus \$6000 per 48 credit points of study for the minimum number of credit points required to complete the Bachelor of Engineering (Honours) degree.

More than an Engineering course: *the total experience*

Students working on an industry partner project as part of the Monash Industry Team Initiative (MITI).



Leadership in a Technological Environment program (LITE)

Outstanding academic performance is not always first on an employer's must-have list: employers want graduates who are highly skilled, well-rounded individuals. Many place interpersonal and communication skills, critical reasoning and problem-solving, together with passion, at the top of their list.

At Monash we open your eyes to a world outside the classroom. As a Monash Engineering graduate, you leave prepared for leadership, success and – most importantly – life. The following are just a few examples of the activities you can get involved in while at Monash Engineering.

The Leadership in a Technological Environment program is designed to transform you into a future engineering leader. It provides a rare opportunity for you to network, acquire life skills and learn about leadership outside the formal classroom environment.

Industry partners are regularly invited to deliver workshops on the engineering profession. These sessions will allow you to network with industry professionals and discover the diversity offered by a career in engineering.

All excellence scholarship recipients are invited to participate in this program. Other students can apply to participate in the program from second year.

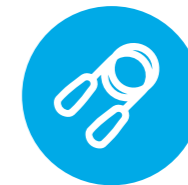


Work Ready Program

This valuable program equips you with job application skills to secure employment.

A Monash Engineering degree plus the Work Ready Program will give you the edge in a competitive employment market.

Build confidence in career planning, finding work in engineering, developing a professional profile and writing job applications. Participate in mock interviews and meet professional engineers through 'speed networking'.



Monash Industry Training Initiative (MITI)

Talented students + industry engaged learning = optimum outcomes.

The MITI Program provides a rare opportunity for students to combine academic theory with practical application while working in a contemporary business environment.

The MITI Program is an Australian first and is unique to Monash University. Working as part of a multi-disciplinary team, students are exposed to leading industry experts and challenging projects that encourage and support positive learning outcomes in the areas of problem solving, innovation and design.

An invaluable experience for all participants, MITI complements the University's commitment to equipping students for life's challenges by offering insight into the business world, practical learning opportunities, leadership and teamwork.



Zoe Van Gulick
Bachelor of Materials Engineering (Honours) and Bachelor of Commerce

"The Leadership in a Technological Environment (LITE) program teaches me invaluable skills and has heaps of opportunities for networking, both with like-minded students and industry professionals. It is definitely a step in the right direction for securing employment when I graduate."



Visit miti.monash.edu for more information.



Real research experience

As an undergraduate Engineering student, you will have the opportunity to undertake research training while studying.

The Summer Research Program offers 12 weeks of paid research work during your university break. Undergraduate students who are in level 3 or above, have a minimum of 48 credit points remaining in their degree and have a weighted average mark greater than 80% are invited to apply to undertake a research project over a 12-week period.

You will work closely with academic staff on a broad range of fascinating research projects.



Monash Motorsport

Join the Monash Motorsport team to help conceive, design, build and race a formula-style racing car.

Judged by the Society of Automotive Engineers (SAE), the mission of the Monash Motorsport team is to create the most competitive and well-designed car possible.

As a Monash Motorsport team member, you will build strong links with the local engineering industry and make use of cutting-edge facilities such as Monash's wind tunnel (for aerodynamic testing). The current Australasian champion, Monash Motorsport is ranked seventh in the world out of over 500 teams.



Student clubs and societies

Clubs and societies provide you with the chance to get more out of your university experience. Visit monashclubs.org for information on the clubs and societies available.

If you are looking for an active and social university life then check out the Monash Engineering Students' Society (MESS).

MESS is a student-run, not-for-profit organisation that will enrich your Monash experience through social and academic experiences that are engaging and fun.

MESS also produces an annual Engineering Careers Guide – a useful resource to help you secure employment when you graduate.

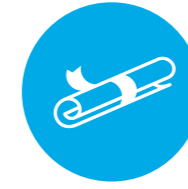


Engineers Without Borders (EWB)

EWB is an international volunteer organisation that aims to improve the knowledge and physical resources of people in need around the world.

EWB works with developing communities to achieve environmentally sustainable, socially responsible and economically viable solutions to engineering problems, with an emphasis on education.

The Monash University chapter is involved in a wide range of projects, and is increasing its membership every year.



Diploma of Languages

The Faculty of Engineering, in conjunction with the Faculty of Arts, allows you to undertake a Diploma of Languages from your second year.

If you undertake a Diploma of Languages you may wish to also take part in study abroad or exchange in third year to consolidate your language skills.



Study abroad and exchange

Spending part of your Engineering degree overseas on exchange will expose you to new ways of learning and living. You will also build an international network, develop independence and enjoy a cross-cultural experience.

Monash has exchange agreements with more than 100 universities in 25 different countries, which enables you to have an international experience while your overseas studies are credited towards your degree. Many students who participate in an approved exchange or study abroad program are eligible to receive a travel grant from Monash.

As an engineering student you will also have the opportunity to go on exchange for six months to Monash Malaysia. Students from Monash Malaysia can also apply to spend one semester at Clayton.



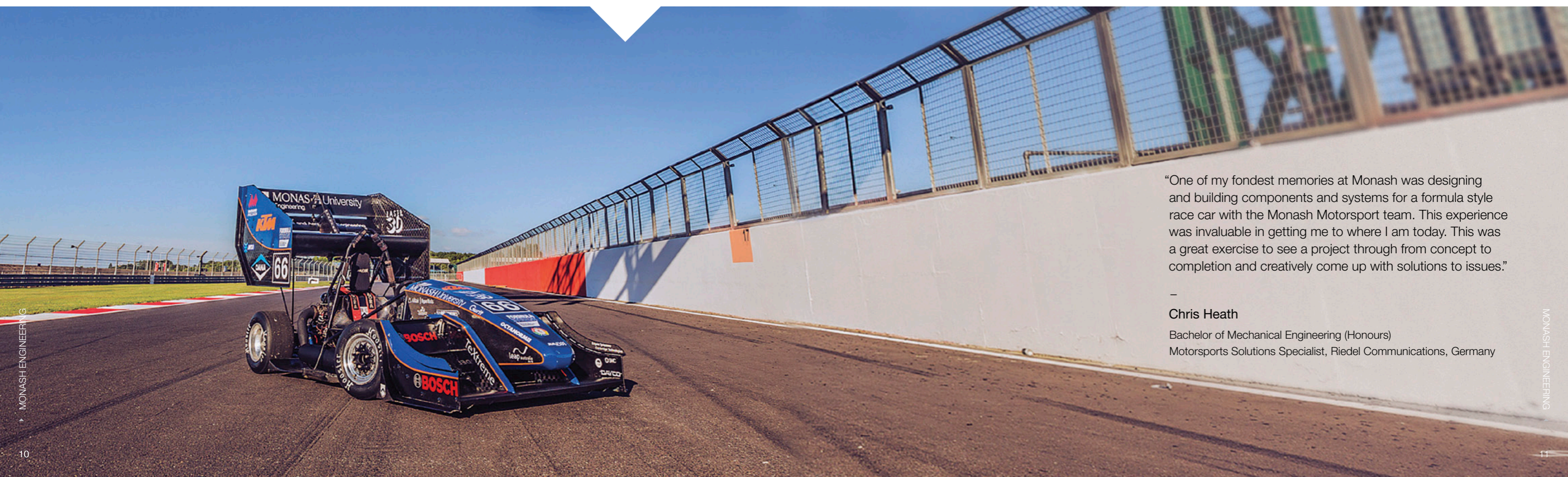
Visit monashmotorsport.com for more information.



Visit monashclubs.org for more information.



Visit monash.edu/study-abroad/outbound for more information.



“One of my fondest memories at Monash was designing and building components and systems for a formula style race car with the Monash Motorsport team. This experience was invaluable in getting me to where I am today. This was a great exercise to see a project through from concept to completion and creatively come up with solutions to issues.”

—
Chris Heath

Bachelor of Mechanical Engineering (Honours)
Motorsports Solutions Specialist, Riedel Communications, Germany

Graduate opportunities

Engineering graduates are amongst Australia's highest earners (behind only dentistry and optometry)* and enjoy many and varied career options.

Engineer shortage

The demand for engineers keeps increasing, as the workforce ages and the world shifts to an innovation economy. An Engineers Australia report shows that yearly increases in the number of Australian-trained engineering graduates are still insufficient to meet the current skills shortage. "This has a range of workforce flow-on effects and has led to delays across a number of engineering and infrastructure projects," said Stephen Durkin, CEO of Engineers Australia. What does this mean for engineering graduates? More jobs, more pay.

And the shortage is not limited to Australia. According to the Times Higher Education supplement it is estimated that UK engineering companies will create 2.74 million job opportunities between 2010 and 2020. Each year 87,000 of these will require a degree qualification, yet the UK only produces 46,000 engineering graduates per year.

In the USA, demand for engineers has also grown beyond the supply of graduates. As President Obama has said, "we have made incredible progress in education... but we still don't have enough engineers." Attempts are being made to bridge this gap by increasing the intake of foreign-trained engineers (who can expect a salary 23 per cent higher than average salaries nationwide).

Average Australian engineering salary

\$130,064**

An Engineering degree from Monash University gives you a competitive edge. As a Monash Engineering graduate, you will be a highly sought-after industry professional when you first enter the workforce and throughout your career.

Consider a research degree or the Master of Advanced Engineering

When you have finished your undergraduate degree you may wish to further your studies through a research degree or the Master of Advanced Engineering. A research degree allows you to pursue your particular interests; work on an original idea; have your ideas published; solve a real-world problem; and have the opportunity to work with some of Australia's leading researchers. You'll be thoroughly challenged and will further develop your transferable skills such as communication, data analysis, problem solving and time management.

The Master of Advanced Engineering is for qualified engineers who want to extend their knowledge in their specialisation and advance their leadership and complex problem solving skills.

Faculty-guaranteed scholarships

Designed for high-achieving final year students, faculty-guaranteed scholarships provide an ideal pathway to research studies.

If, at the end of your course, you have achieved an H1 honours-weighted average, we guarantee you a scholarship to undertake a higher degree by research (masters or PhD). The scholarship value is equivalent to the Australian Postgraduate Award rate. Conditions apply.

*MyCareer.com.au
**MyCareer.com.au. Based on job listings inclusive of wage from the last 90 days (as at 13 April 2015). Figure may incorporate total package.

Meet other Monash-minded individuals at Open Day.

Clayton

Sunday, 2 August
10am – 4pm

monash.edu/openday

At Monash Seminar Series

Engineering will be running 2 At Monash Seminars this year.

Learn from students, graduates and staff about the university experience.

Visit: destination.monash

CLAYTON CAMPUS

THURSDAY

28
May

THURSDAY

17
September

Double degrees



Enrol in two degrees at the same time in two completely different areas. More and more organisations seek engineering graduates with expertise in other disciplines. They are continually impressed by the breadth of knowledge and insight evident in double degree graduates from Monash.

A double degree course allows you to pursue a career in either area, or to take up one of the many opportunities emerging at the interface of disciplines. An Engineering double degree offers diversity, more career choices and flexibility.

Architectural Design

The building industry needs engineering professionals with strong architectural knowledge.

The combination of architectural design with civil engineering is an exploration of creative solutions to a wide variety of engineering and social problems, like looking at sustainable ways to build or renovating existing structures to work more efficiently.

You will graduate with valuable skills for transforming the built environment, from the design of buildings or bridges to renovating existing structures to work more efficiently.

The ability to provide solutions through creative thinking and realistic applications will make you attractive to architectural and engineering firms in Australia and overseas.

Arts

Combining an engineering degree with an arts degree provides complementary skills in technology and communications. You will develop the transferable skills employers are looking for: communication, teamwork, research and critical thinking.

You will have the flexibility to create a course that's tailored to your academic interests while exploring different career options.

Arts at Monash provides your comprehensive gateway to approximately forty areas of study across the arts, humanities and social sciences. With this dual degree you will have a portfolio uniquely tailored to meet your interests and aspirations.

Biomedical Science

If you're eager to explore a career in biological/biomedical engineering, consider a double degree in engineering and biomedical science.

Advances in biological sciences and demand for technological solutions are creating new opportunities for engineers. In the coming years engineering will be transformed, as it parallels and fuses with developments in biomedical science.

Commerce

Do you dream of making it big in the business world? If so, engineering and commerce is a powerful combination.

Many CEOs of major corporations have engineering qualifications. People with sound business skills and a strong technological background are consistently in demand across many industries and organisations.

Commerce Specialist

Engineering is about innovation, big-picture thinking and decision making. This combined with commerce specialist prepares you to take on the business world, equipping you with skills that develop your expertise in the specialist areas of actuarial science, economics or finance. This combination will give you genuine depth of study, and the skills to join the next generation of commercial leaders.

Design

Have an eye for form and function? Like to build things? Consider combining mechanical engineering with industrial design to become a product design engineer.

Product design engineers design and develop manufactured products that are functional, ergonomic, beautiful, and well engineered.

This double degree integrates the technical and project management skills of an engineer with the creativity and manufacturing know-how of an industrial designer.



Double degree combinations

The following table shows double degree combinations and the Engineering fields they are available with.

	Architectural Design	Arts	Biomedical Science	Commerce	Commerce Specialist	Design	Law	Pharmaceutical Science	Science
Aerospace		■		■	■		■		■
Chemical		■	■	■	■		■	■	■
Civil	■	■	■	■	■		■		■
Electrical and Computer Systems		■	■	■	■		■		■
Environmental		■		■	■				■
Materials		■	■	■	■		■		■
Mechanical		■	■	■	■	■	■		■
Mechatronics		■		■	■				■
Mining									
Software		■		■	■				■

Laws (Honours)

An engineering and law degree bridges the gap between technological and legal issues.

This double degree combination produces engineers who are sensitive to the legal, corporate and political implications of technology and its applications.

As an engineering and law graduate, you are eligible to practise as a solicitor; alternatively, you might join the legal team of an engineering, manufacturing or technology firm.

Science

Engineering is concerned with the application of science; however, many engineers are fascinated by scientific investigation and eager to enhance their understanding of the pure sciences.

You may choose to combine engineering with food science or technology, or explore the fundamentals of the cosmos through astrophysics. Or you may be interested in the most fascinating machine of all: the human body.

Pharmaceutical Science

There is an increasing demand for pharmaceutical scientists with the expertise to take products from the design and formulation stage through to manufacturing.

Chemical engineers can design, run and troubleshoot production facilities, but their training typically excludes the skills to develop pharmaceutical and related products. Similarly, formulation scientists can invent and test new products such as pharmaceuticals, food and cosmetics, but they lack the know-how to manage the product process beyond the laboratory stage.

This double degree combines chemical engineering and pharmaceutical science to produce professionals capable of covering the full spectrum of the pharmaceutical product design and development process.



Chrisha Satkunarajah
Bachelor of Civil Engineering (Honours)
and Bachelor of Commerce

"In industry there appears to be a disconnect between the technical and the financial/commercial demands within a business. I see the engineering and commerce double degree being a powerful combination, allowing me to better understand these demands and position me with greater knowledge as I enter the workforce."

► [Read more eng.monash.edu.au/prospective/profiles/profile/chrisha-satkunarajah](https://eng.monash.edu.au/prospective/profiles/profile/chrisha-satkunarajah)

Bachelor of Engineering (Honours)

LOCATION Clayton	ATAR E: 90+	IB SCORE E: 34+
DURATION 4 Years		
STRUCTURE Specialist		
DEGREE AWARDED*		
<ul style="list-style-type: none"> ■ Bachelor of Aerospace Engineering (Honours) ■ Bachelor of Chemical Engineering (Honours) ■ Bachelor of Civil Engineering (Honours) ■ Bachelor of Electrical and Computer Systems Engineering (Honours) ■ Bachelor of Environmental Engineering (Honours) ■ Bachelor of Materials Engineering (Honours) ■ Bachelor of Mechanical Engineering (Honours) ■ Bachelor of Mechatronics Engineering (Honours) ■ Bachelor of Mining Engineering (Honours) ■ Bachelor of Software Engineering (Honours)** 		

*The degree you are awarded will reflect your chosen specialisation.

**Expected ATAR for Software Engineering is 88+ IB 32+.

E – Expected: The provided score is estimated and is to be used as a guide only.

The Common First Year

The Bachelor of Engineering (Honours) at Monash University has a common first year, giving you time and experience before you select your engineering specialisation. You learn about the engineering profession and its specialisations before deciding which to pursue from second year.

Many students change their career paths after exploring the vast field of engineering and its specialisations during the common first year. The common first year allows you to immerse yourself in engineering from day one while developing the knowledge to make an informed decision.

In your first year you will solve real engineering problems and develop the fundamental skills to be successful in your studies. You will learn about the role and function of engineers in society and immerse yourself in hands-on design-and-build activities.

You might develop mobile apps, build a bridge then learn how to tear it down using a trebuchet or build practical power supplies. Learn about aircraft performance, engineering design to make things lighter, faster and stronger and fundamental skills in mathematics and computing.

Then choose your own future.

Prerequisite studies

VCE

English: Units 3 and 4: a study score of at least 30 in English (EAL) or 25 in English other than EAL

Maths: Units 3 and 4: a study score of at least 25 in Mathematical Methods (CAS)

Science: Units 3 and 4: a study score of at least 25 in Chemistry or Physics

IB

English: At least 4 in English SL or 3 in English HL or 5 in English B SL or 4 in English B HL

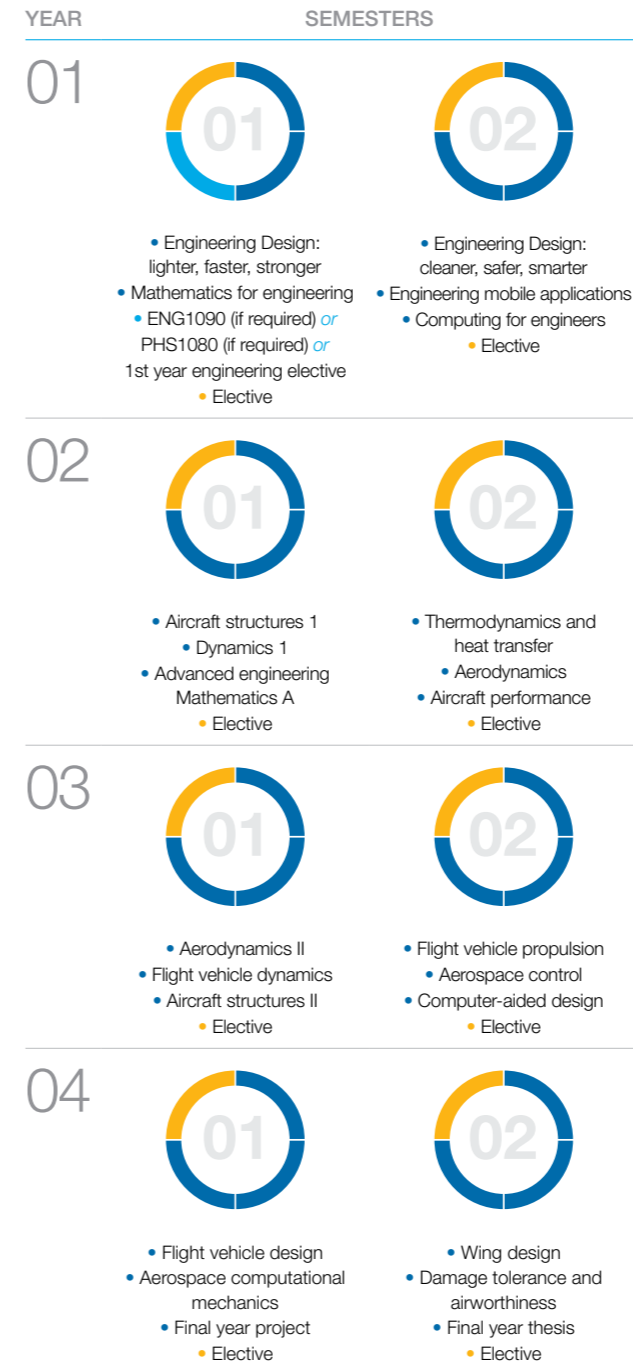
Maths: At least 4 in Mathematics SL or 3 in Mathematics HL

Science: At least 4 in Chemistry SL or 3 in Chemistry HL or 4 in Physics SL or 3 in Physics HL

SPECIALIST COURSES AVAILABLE	CLAYTON	MALAYSIA	SEE PAGE
Aerospace	■		18
Chemical	■	■	19
Civil	■	■	20
Electrical and Computer Systems	■	■	21
Environmental	■		22
Materials	■		23
Mechanical	■	■	24
Mechatronics	■	■	25
Mining	■		26
Software	■	■	27

Sample course map

Aerospace engineering



UNIT TYPES

- Required engineering units**
- Some choice:** you can choose from a prescribed list
- Free choice:** you might choose further engineering studies, or you can choose to study units from a different field

For in-depth course descriptions and structures visit: study.monash/courses

“I didn’t know where I wanted to specialise so Monash’s unique Common First Year was a blessing in disguise. It gives you a good understanding of what each branch of engineering entails and helps you to narrow down what path you should take.”

– Tony Harika

Structural Engineer for Hyder Consulting
Bachelor of Civil Engineering (Honours)

Lauren Clay

Bachelor of Aerospace Engineering (Honours) and Bachelor of Arts

“In my role as a Building Physics Engineer, I conduct simulation work to provide advice that encompasses comfortable environments and holistic, whole-building, sustainable design.

I use this analysis to inform design decisions regarding natural ventilation, pedestrian wind comfort, building massing optimisation, microclimate, daylighting, thermal comfort and building energy.

As a student, I was offered a place in the Leadership in a Technological Environment program. The various modules assisted with developing my communication, leadership and networking skills, which complemented my technical training. I developed confidence to network with people from industry, which lead to invaluable career opportunities.”

► [Read more eng.monash.edu.au/prospective/profiles/profile/lauren-clay](http://eng.monash.edu.au/prospective/profiles/profile/lauren-clay)



Bachelor of Engineering (Honours) – Specialisations

Aerospace engineering

Join a thrilling profession in the midst of developing the next generation of flight vehicles. The Airbus A380, A350, A400M and the Boeing 787 are just some of the astounding advances being led by aerospace engineers.

Aerospace engineering is concerned with the design, development and maintenance of flight vehicles. It involves aerodynamics, aerostructures, avionics, propulsion, material science and computational simulation.

Modern flight vehicles are highly complex systems, and aerospace engineering demands a high level of analytical and mathematical ability. It is a profession that is constantly at the forefront of innovation, as it seeks to improve operating efficiencies whilst reducing environmental impact.

Location

Clayton campus

Career options

Aerospace engineering reaches beyond traditional aerospace applications. You might work on automobiles, in energy production and conservation, with lightweight materials or on new manufacturing techniques.

When you graduate you are likely to work in one of these main areas:

- Design and manufacturing
- Research and development
- Airworthiness operations.

You might join a large aerospace company or a general manufacturer that contracts to the aerospace industry. Or you might work at an airline or a government aerospace laboratory or research centre. Formula One and other racing-car teams also employ aerospace engineers.

Aerospace engineering can even lead you towards other professions such as management consulting or finance.

Double degrees available with

- Arts ■ Commerce ■ Commerce Specialist ■ Law ■ Science

Chemical engineering

Chemical engineering applies the physical sciences and/or life sciences to the processing of products. Chemical engineers invent, develop and design processes that convert raw materials into useful products – with minimal environmental impact.

Chemical engineers are also involved with pollution control, protection of the environment and with energy conservation and conversion.

As populations grow and resources and energy reserves decline, the demand for chemical engineers increases.

Chemical engineering at Monash

A selection of high-achieving students is given the opportunity to undertake integrated industrial training in their final year.

Our students have the benefit of expert industry lecturers teaching several units in third and fourth year, in addition to frequent industry guest lecturers in all year levels.

Location

Clayton, Malaysia campus

Career options

As a chemical engineer, you can work in a range of industries including the following:

- biotechnology
- chemical
- energy
- environmental
- food
- minerals
- nanotechnology
- oil
- paper
- petrochemical
- pharmaceutical.

In these industries you would most likely work in one of the following roles:

Process Engineer

You solve production problems, develop new products, reduce energy usage and carbon footprints, increase plant safety and efficiency and oversee plant upgrades and expansions. You work with a team of people in operations, maintenance, and business strategy.

Design Engineer

You work in a consultancy office, designing new plants for clients, as well as extensions to existing plants. You might design a distillation column today, be sizing a heat exchanger tomorrow, work on safety and environmental protections, or work out how to control each unit in the plant to ensure smooth and reliable operation.

Research and Development Engineer

You work in a laboratory or a company, and develop new chemical engineering techniques. You might develop new products or you might work on new catalysts to increase reaction efficiency.

Double degrees available with

- Arts ■ Biomedical Science ■ Commerce ■ Commerce Specialist ■ Law ■ Pharmaceutical Science ■ Science



Jacky Song

Bachelor of Chemical Engineering (Honours) and Bachelor of Commerce

“There are vast career prospects for chemical engineers. Society will continue to rely on chemical engineers to design and undertake large scale projects, so that we can meet the growing demand for sustainable products and services. I love the thought of being able to one day work on an oil-rig in the middle of the Pacific, or analyse geological data collected from two kilometres under the surface of the ocean.

I’m always astounded to hear from engineering graduates where their degree has taken them.”

► [Read more eng.monash.edu.au/prospective/profiles/profile/jacky-song](http://eng.monash.edu.au/prospective/profiles/profile/jacky-song)



Bachelor of Engineering (Honours) – Specialisations

Civil engineering

Civil engineers improve systems and processes that allow humans and nature to coexist with minimal impact. Modern society could not function without them. We need civil engineers to design and build higher-capacity transportation systems. We need them to construct larger commercial and industrial complexes. We need them for water supply and pollution control. And we need them to repair or replace roads, bridges and other structures. Civil engineers design structures including multi-storey buildings, bridges, tunnels, commercial complexes, oil-rig platforms, water systems, road and traffic systems and foundation supports.

A civil engineer might:

- talk to community leaders about the best way to solve a transport problem
- work with a consortium to design an eco-tourism resort
- develop mathematical or physical models of currents to investigate the viability of a new port
- develop the concept of a 'green building' that is environmentally sensitive and efficient
- advise a community group about recycling storm water
- develop specifications, plans and procedures for a new foundation system for unstable soils.

Location

Clayton, Malaysia campus

Civil engineering streams

Structures

Structural engineers design buildings, bridges, airports, railways, commercial complexes, towers, off-shore platforms and tunnels. They ensure structures remain sound under extreme conditions such as wind, waves and earthquakes.

Water

Water engineers manage water supply and drainage systems for people, agriculture and industry. Typically, a water engineer will:

- develop projects to control flood waters
- design dams, spillways and pipe networks
- manage rivers and develop systems to collect and treat wastewater
- develop urban water systems.

Transport

Transport engineers plan the future travel needs of city and country areas. They investigate alternative transport technologies to make existing road and traffic systems safer and more efficient.

Geomechanics

Geomechanical engineers advise on foundation design, support structures, stability of slopes, tunnel design and construction, and the suitability of materials for infrastructure projects.

Career options

Your career prospects as a civil engineer are strong and diverse. When you graduate, you might work in any one of these sectors:

- Private industry
- Government
- Construction and mining
- Marine and resort developments
- Property and land development
- Consulting firms.

Double degrees available with

- Architectural Design ■ Arts ■ Biomedical Science
- Commerce ■ Commerce Specialist ■ Law ■ Science

Jackson Law

Bachelor of Civil Engineering (Honours)
and Bachelor of Commerce

"I chose civil engineering because I want to be involved in large and complex projects that will provide comprehensive solutions and improvements to infrastructure, and benefit communities around the world. I'm currently the Construction Manager with Engineers Without Borders - a club that aims to alleviate disadvantage in communities through humanitarian engineering, volunteering and education."

► [Read more eng.monash.edu.au/prospective/profiles/profile/jackson-law](http://eng.monash.edu.au/prospective/profiles/profile/jackson-law)

Electrical and computer systems engineering

Electrical and computer systems engineering is an extremely diverse field, encompassing biomedical, computer systems, electronics, electrical power engineering, robotics and telecommunications. Electrical and computer systems engineers investigate, plan, design, develop, construct, test, market and maintain a wide range of products and systems.

As an electrical and computer systems engineer you might design and develop digital products such as smartphones, virtual reality systems or computer games, or maybe robotic medical devices to assist in surgery and rehabilitation.

Monash will give you the hands-on training and theoretical insight you need for an exciting future as an electrical and computer systems engineer.

All our students experience industry-standard reprogrammable chips in the laboratories from first year onwards. By third year you will be building miniaturized machines with very powerful processing on board. In fourth year you may apply this knowledge to a 'product' of your own.

Location

Clayton, Malaysia campus

Career options

As an electrical and computer systems engineer you could work locally or internationally in a wide range of industries including:

- power generation
- industrial and power electronics
- automation systems
- computer programming
- robotics
- health care
- water and energy.

Many Monash graduates work in large public and private telecommunications, manufacturing and electrical-power companies. Others work for defence and intelligence organisations.

You will also be prepared for careers in industries such as online ticketing, banking and finance – basically any organisation that needs to create, store, encode and transmit data, or manage complex systems.

Double degrees available with

- Arts ■ Biomedical Science ■ Commerce
- Commerce Specialist ■ Law ■ Science

Sharanya Yoganathan

Bachelor of Electrical and Computer Systems
Engineering (Honours) and Bachelor of Commerce

"Engineering is a meaningful and broad career. Electrical and computer systems engineering is fundamental to our modern way of life, and will shape our future. I find it really exciting that as our world rapidly changes and technology develops, electrical and computer systems engineers are at the forefront of shaping this change.

I am currently the Schools Manager for Robogals Monash – a student organisation aiming to increase gender diversity in engineering and science fields. Through Robogals I've been able to get some great experience working in teams and build on skills that are necessary in the workforce."

► [Read more eng.monash.edu.au/prospective/profiles/profile/sharanya-yoganathan](http://eng.monash.edu.au/prospective/profiles/profile/sharanya-yoganathan)



Emily Darlison

Bachelor of Environmental Engineering (Honours)

“I had a strong interest in the environment and it occurred to me that I could study something I was passionate about. Environmental engineering not only recognises the necessity for our wider environment, but is actively involved in pursuing sustainable development that will be the future of our world.”

► [Read more eng.monash.edu.au/prospective/profiles/profile/emily-darlison](http://eng.monash.edu.au/prospective/profiles/profile/emily-darlison)



Bachelor of Engineering (Honours) – Specialisations

Environmental engineering

Few branches of engineering have such a profound impact on our health and quality of life as environmental engineering.

Environmental engineering involves the implementation and management of solutions and programs in keeping with the principles of sustainable development.

It involves reducing energy and resource use and minimising waste, while providing the community with the development opportunities it needs to grow.

Environmental engineering encompasses water- and air-pollution control; recycling; water supply; waste disposal; land management; transport and the built environment; process engineering; and public health issues.

Location

Clayton campus

Career options

Environmental problems exist in all countries and industries so your opportunities are broad and far reaching.

You might work in air-pollution control, water supply, land management, impact assessment, hazardous-waste management, energy production, stormwater and wastewater management, environmental management systems – and so much more.

Organisations employing environmental engineers include:

- power generation
- engineering consulting firms
- industries that need cleaner production systems
- private and municipal agencies that supply drinking water and treat wastewater
- companies treating and disposing of hazardous waste
- organisations helping to account for carbon and implementing low-carbon solutions
- government agencies monitoring and regulating environmental issues
- universities that teach and conduct sustainability research
- international agencies that aid developing nations.

Double degrees available with

■ Arts ■ Commerce ■ Commerce Specialist ■ Science

Materials engineering

Materials engineering is all about making new materials and improving existing ones. It is about making things stronger, lighter and more functional, sustainable and cost-effective. It underpins much of engineering – if we want to make things, we need to have materials with the right properties.

Whether it's a next-generation jet engine, a biodegradable tissue scaffold to grow organs from stem cells, or new types of solar cells and batteries, the structure, properties and processing of materials are crucial to the final product.

Materials engineers work with everything from the thermal protection of space shuttles and high-tech artificial hip and cochlear implants, to nanoparticles that seek and destroy cancer.

Materials engineering is truly interdisciplinary. It involves physics, mathematics, biology and chemistry, culminating in a ground-breaking research field and a thriving job market.

Location

Clayton campus

Career options

Demand for materials engineers continues to outstrip supply, with Monash graduates receiving an exceptional response in the employment market.

Working across a range of exciting industries including aerospace, biomedical, mining, manufacturing, processing and recycling, materials engineers become:

- metallurgists
- plastics engineers
- ceramists
- adhesive scientists
- process and quality-control engineers
- corrosion or fracture engineers.

As a materials engineer, your expertise will be sought after in:

- the emerging fields of nanotechnology, biomedical materials, electronic materials recycling and energy generation
- the development of lightweight metal alloys
- the use of materials for energy storage such as batteries and fuel cells
- functional materials made at the nanoscale, including the wonder-material 'graphene'
- traditional industries such as metallurgy and mining
- failure analysis.

Double degrees available with

■ Arts ■ Biomedical Science ■ Commerce
■ Commerce Specialist ■ Law ■ Science



Eliza Tipping

Bachelor of Materials Engineering (Honours)
and Bachelor of Commerce

“Materials engineering is the crucial stepping stone to innovation, allowing us to push technological boundaries. It's a relatively new field of engineering, that in a world focused on sustainability, will only continue to grow.”

► [Read more eng.monash.edu.au/prospective/profiles/profile/eliza-tipping](http://eng.monash.edu.au/prospective/profiles/profile/eliza-tipping)

Lisa Mililli

Bachelor of Mechanical Engineering (Honours) and Bachelor of Biomedical Science

“My double degree allowed me to be able to think in a multidisciplinary manner, and incorporate innovation into my interests in development of medical technology. I am a Clinical Affairs Associate for a medical device company and am involved in clinical research and development of software and medical tools for surgeons.”

► [Read more eng.monash.edu.au/prospective/profiles/profile/lisa-mililli](http://eng.monash.edu.au/prospective/profiles/profile/lisa-mililli)



Bachelor of Engineering (Honours) – Specialisations

Mechanical engineering

As a mechanical engineer, you might design advanced materials for supersonic and hypersonic space travel, design robots and automatic control systems, or work with medical professionals to investigate the human body and design instruments for medicine.

Mechanical engineering is about the efficient use of energy for the design and function of all types of mechanisms, from the simplest to the most complex. It builds on physics, chemistry, materials, mathematics and biology to achieve this goal.

Mechanical engineers design and develop everything from door locks to space shuttles. In fact, if it moves, you will find mechanical engineering at the heart of its design.

Mechanical engineers work on robots, propulsion systems, power plants, renewable energy systems, electrical generators, computer systems, climate-control systems, engine cooling, aircraft engines and cars.

New investigation areas include prosthetic limb and joint design, noise and vibration restriction, high-performance composite materials development, flexible manufacturing, mechanical design automation and industrial pollution control.

Location

Clayton, Malaysia campus

Career options

As a mechanical engineer you might pursue one or more of these specialist areas:

- research and development
- product and process design
- technical sales and support
- manufacturing
- field and test engineering
- project management
- systems design
- power plant operations and quality control.

Opportunities exist in nanotechnology, mining systems and processes, aerospace systems and flight control, manufacturing systems and processes, medical systems, bioengineering and many other developing fields.

Industries employing mechanical engineers include:

- petrochemical
- manufacturing
- transportation
- automotive
- aerospace
- electronic
- mining
- robotics.

Other growth industries include communications, banking, public utilities, consulting practices and the entertainment industry.

Double degrees available with

- Arts ■ Biomedical Science ■ Commerce
- Commerce Specialist ■ Design ■ Law ■ Science

Mechatronics engineering

Mechatronics is the nexus between mechanical and electrical engineering, employing artificial intelligence and computer science to make devices smarter.

As a mechatronics engineer you could create planetary exploration rovers or robots for medical applications. Or you might take an everyday household product and turn it into a truly clever device.

Mechatronics is multidisciplinary, integrating mechanics, electronics, computer science and control theory. You will design and build mechanisms and the electronic systems used for their control, enabling you to build safe and efficient autonomous machines.

Applications for mechatronics engineering are virtually unlimited and the need for professionals in this progressive field is increasing. As a mechatronics engineer, you will be in high demand.

Location

Clayton, Malaysia campus

Career options

You will be equipped with the knowledge and skills to design, develop, manufacture and operate the intelligent products and complex systems of today and tomorrow.

The applications for mechatronics engineering are virtually unlimited and the need for professionals in this progressive field is very high, and increasing.

Opportunities exist in nanotechnology, mining systems and processes, robotics and automation, aerospace systems and flight control, manufacturing systems and processes, intelligent systems for motor vehicles, software engineering, telecommunications, medical systems, bioengineering and many other developing fields.

All these areas offer vast opportunities for research and development in academia, research institutions and advanced industry sectors. Mechatronics engineers may also take roles in other areas such as consulting, management and finance.

Double degrees available with

- Arts ■ Commerce ■ Commerce Specialist ■ Science



Samuel de Boer

Bachelor of Mechatronics Engineering (Honours) and Bachelor of Science

“I have always been interested in tinkering with complex devices, breaking them apart and studying how they operate, so engineering seemed like the perfect career for me.

I couldn't decide whether to study mechanical or electrical and computer systems engineering - so I decided to do both with mechatronics!”

► [Read more eng.monash.edu.au/prospective/profiles/profile/samuel-deboer](http://eng.monash.edu.au/prospective/profiles/profile/samuel-deboer)

Peter Kontos

Bachelor of Mining Engineering (Honours)

“After gaining some frontline experience I hope to work internationally to develop an understanding of the different underground mining methods practiced worldwide. I’ve always been fascinated by the sheer scale of mining operations and the equipment involved, and want to further understand the processes that make the extraction of minerals from deep beneath the surface possible.”

► [Read more eng.monash.edu.au/prospective/profiles/profile/peter-kontos](http://eng.monash.edu.au/prospective/profiles/profile/peter-kontos)



Bachelor of Engineering (Honours) – Specialisations

Mining engineering

Mining engineering involves the extraction and processing of ores from the earth. Minerals are the basic inputs for the production of metals, pharmaceuticals and electronic items, as well as a source of fuel, and are used by manufacturing industries and utilities. Mining is essential to our daily lives and contributes to meeting the needs of modern society.

Mining engineers are highly qualified in areas as diverse as geology, metallurgy, the environment and sustainability, mine planning and project management, safety, communications, and leadership.

Mining engineers are needed in all aspects of exploring, planning, extracting and processing minerals, and increasingly work with the community to produce sustainable solutions with a minimal environmental footprint.

Location

Clayton campus

Career options

It is a great time to enter the mining industry. With only about half of Australia’s mining engineer positions filled by mining graduates each year, this degree will help you to stand out from the crowd. As a mining engineer, you’ll be able to work in all aspects of exploring, planning, extracting and processing minerals. Mining engineers have a diverse range of potential career paths including the following:

- evaluating the viability of mineral deposit sites
- planning the safest and most efficient extraction methods
- designing tunnels and shafts for underground operations
- designing pits and haulage roads for open-cut operations
- managing the operations of a mining site
- coordinating safety and environmental conditions
- reporting on mine operating costs
- consulting with the community
- working with modern automated mining technology.

You could also work in a range of other engineering professions involving tunnelling, such as road, rail, hydroelectric and water-supply projects. If you choose to work outside the mining sector, your skills in communication, organisation and project management will be highly regarded by major corporations and government departments in Australia and around the world.

Software engineering

Software is everywhere. It does everything from dispensing medicine to controlling flight paths to monitoring and shaping our shopping habits. Our world’s major companies, governments and organisations depend on smartly designed and well-built software. And they rely on the expertise of skilled software engineers to make it happen.

As a software engineer, you will apply engineering principles to systematically analyse, develop and improve software to ensure it runs effectively, safely and securely.

You will acquire high-level programming expertise, but software engineering goes well beyond writing code. Most modern IT systems are so complicated that teams of people must work together to create them. This specialisation’s emphasis on collaborative studio-based learning will give you strong skills in teamwork, project management and communication.

You have a huge choice of IT electives from Australia’s leading IT Faculty, from Cybersecurity to Games Programming to Business information systems. You can apply for the highly regarded IT Industry Based Learning (IBL) program to do a half-year placement with leading Australian and global organisations. Placements count towards your course and are supported by \$17,000 scholarships.

Location

Clayton, Malaysia campus

Career options

Software engineers work in teams with other software engineers, scientists, managers, and business people. These teams might consist of people in the next office or of people in locations all over the world.

This project-rich specialisation is designed to address industry demand for tech-savvy graduates with large-scale software systems project capability.

Why not join this young and exciting field of engineering which is constantly evolving as new technologies emerge? Specialise in software engineering at Monash for an exciting career designing and creating the cutting-edge IT software systems that we all rely on. The Bachelor of Software Engineering (Honours) is also accredited by the Australian Computer Society.

Double degrees available with

■ Arts ■ Commerce ■ Commerce Specialist ■ Science



Nadia Antanovskii

Bachelor of Software Engineering (Honours)

“As a software engineer you never stop learning. You’re encouraged to broaden your skills and explore new technologies. Working in such an innovative area for several consultancies in Australia and across Europe has meant the pace of my work is quite fast. I never get bored!”

► [Read more eng.monash.edu.au/prospective/profiles/profile/nadia-antanovskii](http://eng.monash.edu.au/prospective/profiles/profile/nadia-antanovskii)

For software engineering estimated ATAR 88+ IB 32+



Monash College is the preferred pathway for students who aspire to study engineering at Monash University but who narrowly miss the academic requirements for direct entry. The course you choose depends on your current level of study and future career plans.

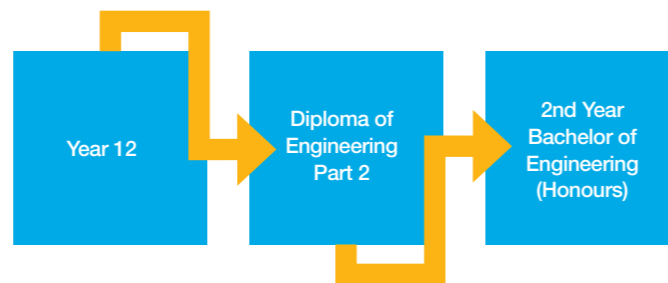
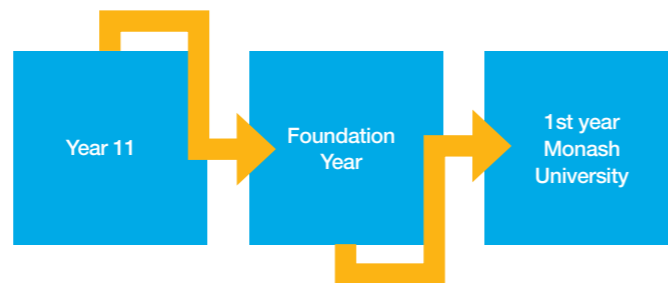
Monash University Foundation Year

The Monash University Foundation Year is the preferred alternative pathway into the Faculty of Engineering at Monash University. The program provides international students with the skills and knowledge required to succeed at Monash University.

After successfully completing Foundation Year and achieving the required marks, you will have a guaranteed place in the first year of relevant courses in the Faculty of Engineering.*

Diploma of Engineering

Monash College diplomas offer specialist preparation for second-year entry into your chosen engineering course. During the program you will study the same curriculum and complete the same assessments as first-year university students. After successfully completing Diploma Part 2 you will be guaranteed a place in the second year of your chosen degree.*



English-language courses

The Monash University English Language Centre is the preferred English pathway into Monash University.

If you do not meet the English language requirement for direct entry into your course you may receive a conditional offer for one of our programs.

Monash English Bridging

Monash English Bridging (MEB) is ideal if you have met the academic requirements for Monash, but have narrowly missed the English requirements.

MEB offers students direct entry into Monash University.* Students who successfully complete the Bridging program do not need more testing.

See our website for entry requirements.

*Not accepted for entry into all degrees. If you need extra English help, consider Monash English.

Monash English

Monash English (ME) will improve your English-language skills to prepare you for entry into Monash English Bridging or Monash University.

The program is taught from beginner to advanced levels. As you improve, you can move to the next level of ME.

To enter the University you will need to sit an IELTS test. We have workshops to help you practise and develop the skills you need to sit the test. Monash English courses start every five weeks.



For more information on Monash College academic pathways visit: monashcollege.edu.au/courses

*Entry requirements and subject prerequisites apply.



For more information on English-language pathways visit: monashcollege.edu.au/english-courses

Admissions, ATARs and prerequisites



DID YOU KNOW

Studying a double degree broadens your career options and allows you to follow more than one passion. It also gives you a more rounded education.

Bachelor of Engineering (Honours)

Specialisation ¹	Campus	Indicative ATAR Score	Common First Year	Course Length (Full Time)	Prerequisites	
					VCE Units 3 and 4	Minimum Study Score Required
Aerospace	Clayton	90+	Yes	4 Years	English (EAL) <i>or</i> any other English + Mathematical Methods (CAS) + Chemistry <i>or</i> Physics	30 25 25 25
Chemical						
Civil						
Electrical and Computer Systems						
Environmental						
Materials						
Mechanical						
Mechatronics						
Mining						
Software						

Bachelor of Engineering (Honours) at Monash University Malaysia

Specialisation ¹	Campus	Entry Score	Common First Year	Course Length (Full Time)
Chemical	Malaysia	Direct application to Malaysia campus. See monash.edu.my for further information.	Yes	4 Years
Civil				
Electrical and Computer Systems				
Mechanical				
Mechatronics				
Software				

1. Selection into disciplines subject to quotas and academic performance during common first year.

2. See monash.edu/mada/apply for details on extra entry requirements.

Double degrees

Course	Campus	Indicative ATAR Score	Common First Year	Course Length (Full Time)	Prerequisites	
					VCE Units 3 and 4	Minimum Study Score Required
Architectural Design						
Engineering (Honours)/ Architectural Design	Clayton and Caulfield	Range of criteria ²	Yes	5 Years	English (EAL) <i>or</i> any other English + Mathematical Methods (CAS) + Chemistry <i>or</i> Physics	30 25 25
Arts						
Engineering (Honours)/ Arts	Clayton	91+	Yes	5 Years	English (EAL) <i>or</i> any other English + Mathematical Methods (CAS) + Chemistry <i>or</i> Physics	30 25 25
Biomedical Science						
Engineering (Honours)/ Biomedical Science	Clayton	95.85	Yes	5 Years	English (EAL) <i>or</i> any other English + Mathematical Methods (CAS) + Chemistry	35 30 25
Commerce						
Engineering (Honours)/ Commerce	Clayton	92+	Yes	5 Years	English (EAL) <i>or</i> any other English + Mathematical Methods (CAS) + Chemistry <i>or</i> Physics	30 25 25
Commerce Specialist						
Engineering (Honours)/ Commerce Specialist	Clayton	92+	Yes	5 Years	English (EAL) <i>or</i> any other English + Mathematical Methods (CAS) + Chemistry <i>or</i> Physics	30 25 25
Design						
Engineering (Honours)/ Design (Industrial Design)	Clayton and Caulfield	Range of criteria ²	Yes	5 Years	English (EAL) <i>or</i> any other English + Mathematical Methods (CAS) + Chemistry <i>or</i> Physics + Folio and interview	30 25 25
Law						
Laws/Engineering (Honours)	Clayton	98+	Yes	6.5 Years	English (EAL) <i>or</i> any other English + Mathematical Methods (CAS) + Chemistry <i>or</i> Physics	35 30 25
Pharmaceutical Science						
Engineering (Honours)/ Pharmaceutical Science	Clayton and Parkville	92.45	Yes	5 Years	English (EAL) <i>or</i> any other English + Mathematical Methods (CAS) + Chemistry	30 25 25
Science						
Engineering (Honours)/ Science	Clayton	90+	Yes	5 Years	English (EAL) <i>or</i> any other English + Mathematical Methods (CAS) + Chemistry <i>or</i> Physics	30 25 25

Qualification	Requirements <small>*See prerequisite subjects</small>	Calculation of Score
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▶ Bachelor of Engineering (Honours) at Clayton and Malaysia

All Indian Senior Secondary School Certificate	80%	Average of the best four academic subjects, excluding physical education and the local language. English met by 60% or above in English subject.
Australian Year 12	ATAR 86.00	Equivalent ATAR.
GCE A Level	10 points	Total score of a maximum of 3 A Levels subjects taken in one academic year. Two AS Levels subjects can be counted in place of one A Level subject, provided that the subject has not been taken at A Level and there is at least one A Level subject in the calculation. Score A Levels as follows: A* or A = 5, B = 4, C = 3, D = 2, E = 1. Score AS Levels as follows: A = 2.5, B = 2, C = 1.5, D = 1, E = 0.5. English met by a minimum of C Grade in GCSE (O Level) English, English Language, English Literature or English as a Second Language (including Speaking and Listening component).
Higher International General Certificate of Secondary Education	12	Total of all scores achieved in one sitting from 6 subjects. Calculate scores as follows: One = 1, Two = 2, Three = 3, Four = 4 (One being the highest). English met by a minimum of C Grade in IGSCSE English.
Hong Kong Diploma of Secondary Education	21	Total of the best five subjects (Category A and C only - Category B not to be used in calculation). Grades scored as follows: Level 1 = 1 (lowest), Level 2 = 2, Level 3 = 3, Level 4 = 4, Level 5 = 5 (highest). A = 5, B = 4, C = 3, D = 2, E = 1. English met by minimum of Level 4 in English Language.
Indian School Certificate (ISC)	75%	Average of % marks for best four subjects as shown on final transcript. English met by a pass (60%) in English.
International Baccalaureate (IB) Diploma	30	Total final score as shown in transcript. Evidence of successful completion of the diploma is required. English met by minimum of 4 in English (SL) or 3 in English (HL).
National Certificate of Educational Achievement Level 3 (NZ)	ATAR 86.40	Equivalent ATAR. New Zealand students undertaking the NCEA, who intend to apply for courses at Monash University, are advised to attempt only achievement standards or mainly achievement standards, as Monash University will only consider applicants on the result of graded assessment. Unit standards do not qualify as graded assessment, as the only possible results are achieved/attempted.
Monash University Foundation Year (MUFY)	305	Final MUFY score as shown on academic record. English met by successful completion of English A and English B with a minimum average of 65%.
Ontario Secondary School Diploma	80%	Average score of the six best Grade 12 academic subjects, excluding workplace preparation and open courses. English met by a pass (50%) in Grade 12 English subject.
RMIT Foundation Year	81%	Average of percentage grades for all subjects completed, including fails. English met by minimum of 65% in English.
La Trobe Foundation Year	81%	Average of percentage grades for all subjects completed, including fails. English met by a minimum of 65% in Academic Study Skills I and II.
SAT (Scholastic Aptitude Test)	1925	Total of the Critical Reading, Mathematics and Writing scores. A completed Grade 12 Diploma must also be submitted. English met by a pass (70%) in Grade 12 English.
South African National Senior Certificate	37	Total results in the best six subjects (excluding Life Orientation). Bonus points, to a maximum of two, for subject scores as follows: English Level 6 or higher = +1, Mathematics Level 6 or higher = +1, Mathematical Literacy Level 6 or higher = +1. South African National Senior Certificate subject Physical Science is considered comparable to VCE Physics and Chemistry Units 3 and 4. English met by minimum of Level 4 in Grade 12 English.
South Australian Certificate of Education (SACE)	ATAR 86.40	Equivalent ATAR.
South Australian Matriculation (SAM)	ATAR 86.40	Equivalent ATAR.
Sri Lanka A Level	12 points	Total score of a maximum of three A Level subjects taken in one academic sitting. A = 5, B = 4, C = 3, S = 1. English met by an IELTS overall score of 6.5 with no band less than 6.0.
STPM Malaysia	9.33 points	Total of SGP scores in the best three academic subjects (Pengajian Am is excluded). English met by a minimum of C grade in SPM English 1119 (SPM English 1119 must be followed by completion of A Levels or an equivalent qualification that has English as the language of instruction and assessment) OR submission of an IELTS with an overall score of 6.5 with no band less than 6.0.
UEC (Malaysia)	3.4	Average of the best five subjects. If average ends in decimal point, the score will be rounded down (eg. average of 4.9 will be rounded down to 4.) Scores calculated as follows: A1 = 1, A2 = 2, B3 = 3, B4 = 4, B5 = 5, B6 = 6. English met by an IELTS overall score of 6.5 with no band less than 6.0.
UNIPREP Indonesia/UNSW Foundation Year	8.0	Final Cumulative Grade Point Average as shown on transcript. English met by a minimum of 6.5 (C Grade) in Academic English.
University of Melbourne Trinity Foundation Year	81%	Average of the best four subjects as shown on final transcript. English is met by a minimum of 65% in 'English' and a minimum of 50% in 'English for Academic Purposes.'

How to apply



Domestic (Australian) and onshore international students

Apply through VTAC

If you are an Australian or New Zealand citizen, an Australian permanent resident, or you are an international student studying an Australian Year 12 or IB in Australia or New Zealand, apply through the Victorian Tertiary Admission Centre (VTAC).

▶ [Visit vtac.edu.au](http://vtac.edu.au)

Prerequisites

Please check that you meet the prerequisites for your chosen course before submitting your application. Prerequisite details for each course can be found in the admissions table beginning on page 30.

Scholarships

▶ [Visit monash.edu/scholarships](http://monash.edu/scholarships)

Fees

Commonwealth Supported Places

Australian citizens, New Zealand citizens, Australian permanent residents and permanent humanitarian visa holders are eligible to apply for a Commonwealth Supported Place (CSP).

▶ [Visit monash.edu.au/enrolments/loans/commonwealth-supported-place.html](http://monash.edu.au/enrolments/loans/commonwealth-supported-place.html)

FEE-HELP

Loan options for eligible applicants.

▶ [Visit monash.edu.au/enrolments/loans/domestic-full-fee.html](http://monash.edu.au/enrolments/loans/domestic-full-fee.html)

International students

International students should apply directly to Monash University and must have completed an equivalent qualification to the Victorian Certificate of Education (VCE) and the prerequisite subjects or equivalent.

▶ [For more information visit monash.edu/study/international](http://monash.edu/study/international)

Fees

▶ [Fees for each course can be found at study.monash](http://monash.edu/study)

Monash is proud to have the following industry partners who support our students through scholarships and prizes:



Monash online

monash.edu/engineering

Find a course

study.monash/courses

International students

monash.edu/study/international

Scholarships

monash.edu/scholarships

Off-campus learning

monash.edu/offcampus

Monash on YouTube

youtube.com/monashunivideo

Future student enquiries

Australian citizens, permanent residents, and New Zealand citizens

Tel: 1800 MONASH (666 274)

Email: future@monash.edu

monash.edu/study/contact

International students

Australia freecall tel: 1800 181 838

Tel: +61 3 9903 4788 (outside Australia)

Email: study@monash.edu