MONASH University

ENGINEERING

UNDERGRADUATE COURSE GUIDE
2025

MONASH ENGINEERS DESIGN THE FUTURE

Become part of a world-class team of engineers, driven by the passion and commitment to deliver sustainable solutions for today's global challenges – including climate, energy, transportation, water, health and communications.

Whether you aspire to contribute to the health of the planet, become the CEO of your own start-up, or become a world-leading researcher, Monash Engineering is where your journey starts.

Kick-start your future at a global top 50 university and graduate ready for a successful career.

CONTENTS

COURSE INFORMATION FAST FACTS

Look for these icons on each course page for key information.

- Location
- Duration
- Intakes
- Requirements[1]
- Specialist course

1 Entry scores listed in the fast facts section are for domestic students only. For international entry requirements see page 30.

AUSTRALIA'S FASTEST HUMAN-POWERED BIKE
Student team Monash Human Power designed, built and rode into the record books with the speed record of 116.39 kmh at the 2023 World Human Powered Speed Challenge at Battle Mountain in Nevada. Scan to read more.
monash.edu/engineering/australias-fastest-human-powered-bike

MONASH UNIVERSITY recognises that its Australian campuses are located on the unceded lands of the people of the Kulin Nations,and pays its respects to their Elders, past and present.

WORLD RANKINGS

#42
IN THE WORLD QS WORLD UNIVERSITY RANKINGS 2024

#54
IN THE WORLD FOR ENGINEERING AND TECHNOLOGY
Times Higher Education, 2024

TOP 100
IN 15 ENGINEERING SUBJECTS GLOBALLY
Academic Ranking of World Universities, 2023

GRADUATE OUTCOMES

98%
STUDENTS WHO DO A CO-OP INTERNSHIP RECEIVE A JOB OFFER FROM THE COMPANY

93.3%
MONASH ENGINEERING GRADUATES ARE IN FULL-TIME EMPLOYMENT WITHIN 4 MONTHS
2023 Graduate Outcomes Survey (GILT)

35K+
ENGINEERING ALUMNI FROM MORE THAN 90 COUNTRIES
2024

ENGINEER YOUR DEGREE

At Monash, Australia's #1 university for engineering.

FOUR-YEAR DEGREE TAILORED TO YOUR FUTURE

START WITH A COMMON FIRST YEAR

Be immersed in engineering from day one. You'll gain a solid foundation of scientific and design fundamentals, whilst discovering which specialisation best aligns with your goals and interests.

10 SPECIALISATIONS

In second year you will select your specialisation, enabling you to focus on your area of interest[1].

MINORS

Option to add a minor from another engineering discipline or emerging field in your third year.

INDUSTRY EXPERIENCE

Graduate job-ready with professional development and industry experience that is built into the course.

QUALIFIED AND ACCREDITED

Recognised by Engineers Australia and the Washington Accord, our graduates are accredited to work in Australia and other countries including Canada, China, India, Japan, Singapore, UK and USA.

ENGINEERS AUSTRALIA

DOUBLE YOUR QUALIFICATIONS

DOUBLE DEGREE

Complement and extend your engineering degree by gaining a double degree with only one extra year of study.[2]

ACCELERATED MASTERS

The Master's Accelerated pathway gets you on a fast-track to a postgraduate qualification in just 4.5 years.[3]

EXPAND YOUR EXPERTISE

INDUSTRY PLACEMENTS

Apply your knowledge and skills in the real world with one of the many Monash Industry Experience programs.

STUDENT TEAMS

Join one of our world-renowned student teams. Compete in local and international competitions whilst working alongside team sponsors and industry partners.

EXPLORE RESEARCH

Take a deeper dive to gain research experience via final year projects and summer research program.

GLOBAL EXCHANGE

Take the opportunity to study abroad at more than 100 partner universities.

1 Biomedical engineering specialisation is selected from the first year.
2 Additional 2.25 years for engineering and laws double degree.
3. Duration depends on master's specialisation selected. Refer to website monash.edu/engineering/masters-accelerated-pathway.

WITH ALL THE SUPPORT YOU NEED. REALISE YOUR FULL POTENTIAL.

WORLD-CLASS FACILITIES

Thrive in our dynamic and interactive learning spaces, state-of-the-art fabrication facilities and collaborative makerspaces.

LEARN FROM THE BEST

Learn the latest engineering concepts from professors and lecturers who are leaders in their fields. Your labs and hands-on workshops are also supported by teaching associates with recent experience as students themselves.

GENEROUS SCHOLARSHIPS

Monash celebrates academic excellence and diversity, and we offer a range of scholarships and awards to help ensure money and circumstances aren't barriers to you getting a world-leading engineering education.

MENTORING AND OUTREACH

- Peer mentors for all first-year students
- Women in Engineering at Monash (WEM) student team and Women in Engineering mentoring program
- Mentoring, support and outreach programs for Indigenous students
- LGBTIQ+ mentoring and support (GLEAM)

VIBRANT AND INCLUSIVE CAMPUS

Feel alive in a multicultural environment with exceptional social, cultural and sporting facilities, a huge range of food choices, medical and wellbeing service, and a comprehensive orientation program.

LIFE-LONG CONNECTIONS

Build your networks through student teams, clubs and societies and our Monash Engineering alumni network of more than 35,000 graduates from 90 countries.

A CAREER IN ENGINEERING

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

CONSIDER A CAREER IN ENGINEERING IF YOU:

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

WHAT DO ENGINEERS DO?

Engineers solve problems, figure out how things work and create solutions. They're key to the development of society and solving the challenges faced by our world, such as climate change, natural resource depletion, food shortages, supply of clean drinking water and increased demands on energy. Engineers possess a rare combination of skills and qualities that place them in demand in many industries. An engineer's career is diverse, interesting and can be anywhere in the world.

As a qualified engineer, you'll also be equipped to work in many areas outside of engineering, such as management, banking and consulting. Problem-solving and planning skills, combined with a focus on the future and continuous improvement, make engineers excellent business leaders.

UNLIMITED CAREER OPTIONS

Engineers design, build and test everything we use to create a liveable and sustainable world. Their unique skills are needed in nearly every industry. With hundreds of different types of engineering jobs the possibilities are endless.

Some of our graduates have gone on to successful careers as:

- Biomaterials and nanotechnology engineers in medical development companies
- Global development engineers for non-governmental organisations (NGOs)
- Chemical process engineers in the food and agriculture industry
- Project manager, consultant, or industrial designer in building and construction
- Computer scientist and wireless network engineer in telecommunications
- Artificial Intelligence and software engineers in the defence force
- Capital works engineer in sustainability, water and energy field
- Executive Director of access and operations in a global mining company
- Robotics and avionics engineers for an international space agency
- Director of transport modelling and mapping for a government infrastructure authority
- Entrepreneur and business owner in a start-up tech company
- CEO and Chief Engineers in the automotive industry.

As a Monash Engineering graduate, you'll be a highly sought-after industry professional when you first enter the workforce and throughout your career.

$120k

AVERAGE AUSTRALIAN ENGINEERING SALARY
Adzuna Job Report, 2024.

93.3%

ENGINEERING GRADUATES ARE IN FULL-TIME EMPLOYMENT WITHIN FOUR MONTHS
2023 Graduate Outcomes Survey – Longitudinal, Quality Indicators for Learning and Teaching (QILT).

JOBS IN ENGINEERING ARE PREDICTED TO GROW OVER THE NEXT FIVE YEARS – TWICE AS FAST AS NON-STEM JOBS
Employment Outlook – March 2022, Australian Government.

I WORK AT GOOGLE CLOUD AS A CUSTOMER ENGINEER SPECIALISING IN ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING.

Some of the projects I worked on at Google were really exciting. For example, I hosted a live APAC-wide webinar on the latest generative AI technologies available at Google Cloud, attracting 1500+ attendees. I also ran an AI Bootcamp, guiding participants to strategise and implement AI and machine learning into their business context. These experiences accelerated my development as a thought leader in the AI space and continually challenge me after university."

EMILY QIAO
Bachelor of Electrical and Computer Systems Engineering (Honours) and Bachelor of Commerce
Artificial Intelligence Customer Engineer, Google
Dean's Advisory Council, Monash University

"I work as a spacecraft propulsion engineer on various missions across telecommunications, space exploration and earth observation and science. Being involved in the Monash High Powered Rocketry team ignited the passion for space, that is now a huge part of my life and, it set me up well as an engineer."

MEAGHAN MUNRO
Bachelor of Aerospace Engineering (Honours)
Spacecraft Propulsion Engineer,
Airbus Defence and Space, UK

"As part of my engineering degree at Monash, I did a Co-op internship at Amazon Prime Air in Seattle, USA.

I worked on a project to securely log and compress video images from drone flights so they can be transferred over PCIEs and stored for future use. I worked alongside some incredible people during my placement and this experience led me to being offered a role at Amazon Prime Air in the USA as a Software Developer after I graduated."

CHRIS YU
Bachelor of Robotics and Mechatronics Engineering (Honours) and Bachelor of Science
Software Developer, Amazon Prime Air

"I aspire to work on an oil platform in the near future. I've always been interested in technology and machinery. I joined Monash Connected Autonomous Vehicle (MCAV) software engineering team and worked on developing the vehicle's decision-making capabilities, designing and building an emergency linear actuation braking system and implementing an autonomous steering algorithm."

QURRATU RASHID
Bachelor of Mechanical Engineering (Honours)
Idea Incubation Team, PETRONAS
Co-Founder, Findel

Scan or visit to read Qurratu's story
monash.edu/engineering/change-makers/qurratu

WORLD-CLASS FACILITIES

The engineering precinct at Monash University provides facilities that will enhance your personal learning experience.

MONASH MAKERSPACE

The Monash Makerspace is a facility with the latest equipment for our students, staff, alumni and industry partners to come together to build, design and create, and encourage entrepreneurial activities.

Linked to The Generator, Monash's entrepreneurial platform, students can access support to allow them to turn ideas into reality.

Other student collaboration, design and technical lab spaces:

- Design and build studios: equipt with industry standard simulation, prototyping, fabrication and manufacturing facilities for student projects.
- ChemBio makerspace: purpose-built for student teams to conduct wet-lab chemical and biological experiments.
- Digital makerspace: with high performance equipment to support IT and Engineering student teams to cultivate their tech, coding and AI projects and passions.
- SAMPLE Labs: a Student Analytical Makerspace and Pilot Lab Environment that has pilot, analytical, digital twin wet labs for students and industry.
- Industry Innovation studio: for students completing the Industry Innovation Program (IIP) to design, assemble and test industry projects.

WOODSIDE BUILDING FOR TECHNOLOGY AND DESIGN

The Woodside Building for Technology and Design has the latest dynamic and interactive learning spaces, labs and technology. The five-storey, smart-technology enabled building is one of the world's most efficient and innovative teaching spaces and fosters innovation and collaboration – allowing students to explore, design, construct and investigate new technologies required for a sustainable energy future.

MONASH INNOVATION LABS

The Monash Innovation Labs is a vibrant ecosystem where industry partners, researchers and students come together, with purpose-built infrastructure to spark insights and fast-track innovations.

The Industry Innovation, Co-operative Education and Industry Doctoral programs are coordinated in Monash Innovation Labs and provide students the opportunity to connect with industry, gain work experience, and boost employability.

MONASH TECHNOLOGY PRECINCT

Connecting the university's top talent, government initiatives and industry partners - with powerful research infrastructure. The Monash Technology Precinct has been recognised by the Global Institute for Innovation Districts (GIID) as an example of how effective land planning and zoning activities can enable innovation and foster a thriving, multipurpose ecosystem.

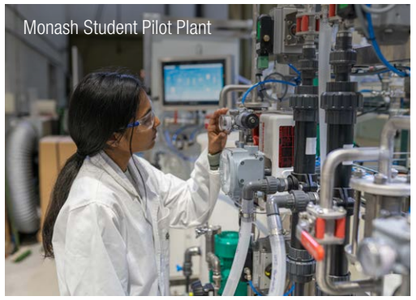
Monash is also home to world-class research facilities including:

- New Horizons Research Centre
- Monash Centre for Additive Manufacturing (MCAM)
- Woodside FutureLab
- The TITAN Microscope
- X-ray Analytical Platform
- National Drop Weight Impact Testing Facility
- Monash Robotics
- The Living Lab
- Australian Synchrotron.

TAKE A VIRTUAL TOUR AROUND SOME OF MONASH ENGINEERING'S FACILITIES

bit.ly/3TSNXFx

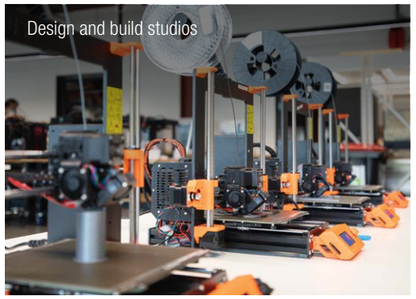
Woodside Building for Technology and Design


Monash Student Pilot Plant

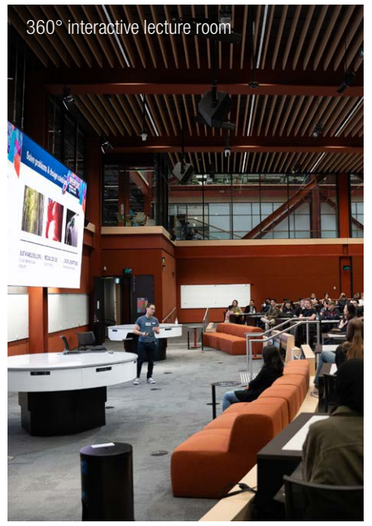

Monash Makerspace


New Horizons Research Centre


Monash Robotics Lab


Design and build studios


Monash Innovation Labs


360° interactive lecture room

GRADUATE WORK-READY

Connect with industry on campus, undertake an internship or enhance your professional skills in the way that works best for you. Whether you want to unlock your leadership potential or start thinking like an entrepreneur, you'll have access to programs that leave you prepared for leadership, success and—most importantly—life.

Whilst academic capability is essential, employer's are looking for 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.

Gain industry and professional experience, in the way that works best for you. Connect with industry on campus, undertake an internship with one of our partner organisations or collaborate on a real project for a company.

PROFESSIONAL PRACTICE

Industry experience is embedded into your degree, providing a competitive edge to your engineering journey. The professional practice curriculum allows you to choose from four units to align your industry experience with your interests and career aspirations: a classroom-taught unit, working in student teams, engaging in work-integrated learning or participating in a Co-op internship.

monash.edu/engineering/professional-practice

CO-OPERATIVE EDUCATION PROGRAM (CO-OP)

The Co-op program gives you a kick-start on your future engineering career. Undertake 3, 6 or 12 month full-time or part-time, paid internships with our industry partner organisations and gain practical, hands-on skills engineering skills that complement your studies. With Co-op internships you'll graduate job-ready with the skills, employment experience and a new professional network that sets you up for success.

monash.edu/engineering/coop

CAREER READY SERIES

Extend your learning beyond the classroom, and stand out in the crowded job-market. The Series provides professional development events and activities focused on fine tuning your employability skills. It includes opportunities to engage with industry and alumni, and to participate in tailored workshops to maximise your graduate employment prospects.

monash.edu/engineering/career-ready-series

CONTINUOUS PROFESSIONAL DEVELOPMENT (CPD)

The CPD unit is a compulsory requirement for Engineering students. You'll create an online collection of all work, volunteering, and personal and professional development opportunities you experience throughout your time studying your degree. There are many opportunities to help you complete the minimum of 420 CPD hours required. When you graduate, your CPD Completion Certificate makes an impressive addition to your CV, and it also supports Engineers Australia certification.

monash.edu/engineering/CPD

INDUSTRY INNOVATION PROGRAM (IIP)

The IIP is a scholarship-based industry training program where you to gain valuable work experience while staying on campus. Work on a six or twelve month project based at the Monash Innovation Labs in collaboration with an industry partner. Obtain professional project experience and develop innovation, problem-solving and employability skills to further your career.

monash.edu/industry-innovation-program

RESEARCH EXPERIENCE

You can experience Monash Engineering's world-leading research while studying your degree. Participate in innovative, multidisciplinary research through student teams, in your final year project (FYP) and our undergraduate Summer Research Program, working alongside researchers who are leaders in their field and contribute to real research projects.

monash.edu/engineering/summer-research-program

MENTORING

Mentoring can offer support and encouragement to help you succeed, enjoy your studies and gain insights into a career in engineering. The Friends and Mentors in Engineering (FaME) group mentoring program helps new students settle into university, make friends and get the best out of study and life at Monash. The alumni group mentoring program is available in your final years of study. Meet successful industry alumni who've had a similar student journey as you, seek career advice and learn from their experiences.

monash.edu/engineering/mentoring

ENTREPRENEURIAL PROGRAMS

Creativity and entrepreneurialism are at the centre of engineering design education at Monash. You can access dedicated, collaborative design and build spaces to take an idea to reality. The University's entrepreneurial initiative, The Generator, provides experiential education, mentors and seed funding to support you and your startup or social enterprise on your entrepreneurial journey.

monash.edu/entrepreneurship

GLOBAL EXCHANGE AND STUDY ABROAD

Spending part of your degree overseas on exchange* will expose you to new ways of learning and living. You'll build an international network, develop independence and enjoy a cross-cultural experience. Monash has exchange agreements with more than 150 universities in over 30 countries. You can also study at Malaysia campus and Monash Malaysia students can apply to spend a semester at Clayton, Australia. Or experience the transformative impact of Monash's Global Immersion Guarantee (GIG).

monash.edu/study-abroad/outbound

INDUSTRY EXPERIENCE TO SET YOU UP FOR SUCCESS

Manning Peart is in his final year of an Environmental Engineering and Commerce double degree.

Manning has undertaken two Co-operative Education Program ("Co-op") internships whilst studying. A one-year opportunity at infrastructure company Acciona Rail, as part of the massive project to replace dangerous and congested road-rail crossings and the second Co-op internship at Australian Clinical Labs as a Production Simulation Lead. Here Manning is working on a project applying the latest in smart technology to high-volume processing of pathology specimens for the leading pathology provider.

"The highlight of my course was starting my current internship with Australian Clinical Labs. It's a challenging role that requires me to use a lot of the skills I've developed through my degree and past career experience, which makes it all the more rewarding.

I can't recommend the Co-op program highly enough - it's where I've learned the most about my passions and the knowledge and skills I will need to continue on this career path."

> "The Co-op program has been a great way for both the business and Manning to learn from each other and develop a superior solution by complementing each others' skill sets.
>
> Manning and the team at Monash Innovation Labs, Smart Manufacturing Lab are very competent in the field of process excellence and we were confident Monash had the backup within its ranks to support such a complex project."
>
> **CAMPBELL HEATH**
> National Business Improvement Manager
> Australian Clinical Labs
>
> AUSTRALIAN Clinicalabs

98%
OF STUDENTS RECEIVE JOB OFFERS FROM THEIR CO-OP EMPLOYER

Scan or visit to discover more about our paid Co-op internship program and to read Manning's story.

monash.edu/engineering/coop

STUDENT TEAMS AND CLUBS

Student-led teams, clubs and societies can give you a head-start and prepare you for your career. Providing opportunities to put theory into practice in a design-build-compete environment. Develop hands-on skills, solve real problems and compete on the world stage. Form lasting friendships, industry connections, and develop your professional skills whilst pursuing areas you're passionate about.

Joining a student team will set you up for career success. It's how you distinguish yourself from the crowd and demonstrate to future employers that you can translate your study into practice. You'll get to experience authentic, real-world projects and challenges. Work in diverse, multi-disciplinary teams to deliver innovative products or drive change to make the world a better place.

Our student-run clubs and societies provide opportunities to connect with like-minded people, learn new skills and network with professional engineers to expand your circles – and your employment opportunities. Build strong links with the local engineering industry and make use of innovative facilities and leading research. Some of the groups available are:

MONASH ENGINEERING STUDENTS' SOCIETY (MESS)

MESS is a not-for-profit organisation that'll enrich your Monash experience through social, academic and industry experiences that are engaging and fun. MESS also produces an annual engineering careers guide – a useful resource to help you secure post study employment.

MONASH MOTORSPORT (MMS)

Join the MMS team and help conceive, design, build and race a formula-style racing car. The MMS team has a mission to create the most competitive and well-designed formula style race cars possible. They also developed Australia's first competition-ready Formula Student Driverless car.

MONASH HPR

Monash High Powered Rocketry (HPR) is a student team dedicated to the design, analysis and construction of high-powered rockets. They compete in the largest rocketry competition in the world, Spaceport America Cup.

MONASH SUSTAINABLE BUILDINGS

A multidisciplinary team of Engineering, Science and Art, Design and Architecture students whose mission is to create practical net-zero designs that give back to the environment and the community. The team has competed and won international competitions for their sustainable and innovative designs.

ROBOGALS MONASH

Robogals Monash is a not-for-profit organisation that aims to encourage more young women to pursue STEM career opportunities, with a focus on engineering. Robogals offers opportunities to strengthen your communication and leadership skills, and gives volunteers access to professional development opportunities within an international organisation.

WOMEN IN ENGINEERING AT MONASH (WEM)

WEM supports, inspires and connects a network of women-identifying engineers at Monash. The society delivers a variety of events and industry guides to give you easy access to information that helps you make the most of your uni experience, and make a smooth transition into the workplace.

Discover more info
monash.edu/engineering/student-experience/teams-and-clubs

Other engineering clubs, teams and societies you can be involved with are:

- Engineers Without Borders
- Gay and Lesbian Engineers at Monash (GLEAM)
- Materials Engineering and Science Society
- Mechatronics Engineering Clayton Club
- Monash Aerospace and Mechanical Engineering Club
- Monash Association of Civil Engineering Students
- Monash Automation
- Monash Boring Excavating Student Team (BEST)
- Monash BrewLab
- Monash Carbon Capture and Conversion (MC^3)
- Monash Connected Autonomous Vehicle
- Monash DeepNeuron
- Monash Engineering and Pharmaceutical Science Society
- Monash Environmental Engineering Society
- Monash Forge
- Monash High Powered Rocketry
- Monash Human Power
- Monash Motorsport Malaysia
- Monash Pilot Processes
- Monash SynBio Tech
- Monash Uncrewed Aerial Systems
- Monash Young MedTech Innovators
- Precious Plastic Monash
- Shell Eco Marathon Team Monash
- Society of Monash Electrical Engineers
- Society of Monash University Chemical Engineers
- Sustainable Water Monash
- Transport Engineers at Monash.

MONASH NOVA ROVER
Ranked #2 in the world, for their design and build of next generation Mars and Lunar rovers. The team compete in the University Rover Challenge at the Mars Desert Research Station in the United States.

MONASH NOVA ROVER GETS A VISIT FROM NASA
Scan or visit:
monash.edu/engineering/nasa-visits-monash-nova-rover

OUR COURSES

BACHELOR OF ENGINEERING (HONOURS) DEGREE

At Monash you can become a fully qualified and accredited engineer in just four years. Our world-leading team of engineers will immerse you in engineering from day one. Your degree kicks off with a common first year, where you'll gain an understanding of scientific and design fundamentals, and the interaction between engineering and society. You'll also explore the ten engineering disciplines[1] before deciding which to specialise in from second year. See pages 16-25.

Professional and leadership skills, hands-on learning and industry experience are all part of the curriculum, so you can graduate work-ready. See page 8.

If you are completing a single degree course, you can complement your specialisation with a minor[2] in emerging engineering fields and expand your career opportunities. See page 27.

We also offer you the opportunity to broaden your options with a double degree, which can be completed in just one additional year[3]. See page 14.

MASTER'S ACCELERATED PATHWAY

BACHELOR OF ENGINEERING (HONOURS) AND MASTER OF ENGINEERING

Graduate with a bachelor's degree plus an expert master's degree in just four and a half or five years depending on the masters specialisation you select. This is an accelerated pathway program for high-achieving students to be on track to earn both a Bachelor of Engineering (Honours) and a Master of Engineering degree. You'll have an outstanding practical and theoretical preparation for a career in engineering, with a rich selection of specialist electives and strong links to industry.

The master's will extend your technical knowledge and provide you with advanced leadership and complex problem solving skills. Designed to foster innovative thinking, entrepreneurship and professional development. The Master's Accelerated pathway gets you on a fast-track to a graduate qualification, saving you on fees and study time and improving your employment outcomes. See page 26.

monash.edu/engineering/masters-accelerated-pathway

OTHER GRADUATE STUDY OPTIONS

Whether you want to gain a professional edge, or are looking to explore your specialisation at an advanced level or pursue research interests, graduate study will take your qualification and career outcomes to the next level.

- Master of Advanced Engineering
- Master of Engineering
- Master of Professional Engineering
- Master of Engineering Science by Research
- Graduate Research Degree (PhD)
- Industry Doctoral Program

For more information on all the graduate study options available visit:

monash.edu/engineering/postgraduate-study

1 The common first year is not available for the biomedical engineering specialisation. Apply directly to the Bachelor of Biomedical Engineering if you intend to choose this specialisation.
2 Minors are for single degree course only and not available in some specialisations. See **monash.edu/engineering/minors** for details
3. Additional 2.25 years for engineering and laws double degree.
4. Available in Clayton and Malaysia.
5. This minor only available in Malaysia.

10 SPECIALISATIONS

- AEROSPACE ENGINEERING
- ELECTRICAL AND COMPUTER SYSTEMS ENGINEERING
- ROBOTICS AND MECHATRONICS ENGINEERING
- BIOMEDICAL ENGINEERING
- ENVIRONMENTAL ENGINEERING
- SOFTWARE ENGINEERING
- CHEMICAL ENGINEERING
- MATERIALS ENGINEERING
- CIVIL ENGINEERING
- MECHANICAL ENGINEERING

14 MINORS

- ARTIFICIAL INTELLIGENCE IN ENGINEERING[4]
- ENGINEERING ENTREPRENEURSHIP
- MINING ENGINEERING
- SUSTAINABLE ENGINEERING
- CIVIL ENGINEERING
- ENVIRONMENTAL ENGINEERING
- RENEWABLE ENERGY ENGINEERING
- TRANSPORT
- COMPUTATIONAL ENGINEERING
- MEDICAL TECHNOLOGY
- SENSORY SYSTEMS IN INDUSTRY 4.0[5]
- DESIGN AND MANUFACTURING[5]
- MICRO AND NANO TECHNOLOGIES
- SMART MANUFACTURING

DOUBLE YOUR CAREER OPTIONS

Earn two degrees with only one[1] extra year of study and broaden your career opportunities. Combining engineering with another degree gives you a distinct set of skills and helps you stand out in today's competitive job market.

Employers often seek engineering graduates with expertise in other disciplines and are impressed by the breadth of knowledge and insight in double-degree graduates. Combine your engineering degree with commerce, information technology, science and more to pursue a career in either area, or to take up one of the many opportunities emerging at the intersection 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.

You'll 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'll develop the transferable skills employers are looking for: communication, teamwork, research and critical thinking.

Arts at Monash provides your comprehensive gateway to about 40 areas of study across the arts, humanities and social sciences. With this dual degree you'll 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 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.

COMPUTER SCIENCE

Computer science provides solutions to the ever-increasing information challenges in the modern world. Industry needs people who can extract and analyse information from the massive datasets generated by engineering processes and devices. Big data is the new challenge and opportunity in engineering practice across industries from construction and manufacturing, to transport and the energy sector. This double degree integrates theoretical and practical skills to solve engineering problems and create innovative solutions across the IT spectrum, from hardware to software.

DESIGN[2]

Have an eye for form and function? Like to build things? Consider combining mechanical engineering with 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.

INFORMATION TECHNOLOGY

In an age of increasing technological advancements, the synergy between engineering and information technology (IT) will only become stronger. IT underpins engineering practice in all disciplines, and industry needs graduates with skills and expertise spanning both. You could do anything from designing a stunning visualisation of engineering data, to building an app for data collection, to setting up the business IT processes to deliver an engineering product via the internet. This double degree combines creative and problem-solving skills to use IT in engineering applications.

1 Additional 2.25 years for engineering and laws double degree.
2 Industrial design only.
3 Formulation science only.

LAWS (HONOURS)[1]

An engineering and laws double 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're eligible to practise as a solicitor; alternatively, you might join the legal team of an engineering, manufacturing or technology firm.

PHARMACEUTICAL SCIENCE[3]

There's 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 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 processes.

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.

DOUBLE DEGREE COMBINATIONS

The following table shows double degree combinations and the Engineering specialisations with which they're available:

	Architectural Design	Arts	Biomedical Science	Commerce	Computer Science	Design[2]	IT	Laws (Honours)[1]	Pharmaceutical Science[3]	Science
Aerospace		●		●				●		●
Chemical		●	●	●				●	●	●
Civil	●	●	●	●				●		●
Electrical and computer systems		●	●	●	●		●	●		●
Environmental		●		●						●
Materials		●	●	●				●		●
Mechanical		●	●	●		●		●		●
Robotics and Mechatronics		●		●	●		●			●
Software		●		●	●		●			●

For more information, visit
monash.edu/engineering/double-degrees

"I think my curiosity for understanding world processes and how things worked inspired me to study engineering. My interest in chemistry led me to studying a double degree in engineering, as I could upscale the technology and skills learned in my pharmaceutical science degree and it would make me more prepared for industry."

VANNASTRA TOUCH

Bachelor of Chemical Engineering (Honours) and Bachelor of Pharmaceutical Science
President, Monash Engineering and Pharmaceutical Science Society
Research Assistant, Formulytica

AEROSPACE ENGINEERING

Clayton

4 years full-time
8 years part-time

February and July

ATAR: 85[1]
IB: 32[1]
MG: 75

Specialist

DEGREE AWARDED
Bachelor of Aerospace Engineering (Honours)

DOUBLE DEGREES
- Arts
- Commerce
- Laws (Honours)
- Science

MINORS
- Artificial intelligence in engineering
- Computational engineering
- Engineering entrepreneurship
- Medical technology
- Micro and nano technologies
- Mining engineering
- Renewable energy engineering
- Smart manufacturing
- Sustainable engineering
- Transport

CRICOS: 001722B

1 The scores provided are to be used as a guide only, and are either the lowest selection rank to which an offer was made in 2024 or an estimate (E).
MG: Monash Guarantee.

Discover more at
monash.edu/engineering/specialisations/aerospace

Aerospace engineering is concerned with the design, airworthiness, development and maintenance of flight vehicles. It's a multidisciplinary combination of aerodynamics, aero-structures, avionics, propulsion, materials engineering and computational simulation.

As an aerospace engineer, you'll have the skills to tackle many of tomorrow's global challenges. You may be involved in the creation of a more environmentally-friendly aircraft, or even help build a vehicle capable of exploring our solar system and beyond. Project work includes the use of wind tunnels for aerodynamic testing, computational modelling for predicting structural behaviour, advanced manufacturing, and materials and structural testing.

CAREER OPTIONS

When you graduate you could work in aircraft design and maintenance, aerospace control systems, aerodynamics, sustainable energy and conservation, lightweight materials, big data analytics, or new manufacturing techniques. You could join a large aerospace company or a manufacturer that contracts to the aerospace industry. Or work at an airline, a government aerospace laboratory or research centre. Formula One teams also employ aerospace engineers. With the establishment of the Australian Space Agency, you could work with one of the many new space launch or satellite startups in Australia. You could also follow in the footsteps of Monash aerospace alumni and work at an international space agency or multinational. Your training will also equip you to pursue a career in management, consulting or finance. Join a thrilling profession in the midst of developing the next generation of flight vehicles.

The Airbus A380, the Falcon Heavy rocket, and the Mars Perseverance Rover are just some of the advances led by aerospace engineers. Career specialisations include:
- aircraft design and testing
- avionics and control systems
- airport operations and management
- aircraft fleet management
- satellite and launch systems engineering
- research and development
- defence industries
- renewable energy
- transportation aerodynamics
- building and structure design and testing.

"Being in a student team has been the best experience a student could ask for, especially if you love space and rocketry. Joining Monash High Powered Rocketry helped me understand engineering from a very practical perspective and allowed me to connect with like-minded people who shared a similar passion for the things I love."

YOG SHAH
Bachelor of Aerospace Engineering (Honours)
Team Lead, Monash High Powered Rocketry

BIOMEDICAL ENGINEERING

Clayton

4 years full-time
8 years part-time

February

ATAR: 85[1]
IB: 32[1]
MG: 80

Specialist

DEGREE AWARDED
Bachelor of Biomedical Engineering (Honours)

CRICOS: 001722B

1 The scores provided are to be used as a guide only, and are either the lowest selection rank to which an offer was made in 2024 or an estimate (E).
MG: Monash Guarantee.

Discover more at
monash.edu/engineering/specialisations/biomedical

Scan to watch
youtube.com/shorts/cHi3LOcCALU

Biomedical engineers apply engineering design skills to medical and biological sciences for the purpose of improving people's health. X-rays, cardiac pacemakers, ventilators and artificial joints – these are just some of the critical technologies used everyday to save lives and promote better health outcomes, and were all designed by biomedical engineers.

As a biomedical engineer, you'll bridge the gap between medicine and technology to improve diagnostics, monitoring and therapy, and create new medical instruments and devices. Whether you design new 3D-printed prosthetics, use biomaterials to repair and regenerate cells, apply AI principles to advanced monitoring tools, or build your own start-up in the med-tech field, you'll make a powerful impact on patients' treatment, recovery and quality-of-life as a biomedical engineer.

At Monash, you'll be equipped with strong clinical, technical and regulatory foundations in professional biomedical engineering practice, taught by leading academics in physiology, anatomy, molecular biology, materials science, electrical, biomedical, mechanical and chemical engineering.

With our network of industry partners, you'll have opportunities to build your career and gain practical experience before you graduate, while the Australian-first Victorian Heart Hospital, located on the Clayton campus offers exciting opportunities to pursue biomedical engineering research.

Play a leading role in transforming 21st century healthcare, and change millions of lives around the world for the better by studying biomedical engineering.

CAREER OPTIONS

When you graduate as a biomedical engineer, you'll find exciting and rewarding opportunities in the following areas:
- medical equipment and device design and manufacturing
- medical and healthcare services
- pharmaceutical design and manufacturing
- biomedical instrumentation industries
- prosthetics
- research and development
- med-tech entrepreneurship
- engineering consultancy.

"I chose Biomedical engineering because I was interested in medical device technology - applying engineering techniques to drive healthcare innovation and make a difference in people's lives.

What I like most in this specialisation is its interdisciplinary nature. I can take units from many different fields - electrical, mechanical, mechatronics, and materials engineering, as well as biology, anatomy, and physiology."

HANNAH TAY
Bachelor of Biomedical Engineering (Honours)
Partnerships Director, Monash Young Medtech Innovators
Undergraduate Engineer, Hydrix

CHEMICAL ENGINEERING

Clayton, Malaysia

4 years full-time
8 years part-time

February and July

ATAR: 85[1]
IB: 32[1]
MG: 75

Specialist

DEGREE AWARDED
Bachelor of Chemical Engineering (Honours)

DOUBLE DEGREES
- Arts
- Biomedical Science
- Commerce
- Laws (Honours)
- Pharmaceutical Science
- Science

MINORS
- Artificial intelligence in engineering
- Computational engineering
- Medical technology
- Micro and nano technologies
- Mining engineering
- Renewable energy engineering
- Sensory systems in Industry 4.0[3]
- Smart manufacturing
- Sustainable engineering
- Transport

CRICOS: 001722B

1 The scores provided are to be used as a guide only, and are either the lowest selection rank to which an offer was made in 2024 or an estimate (E). MG: Monash Guarantee.
2 Refer to page 28 for Master's Accelerated Pathway entry requirements.
3 Only available at Malaysia campus

Chemical engineering blends chemistry with engineering and other fields including biological science, environmental science, nanotechnology, pharmaceutical science, mathematical modelling, artificial intelligence and digitalisation, mineral processing, management and economics. Many everyday items involve chemical engineering during some stage of their production: pharmaceuticals, computer chips, mobile phones, catalysts, food and water, and our fossil fuel and renewable energy sources, to name just a few.

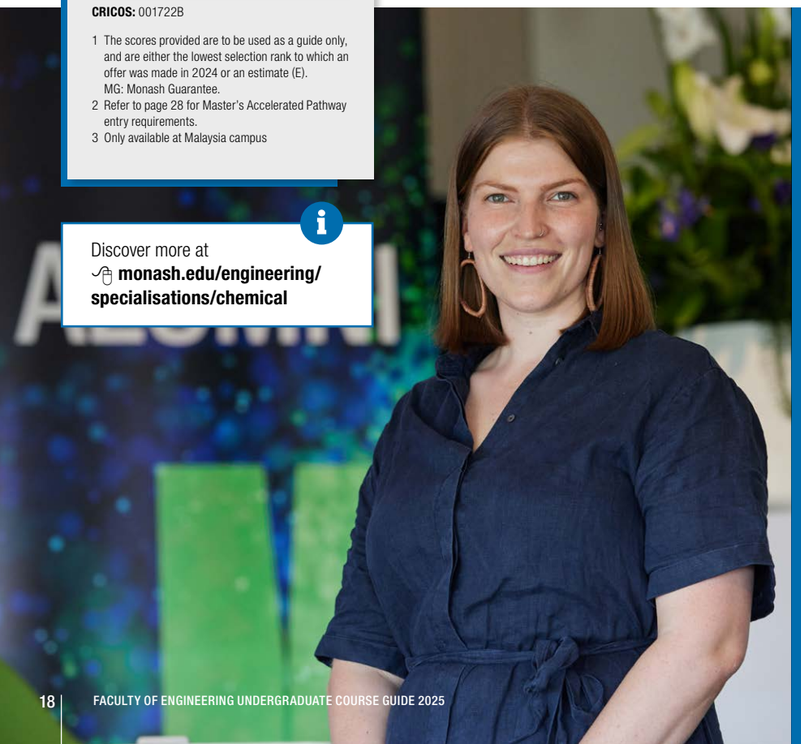
Chemical engineers invent, develop, design and improve the sustainability of processes that convert raw materials and wastes into useful products, with minimal environmental impact. They're also involved with pollution control, energy generation and conservation, recovering energy from waste and renewable resources, and protection of the environment.

A selection of high-achieving students are given the opportunity to undertake integrated industrial training in their final year. You'll 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. You can also take your studies further with the Master of Biological Engineering[2] accelerated pathway. Advance your skills and career opportunities with only one extra year of study.

CAREER OPTIONS

As a chemical engineer, you can:
- develop alternative fuels and renewable sources for chemicals, pharmaceuticals and power production
- design, develop or improve industrial processes and equipment for large-scale chemical and biochemical manufacturing
- design processes to capture carbon to combat global warming
- plan and test methods of manufacturing
- improve energy efficiency or reduce water and resource consumption at manufacturing sites
- develop sustainable methods for the upcycling of byproducts and waste from manufacturing processes
- devise green production processes that are safe, efficient, profitable and environmentally sound
- research naturally-occurring chemical reactions so that these processes can be copied for human benefit
- conduct environmental impact studies
- develop and implement lower emission production technologies
- research and develop new processes and products including mathematical modelling, artificial intelligence and digitalisation
- design, develop and use advanced and renewable materials.

Discover more at
monash.edu/engineering/specialisations/chemical



"Studying pharmaceutical science and chemical engineering gave me twice as many possibilities out of my degree. I ended up pursuing a career in engineering working in the water industry. I love working in the water industry and see it as a way to have tangible impacts on the communities I live in and make a positive impact. The pharmaceutical science subjects have given me a solid foundation in chemistry, but ultimately engineering is where the majority of my technical work sits in."

GEORGINA CATTO-SMITH
Senior Process Engineer (Water), Jacobs
Bachelor of Chemical Engineering (Honours)
and Bachelor of Pharmaceutical Science Graduate

CIVIL ENGINEERING

Clayton, Malaysia

4 years full-time
8 years part-time

February and July

ATAR: 85[1]
IB: 32[1]
MG: 75

Specialist

DEGREE AWARDED
Bachelor of Civil Engineering (Honours)

DOUBLE DEGREES
- Architectural Design
- Arts
- Biomedical Science
- Commerce
- Laws (Honours)
- Science

MINORS
- Artificial intelligence in engineering
- Computational engineering
- Engineering entrepreneurship
- Environmental engineering
- Medical technology
- Micro and nano technologies
- Mining engineering
- Renewable energy engineering
- Smart manufacturing
- Sustainable engineering
- Transport

CRICOS: 001722B

1 The scores provided are to be used as a guide only, and are either the lowest selection rank to which an offer was made in 2024 or an estimate (E). MG: Monash Guarantee.

Civil engineers design and maintain infrastructure systems and processes that allow humans and nature to coexist with minimal impact. Modern society couldn't function without them. We need civil engineers to design and the buildings we live and work in, the roads and bridges we use to travel on, and the water we need to live. We need them to construct larger commercial and industrial complexes. We need them for water supply and pollution control.

We need them to sustainably manage existing civil infrastructure such as roads, bridges and buildings. Civil engineering is more than just hard hats. At Monash we help you prepare for your civil engineering career early, learning the fundamentals and exploring emerging technologies, such as AI, 3D printing and robotics. You will also have the opportunity to gain industry experience in the major fields.

As a civil engineer, you can be involved in:

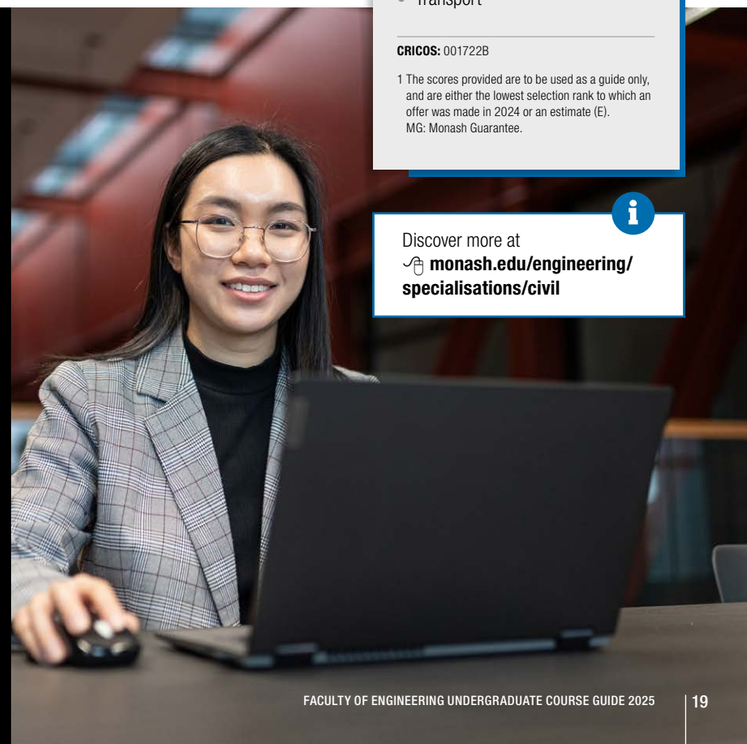
- **Structures** – design and oversee construction of buildings, bridges, airports, railways, commercial complexes, towers, offshore platforms, and tunnels. Ensure structures remain sound under extreme conditions such as heavy traffic, high winds and earthquakes.
- **Water** – plan and manage water supply and drainage systems for communities, agriculture, and industry. Develop projects to control flood waters, design dams, spillways, and pipe networks. Manage rivers and develop systems to collect and treat wastewater, and develop urban water systems.
- **Transport** – plan for the future travel needs of cities and rural areas. Investigate alternative and sustainable transport technologies including electric and autonomous connected vehicles to make existing road and traffic systems safer, more efficient, and user-focused.
- **Geomechanics** – design and analysis of foundations and support structures, slopes, waste containment facilities, dams and tunnels, as well as engineering of geomaterials for infrastructure projects.

CAREER OPTIONS

Graduating as a civil engineer, you'll find challenging and rewarding opportunities in the following areas:
- private industry and government infrastructure
- humanitarian engineering and sustainable development
- construction and mining
- roads and traffic industries
- marine and resort developments property and land development consulting firms
- environmental and renewable energy sectors.

"I was inspired to study engineering because many of my family members are also engineers. Growing up, I was always curious about 'how things work' and the mechanisms behind useful tools and equipment. Now, I'm particularly inspired by the numerous major infrastructure and transport projects being built in Victoria. I would like to be hands-on in delivering these projects successfully to contribute to a positive difference in society."

STACEY WONG
Bachelor of Civil Engineering (Honours)
and Bachelor of Commerce
Undergraduate Engineer, Arup



Discover more at
monash.edu/engineering/specialisations/civil

ELECTRICAL AND COMPUTER SYSTEMS ENGINEERING

Clayton, Malaysia

4 years full-time
8 years part-time

February and July

ATAR: 85[1]
IB: 32[1]
MG: 75

Specialist

DEGREE AWARDED
Bachelor of Electrical and Computer Systems Engineering (Honours)

DOUBLE DEGREES
- Arts
- Biomedical Science
- Commerce
- Computer Science
- Information Technology
- Laws (Honours)
- Science

MINORS
- Artificial intelligence in engineering[2]
- Computational engineering
- Engineering entrepreneurship
- Medical technology
- Micro and nano technologies
- Mining engineering
- Renewable energy engineering
- Smart manufacturing
- Sustainable engineering
- Transport

CRICOS: 001722B

1 The scores provided are to be used as a guide only, and are either the lowest selection rank to which an offer was made in 2024 or an estimate (E). MG: Monash Guarantee.
2 Available in Malaysia and Clayton campus

Discover more at
monash.edu/engineering/specialisations/ecse

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

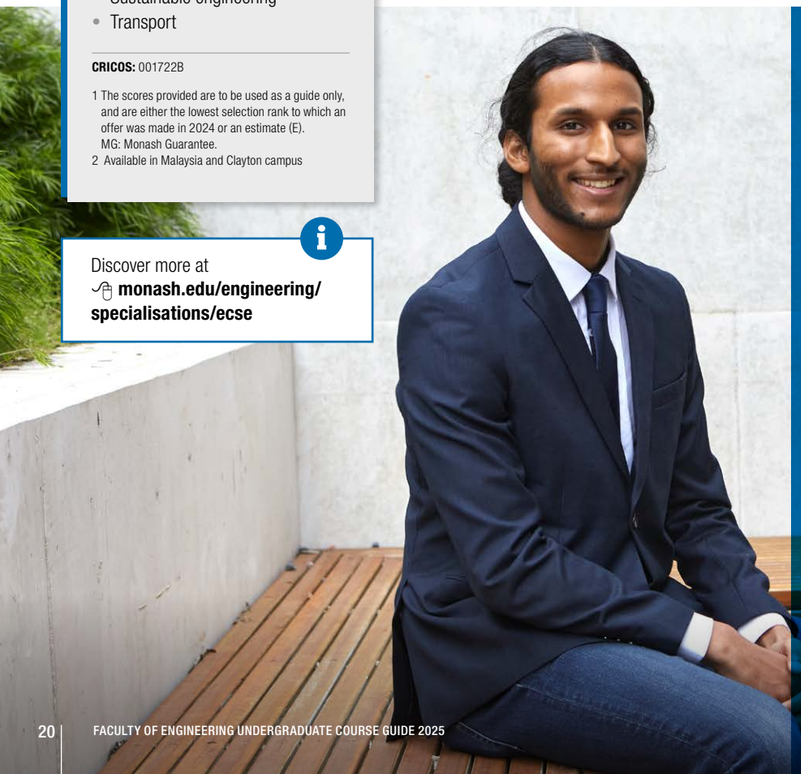
Monash will give you the hands-on training and theoretical insight you need for an exciting future as an electrical and computer systems engineer.

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

CAREER OPTIONS

As an electrical and computer systems engineer, you can 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. Many Monash graduates work in large public and private telecommunications, manufacturing and electrical-power companies. Others work for defence and intelligence organisations. You could also work in banking and finance, or with any organisation that creates, stores, encodes and transmits big data or manages complex systems. You could work locally or internationally in a wide range of industries, including:

- power generation
- industrial and power electronics
- wireless communications
- artificial intelligence
- optical communications
- the 'Internet of Things'
- embedded systems
- computer programming
- robotics
- healthcare.



"For my Co-op internship I had the pleasure of working at Amazon Prime Air in Seattle in the U.S. over the Summer. My project involved working on an automated system for the new stricter coding standards they are implementing. I created a dashboard that tracks the metrics and allows programmers and developers to see which parts of the code were violating the new standard and make changes."

CARL PERERA
Bachelor of Electrical and Computer Systems Engineering (Honours) and Bachelor of Computer Science
Software Development Engineer Intern, Amazon Prime Air
Teaching Associate, Monash University

ENVIRONMENTAL ENGINEERING

Clayton

4 years full-time
8 years part-time

February and July

ATAR: 85[1]
IB: 32[1]
MG: 75

Specialist

DEGREE AWARDED
Bachelor of Environmental Engineering (Honours)

DOUBLE DEGREES
- Arts
- Commerce
- Science

MINORS
- Artificial intelligence in engineering
- Civil engineering
- Computational engineering
- Engineering entrepreneurship
- Medical technology
- Micro and nano technologies
- Mining engineering
- Renewable energy engineering
- Smart manufacturing
- Transport

CRICOS: 001722B

1 The scores provided are to be used as a guide only, and are either the lowest selection rank to which an offer was made in 2024 or an estimate (E). MG: Monash Guarantee.

Discover more at
monash.edu/engineering/specialisations/environmental

Few branches of engineering have such a profound impact on our health, quality of life and the future wellbeing of the planet as environmental engineering. It's all about the implementation and management of solutions and programs in keeping with the principles of sustainable development and humanitarian engineering. It involves reducing energy and resource use and both minimising and managing waste and pollution, 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.

CAREER OPTIONS

Environmental problems exist in all countries and industries, so your opportunities are broad and far-reaching. You could work in air-pollution control, water supply, land management, impact assessment, hazardous-waste management, energy production, stormwater and wastewater management, environmental management systems and 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
- environmental agencies and companies responsible for mine-site rehabilitation
- 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
- not for profit and international agencies that aid developing nations.

"As I became more involved in environmental advocacy at school, I realized that environmental engineering was an excellent fit for me. It combines all of my interests to help solve problems. It's more than just learning theories; it's about finding practical ways to protect our planet and make life better for everyone."

OLIVIA AJU
Bachelor of Environmental Engineering (Honours)
3rd Year Student Representative,
Monash Environmental Engineering Society
Peer Mentor, Friends and Mentors in Engineering

MATERIALS ENGINEERING

Clayton

4 years full-time
8 years part-time

February and July

ATAR: 85[1]
IB: 32[1]
MG: 75

Specialist

DEGREE AWARDED
Bachelor of Materials Engineering (Honours)

DOUBLE DEGREES
- Arts
- Biomedical Science
- Commerce
- Laws (Honours)
- Science

MINORS
- Artificial intelligence in engineering
- Computational engineering
- Engineering entrepreneurship
- Medical technology
- Micro and nano technologies
- Mining engineering
- Renewable energy engineering
- Smart manufacturing
- Sustainable engineering
- Transport

CRICOS: 001722B

1 The scores provided are to be used as a guide only, and are either the lowest selection rank to which an offer was made in 2024 or an estimate (E). MG: Monash Guarantee.

Materials engineering is all about making new materials and improving existing ones. It's 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 to high-tech artificial hip and cochlear implants, and nanoparticles that seek and destroy cancer. Materials engineering is truly interdisciplinary. It involves physics, mathematics, biology and chemistry, culminating in a groundbreaking research field and a thriving job market. As a materials engineer, your expertise will be sought after in the emerging fields of additive manufacturing, nanotechnology, biomedical materials, electronic materials, recycling and energy generation, the development of lightweight metal alloys and in traditional industries such as metallurgy, mining and infrastructure engineering.

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, future manufacturing, 3D printing and recycling, materials engineers become:

- biomedical engineers
- consultants
- technology managers
- metallurgists
- materials designers
- energy scientists and future renewable energy engineers
- forensic engineers, aircraft forensics and defence scientists
- materials selection specialists (aero, auto, structural)
- failure analysts
- process engineers
- corrosion or durability engineers
- research engineers.

Discover more at
monash.edu/engineering/specialisations/materials

Scan to watch
youtube.com/watch?v=euN6VH-ske4

"It's been fantastic having an undergraduate experience in different countries and cultures in materials engineering. You get to see the difference in the research fields and industrial structures of two different countries. Giving me lots of research opportunities whilst in university."

YU CAI
Bachelor of Materials Engineering (Honours)
at Monash University and Central South University
Research Assistant, Monash University

MECHANICAL ENGINEERING

Clayton, Malaysia

4 years full-time
8 years part-time

February and July

ATAR: 85[1]
IB: 32[1]
MG: 75

Specialist

DEGREE AWARDED
Bachelor of Mechanical Engineering (Honours)

DOUBLE DEGREES
- Arts
- Biomedical Science
- Commerce
- Design
- Laws (Honours)
- Science

MINORS
- Artificial intelligence in engineering[2]
- Design and Manufacturing[3]
- Computational engineering
- Engineering entrepreneurship
- Medical technology
- Micro and nano technologies
- Mining engineering
- Renewable energy engineering
- Sensory systems in Industry[3]
- Smart manufacturing
- Sustainable engineering
- Transport

CRICOS: 001722B

1 The scores provided are to be used as a guide only, and are either the lowest selection rank to which an offer was made in 2024 or an estimate (E). MG: Monash Guarantee.
2 Available in Malaysia and Clayton campus.
3 Minor available at Malaysia campus only.

Mechanical engineering is about the intelligent and efficient use of motion and energy to create, manufacture and assemble designs, from the simplest to the most complex. It builds on physics, chemistry, materials, mathematics and biology. Growth industries include advanced manufacturing, smart buildings, renewable energy and medical engineering.

Mechanical engineers are increasingly engaged in the design and operation of devices that require skills that cross traditional discipline boundaries. As a mechanical engineer, you can build a career in industries including power generation, water distribution, biomedical, mass transportation and air travel.

You can use your skills to improve life on earth and in space. From designing sustainable living spaces to cost-effective products for the developing world. You could even create a safe and reliable human habitat to support future space exploration.

CAREER OPTIONS

As a mechanical engineer you will discover countless opportunities in a wide range of industries in Australia and overseas. You could pursue one or more of these specialist areas:

- building systems engineering
- advanced manufacturing
- robotics and automation
- advanced engineering analyses
- food production
- medical device technologies
- advanced composite structures
- micro and nano technologies
- wind engineering
- sustainable engineering systems
- renewable energy systems.

"I was the team lead of the Monash Hearthack and established the first international artificial heart team with fellow student, Julie Dao. We had the privilege of representing our team at the Heart Hackathon competition in Dallas, Texas and competed against other universities across the world in the design and build of a novel total artificial heart."

GEORGIA BROOKS
Bachelor of Mechanical Engineering (Honours)
and Bachelor of Biomedical Science
HeartHack Team lead, Monash Young MedTech Innovators

Discover more at
monash.edu/engineering/specialisations/mechanical

Scan me or visit
monash.edu/engineering/change-makers/georgia

ROBOTICS AND MECHATRONICS ENGINEERING

Clayton, Malaysia

4 years full-time
8 years part-time

February and July

ATAR: 85[1]
IB: 32[1]
MG: 75

Specialist

DEGREE AWARDED
Bachelor of Robotics and Mechatronics Engineering (Honours)

DOUBLE DEGREES
- Arts
- Commerce
- Computer Science
- Information Technology
- Science

MINORS
- Artificial intelligence in engineering[2,3]
- Design and Manufacturing[4]
- Computational engineering
- Engineering entrepreneurship
- Medical technology
- Micro and nano technologies
- Mining engineering
- Renewable energy engineering
- Sensory systems in Industry 4.0[4]
- Smart manufacturing[2]
- Sustainable engineering
- Transport

CRICOS: 001722B

1 The scores provided are to be used as a guide only, and are either the lowest selection rank to which an offer was made in 2024 or an estimate (E). MG: Monash Guarantee.
2 Artificial Intelligence minor not available in Artificial intelligence stream and Smart Manufacturing minor not available in Automation stream.
3 Available in Malaysia and Clayton campus.
4 Minor available at Malaysia campus only.

Discover more at
monash.edu/engineering/specialisations/robotics-mechatronics

Scan me or visit
monash.edu/engineering/change-makers/alex-and-nathan

Robotics and mechatronics is where mechanical and electrical engineering meet, employing computer science and control systems to make devices smarter and more efficient.

As a robotics and mechatronics engineer you could create rovers for planetary exploration or robots for precision manufacturing or to assist the elderly. Alternatively, you might convert a household product into a truly clever device, and create the programs that control it.

You'll learn how to handle vast amounts of data and extract critical information from data in real time so that a fully automated manufacturing facility can operate safely and efficiently, or a car can drive completely autonomously.

Robotics and mechatronics engineers are in high demand. Their expertise is required in many industries including advanced manufacturing, aerospace, medicine, defence, transportation and data analysis.

There are two streams available to choose from:

- **Artificial intelligence** covers neural networks and deep learning, advanced engineering design, computer vision systems, and intelligent robotics.
- **Automation** includes design of mechatronic systems, dynamics and control, robotics and sensing, and advanced manufacturing.

CAREER OPTIONS

You'll be equipped with the knowledge and skills to design, develop, manufacture and operate the intelligent products and complex systems of today and tomorrow. There are also opportunities in consulting, management and finance. You may also pursue a career in research and development, in academia, research institutions or advanced industry sectors. Opportunities exist in:

- robotics and automation
- aerospace systems and flight control
- artificial intelligence
- bioengineering
- defence
- intelligent systems for motor vehicles
- manufacturing systems and processes
- telecommunications
- medical systems
- software engineering
- mining systems and processes
- nanotechnology.

"Our Final Year Project (FYP) was aimed at creating a low-cost but research capable quadruped robot, called The Dingo. The emphasis was on creating a product with expandability, modularity, and aesthetic appeal through an iterative design process. These features are all valuable for research, allowing different sensors and actuators to be added to The Dingo, depending on the kind of research being conducted."

ALEXANDER CALVERT
Bachelor of Robotics and Mechatronics Engineering (Honours) and Bachelor of Commerce
Graduate Engineer, Schneider Electric

NATHAN FERGUSON
Bachelor of Robotics and Mechatronics Engineering (Honours)

SOFTWARE ENGINEERING

Clayton, Malaysia

4 years full-time
8 years part-time

February and July

ATAR: 85[1]
IB: 32[1]
MG: 75

Specialist

DEGREE AWARDED
Bachelor of Software Engineering (Honours)

DOUBLE DEGREES
- Arts
- Commerce
- Computer Science
- Information Technology
- Science

MINORS
- Medical technology
- Transport

CRICOS: 001722B

1 The scores provided are to be used as a guide only, and are either the lowest selection rank to which an offer was made in 2024 or an estimate (E). MG: Monash Guarantee.

Discover more at
monash.edu/engineering/specialisations/software

Software engineering is a field that's constantly evolving as new technologies emerge. As an engineer in this area, your skills will be critical across many functions – from dispensing life-saving medicine to controlling flight paths.

As a software engineer you'll use your expertise in computer science, engineering principles and programming languages to build intelligent software products that may involve artificial intelligence and machine learning components, develop games and run network control systems. You could design systems and applications tailored to specific users and their needs, and build the underlying systems that run the technology and control networks. Solve business challenges by delivering technical solutions and assess organisation's current systems and needs to create strategies for improvement.

You'll learn about core areas such as software processes and life-cycles, requirements analysis, software design and architecture, software development, quality assurance and testing. Work with modern, industry-strength programming languages, technologies and systems. Through collaborative learning, you'll hone your teamwork, problem solving, resource management, project coordination and communication skills.

You can choose from a wide range of IT electives from cyber security to games development to business information systems. Gain valuable work experience through various industry programs including the IT Faculty's Industry-Based Learning (IBL) program. The Bachelor of Software Engineering (Honours) is accredited by the Australian Computer Society and Engineers Australia.

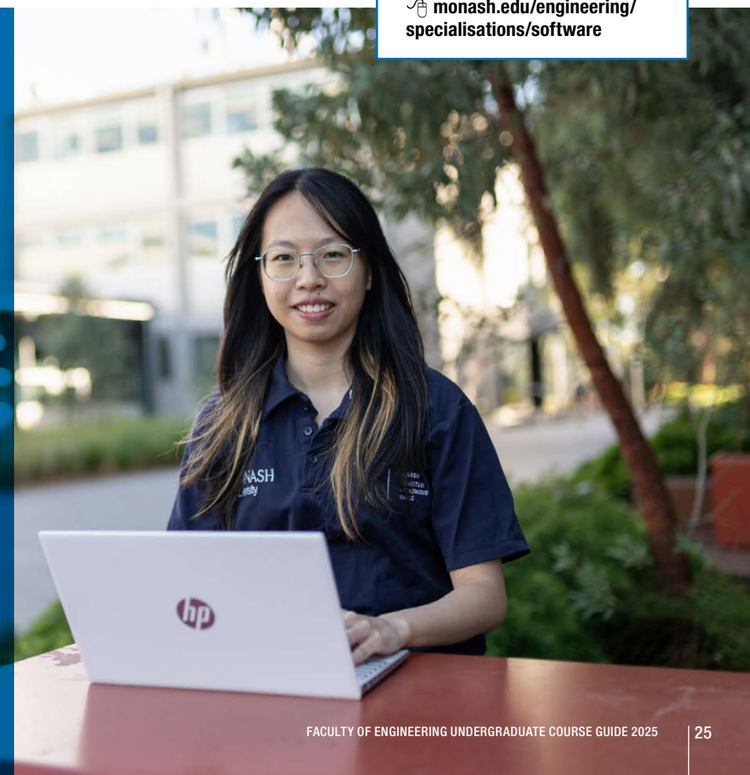
CAREER OPTIONS

In the age of digital transformation, new roles are constantly emerging and software engineering graduates are highly sought-after around the world. You could pursue a career as:

- software engineer or developer building products, games and network systems
- software architect or data engineer designing specific systems and databases
- block chain developer or engineer building software for digital identity, workforce management and data storage
- front end engineer writing the code for a website or app
- machine learning engineer writing personalised and predictive software
- network administrator or security engineer making systems secure and protect from threats.

"Being part of the VRAV team in Monash Connected Autonomous Vehicle (MCAV) has been incredibly beneficial for me. It has allowed me to learn about game development and gain hands-on experience with VR/AV technologies, which are not typically covered in my degree program. This experience has not only expanded my skill set but has also opened up new career opportunities in the field of virtual and augmented reality."

SUEY HO
Bachelor of Software Engineering (Honours)
VRAV Lead, Monash Connected Autonomous Vehicle
General Representative, Women in Engineering at Monash



Clayton

4.5 or 5 years full-time[2]
10 years part-time[2]

February and July

ATAR: 90.05[1]
IB: 34.5
MG: N/A

Specialist and
Expert master's

UNDERGRADUATE SPECIALISATIONS[2]

- Aerospace
- Chemical
- Civil
- Electrical and computer systems
- Environmental
- Materials
- Mechanical
- Robotics and mechatronics

CRICOS: 001722B

1 The scores provided are to be used as a guide only, and are either the lowest selection rank to which an offer was made in 2024 or an estimate (E). MG: Monash Guarantee.

2 Refer to the website for available specialisations at the master's level and their respective durations in the Master's Accelerated Pathway.

Discover more at
monash.edu/engineering/masters-accelerated-pathway

MASTER'S ACCELERATED PATHWAY

Be on the pathway to career success with a bachelor's degree and expert master's.

The Master's Accelerated Pathway is designed for high-achieving students to be on track to earn both a Bachelor of Engineering (Honours) and a Master of Engineering degree – in just one extra semester of study, depending on the master's specialisation chosen.[2] You'll receive an outstanding practical and theoretical preparation for a career in engineering, with a rich selection of specialist electives and strong links to industry.

Starting with the fully accredited engineering undergraduate degree, you'll have the choice and flexibility to explore your study options and follow your passions. You'll gain hands-on, practical experience through work-integrated learning opportunities, and connect with industry and alumni to build your professional networks.

The master's program builds on your undergraduate study, extending your technical knowledge and engineering capabilities. Become a strategic thinker, deliver sustainable solutions, advance your leadership abilities, and engage with diverse stakeholders to enhance your future – and society's.

You can select a master's specialisation to either continue to build upon your undergraduate specialisation knowledge, or to expand your expertise and undertake a masters in a different field. The engineering management, renewable energy or smart manufacturing masters specialisations can be completed with only one extra semester of study, achieving both an undergraduate and master degrees – in just 4.5 years.

The Master's Accelerated Pathway offers generous scholarships to support eligible students while they study. This undergraduate/graduate double degree gets you on a fast-track to a graduate qualification, saving you on fees and study time and improving your employment outcomes.

CAREER OPTIONS

- Specialist engineer or consultant within your chosen professional field
- Engineering management role in private or public sector
- Entrepreneur or founder of your own start up company.

"I chose the Masters Accelerated Pathway to help my career progression. I've undertaken a master's specialisation that follows on from my robotics bachelor degree, to learn more about automation technology and additive manufacturing techniques.

I'd like to be working in a research and development position in a new and upcoming industry."

PRANEEL CHUGH
Bachelor of Robotics and Mechatronics (Automation) Engineering and Master of Smart Manufacturing Engineering

ENGINEERING MINORS

Artificial intelligence in engineering[1] is used to develop driverless vehicles, meaningful human machine interaction and image recognition. Create new designs involving robotics, deep learning, computer vision and autonomous vehicles.

Civil engineering is the design and improvement of systems and processes that allow humans and nature to coexist with minimal impact. It includes transportation systems, water supply and pollution control, roads, bridges and other structures.

Computational engineering is a rapidly growing multidisciplinary field that simulates the physical world to solve engineering design problems, develop new technologies and shape the world we live in. Biomedical devices, submarines and wind turbines are just a few examples where computer models are used to predict how new designs will behave in reality.

Design and manufacturing[2] involves applying creative problem-solving techniques to various manufacturing processes to produce any specific components required to build a product or a functional system at any scale. Create new products, technologies and automation techniques catering to the demands of the fast-paced world.

Engineering entrepreneurship - developed with the Monash Business School, is for engineers interested in becoming entrepreneurs and innovators. Learn the fundamentals such as idea creation, market validation, company structures, technology development, investment and go-to-market business models.

Environmental engineering involves the implementation and management of solutions that are in harmony with the principles of sustainable development. By improving the knowledge on air, water and land quality, environmental engineers help restore the environment and protect our natural world.

Medical technology - study medical devices such as cardiac valves, pacemakers, hip replacements, stents and contact lenses, as well as topics in controlled drug delivery, biosensor devices, tissue engineering and regenerative medicine. Examine the interactions between engineered devices and biological systems, and learn to negotiate constraints in developing new technologies and translating into clinical practice.

Micro and nano technologies form the basis of any modern miniaturised system including electronic devices, sensors and actuators in smartphones and vehicles and diagnostic systems, biomedical devices and devices for environmental monitoring.

Mining engineering involves environmentally-safe extraction and processing of natural minerals from the earth. The industry uses the latest automation and digital technologies to supply critical materials like copper, iron, lithium and gold, that are essential for modern society and the world's economy.

Renewable energy engineering focuses on the fundamental conversion of solar radiation, wind, hydro, and bioenergy resources into electricity by designing, building and operating energy plants such as wind farms, solar farms and hydro power facilities.

Sensory systems in Industry 4.0[2] - acquire the knowledge and techniques to understand the analogue world, and its significance in processing and interaction within modern industries. Learn about advanced sensory systems, programming techniques and autonomous systems, which integrate emerging technologies from the Internet of Things, cloud computing, machine learning, AI and more.

Smart manufacturing is the core of Industry 4.0 which includes cyber-physical systems, Internet of Things, and augmented reality. Learn the modern systems of telecommunication, mechatronics, cyber-physics, and manufacturing for the new era of industry.

Sustainable engineering is a growing multidisciplinary field where you'll be introduced to life-cycle analysis, sustainability in the built environments including passive and active technologies, and the political, social and environmental background to materials usage.

Transport is an essential component of the sustainability, economic and social outcomes of cities. How can we shape the transport system to reduce emissions, have a positive impact on cities, and embrace cutting-edge technologies? This minor will provide students with the skills to tackle the complex challenges of modern, sustainable transport systems.

Discover more at
monash.edu/engineering/minors

1 Available in Clayton and Malaysia.
2 Minor available in Malaysia only.

DOMESTIC ADMISSIONS AND ENTRY REQUIREMENTS

ATARS AND PREREQUISITES FOR SINGLE AND DOUBLE DEGREES

ACADEMIC PREREQUISITE SUBJECTS

The table below outlines the requirements, and the course listing tells you which categories apply to each course. Make sure you check if this applies to your course of choice in this guide.

	English		Mathematics			Science
	■ Level 1	■ Level 2	■ Level 1	■ Level 2	■ Level 3	
VCE	Units 3 and 4: a study score of at least 27 in English (EAL) or 25 in English other than EAL.	Units 3 and 4: a study score of at least 35 in English (EAL) or 30 in English other than EAL.	Units 1 and 2: satisfactory completion in two units (any combination) of General Mathematics or Mathematical Methods or Specialist Mathematics.	Units 3 and 4: a study score of at least 22 in Mathematical Methods (any) or Specialist Mathematics, or a score of at least 25 in Further Mathematics.	Units 3 and 4: a study score of at least 25 in one of Mathematical Methods or Specialist mathematics.	Units 3 and 4: a study score of at least 25 in Chemistry or Physics.
IB	At least 4 in one of the following SL subjects: • English A: Literature, or • English A: Language and Literature, or • Literature and Performance, *OR* At least 3 in one of the following HL subjects: • English A: Literature, or • English A: Language and Literature, *OR* At least 5 in one of the following SL subjects: • English AB, or • English B, *OR* At least 4 in the following HL subject: • English B.	At least 5 in one of the following SL subjects: • English A: Literature, or • English A: Language and Literature, or • Literature and Performance, *OR* At least 4 in one of the following HL subjects: • English A: Literature, or • English A: Language and Literature, *OR* At least 6 in one of the following SL subjects: • English AB, or • English B, *OR* At least 5 in the following HL subject: • English B.	At least 3 in any mathematics subject at SL or HL level.	At least 4 in one of the following SL subjects: • Math Studies, or • Mathematics: Applications and Interpretations, or • Mathematics, or • Mathematics: Analysis and Approaches, *OR* At least 3 in one of the following HL subjects: • Mathematics: Applications and Interpretations, or • Mathematics, or • Further Mathematics, or • Mathematics: Analysis and Approaches	At least 4 in one of the following SL subjects: • Mathematics, or • Mathematics: Analysis and Approaches, *OR* At least 3 in one of the following HL subjects: • Mathematics: Applications and Interpretations, or • Mathematics, or • Further Mathematics, or • Mathematics: Analysis and Approaches.	At least 4 at Chemistry SL or Physics SL or 3 at HL in Chemistry or Physics.

SINGLE DEGREE COURSES AT A GLANCE

Course	Duration (years)[1]	Prerequisites (Refer to table above) English Level 1	English Level 2	Mathematics Level 3	Science Specified	Degree awarded	Location	Indicative[2] ATAR	Indicative[2] IB score	Monash Guarantee
Engineering M	4	■		■	Chemistry or Physics	Bachelor of Aerospace Engineering (Honours)	CL	85	32	75
						Bachelor of Biomedical Engineering (Honours)	CL	85	32	80
						Bachelor of Chemical Engineering (Honours)	CL	85	32	75
						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 Robotics and Mechatronics Engineering (Honours)				
						Bachelor of Software Engineering (Honours)				
	5	■		■	Chemistry or Physics	Bachelor's Honours / Master's Pathway[3]	CL	90.05	34.5	N/A

DOUBLE DEGREE COURSES AT A GLANCE

Course	Duration (years)[1]	Prerequisites (refer to table on page 28) English Level 1	English Level 2	Mathematics Level 3	Science Specified	Degree awarded	Location	Indicative[2] ATAR	Indicative[2] IB score	Monash Guarantee
Engineering and										
Architectural Design	5	■		■	Chemistry or Physics	Bachelor of Civil Engineering (Honours) and Bachelor of Architectural Design	CL CA	85.65	31.25	76
Arts[4]	5	■		■	Chemistry or Physics	Bachelor of Aerospace Engineering (Honours) and Bachelor of Arts	CL	85.20	32	75
						Bachelor of Chemical Engineering (Honours) and Bachelor of Arts				
						Bachelor of Civil Engineering (Honours) and Bachelor of Arts				
						Bachelor of Electrical and Computer Systems Engineering (Honours) and Bachelor of Arts				
						Bachelor of Environmental Engineering (Honours) and Bachelor of Arts				
						Bachelor of Materials Engineering (Honours) and Bachelor of Arts				
						Bachelor of Mechanical Engineering (Honours) and Bachelor of Arts				
						Bachelor of Robotics and Mechatronics Engineering (Honours) and Bachelor of Arts				
						Bachelor of Software Engineering (Honours) and Bachelor of Arts				
Biomedical Science	5	■		■	Chemistry	Bachelor of Chemical Engineering (Honours) and Bachelor of Biomedical Science	CL	90.90	35.25	85
						Bachelor of Civil Engineering (Honours) and Bachelor of Biomedical Science				
						Bachelor of Electrical and Computer Systems Engineering (Honours) and Bachelor of Biomedical Science				
						Bachelor of Materials Engineering (Honours) and Bachelor of Biomedical Science				
						Bachelor of Mechanical Engineering (Honours) and Bachelor of Biomedical Science				
Commerce	5	■		■	Chemistry or Physics	Bachelor of Aerospace Engineering (Honours) and Bachelor of Commerce	CL	86.75	32.75	77
						Bachelor of Chemical Engineering (Honours) and Bachelor of Commerce				
						Bachelor of Civil Engineering (Honours) and Bachelor of Commerce				
						Bachelor of Electrical and Computer Systems Engineering (Honours) and Bachelor of Commerce				
						Bachelor of Environmental Engineering (Honours) and Bachelor of Commerce				
						Bachelor of Materials Engineering (Honours) and Bachelor of Commerce				
						Bachelor of Mechanical Engineering (Honours) and Bachelor of Commerce				
						Bachelor of Robotics and Mechatronics Engineering (Honours) and Bachelor of Commerce				
						Bachelor of Software Engineering (Honours) and Bachelor of Commerce				
Computer Science	5	■		■	Chemistry or Physics	Bachelor of Electrical and Computer Systems Engineering (Honours) and Bachelor of Computer Science	CL	85.10	32	75
						Bachelor of Robotics and Mechatronics Engineering (Honours) and Bachelor of Computer Science				
						Bachelor of Software Engineering (Honours) and Bachelor of Computer Science				
Design	5	■		■	Chemistry or Physics	Bachelor of Mechanical Engineering (Honours) and Bachelor of Industrial Design	CL CA	85.15	32	76
Information Technology	5	■		■	Chemistry or Physics	Bachelor of Electrical and Computer Systems Engineering (Honours) and Bachelor of Information Technology	CL	85.75	32.25	75
						Bachelor of Robotics and Mechatronics Engineering (Honours) and Bachelor of Information Technology				
						Bachelor of Software Engineering (Honours) and Bachelor of Information Technology				
Laws (Honours)	6.25[5]		■	■	Chemistry or Physics	Bachelor of Laws (Honours) and Bachelor of Aerospace Engineering (Honours)	CL	95.20	38.50	85
						Bachelor of Laws (Honours) and Bachelor of Chemical Engineering (Honours)				
						Bachelor of Laws (Honours) and Bachelor of Civil Engineering (Honours)				
						Bachelor of Laws (Honours) and Bachelor of Electrical and Computer Systems Engineering (Honours)				
						Bachelor of Laws (Honours) and Bachelor of Materials Engineering (Honours)				
						Bachelor of Laws (Honours) and Bachelor of Mechanical Engineering (Honours)				
Pharmaceutical Science	5	■		■	Chemistry	Bachelor of Chemical Engineering (Honours) and Bachelor of Pharmaceutical Science	CL PA	85.95	32.50	80
Science	5	■		■	Chemistry or Physics	Bachelor of Aerospace Engineering (Honours) and Bachelor of Science	CL	85.10	32	75
						Bachelor of Chemical Engineering (Honours) and Bachelor of Science				
						Bachelor of Civil Engineering (Honours) and Bachelor of Science				
						Bachelor of Electrical and Computer Systems Engineering (Honours) and Bachelor of Science				
						Bachelor of Environmental Engineering (Honours) and Bachelor of Science				
						Bachelor of Materials Engineering (Honours) and Bachelor of Science				
						Bachelor of Mechanical Engineering (Honours) and Bachelor of Science				
						Bachelor of Robotics and Mechatronics Engineering (Honours) and Bachelor of Science				
						Bachelor of Software Engineering (Honours) and Bachelor of Science				

M Master's Accelerated Pathway | CL –Clayton | CA – Caulfield | PA – Parkville

1 Duration is based on a standard full-time load of 48 credit points per annum.
2 Indicative – The provided score is the 2024 lowest ATAR to which an offer was made or an estimate (E), and is to be used as a guide only.
3 Master's Accelerated Pathway is only available to school leavers and is not offered with biomedical, or software engineering specialisations.
4 Depending on your Arts major, you may take the Arts component at Clayton or Caulfield.
5 This course is an accelerated course where you'll be required to undertake more than the standard annual load of 48 credit points in year two and/or year three in order to complete the course in six years.

INTERNATIONAL ENTRY REQUIREMENTS

COURSE	DEGREE AWARDED	Duration (years)[1]	Monash code	Location	Intake[2] (semester)	English language level (see below)	2024 fee p.a.[3] (A$)	Prerequisites (see page 28)			
								English		Mathematics	Science
								Level 1	Level 2	Level 3	Specified
Engineering	Bachelor of Aerospace Engineering (Honours)	4	E3001	CL	Feb July	A	$53,200	■		■	Chemistry or Physics
	Bachelor of Biomedical 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 Robotics and Mechatronics Engineering (Honours)										
	Bachelor of Software Engineering (Honours)										
	Bachelor of Engineering (Honours) / Master's Accelerated Pathway[4]	5						■		■	Chemistry or Physics

COURSE	AUSTRALIA-INTERSTATE			BRITAIN (GLOBAL)	CANADA	CHINA	FRANCE	HONG KONG	INDIA		INDONESIA	MALAYSIA		REPUBLIC OF KOREA		USA		VIETNAM	MONASH COLLEGE		
	2025 ATAR for international students	UNSW Foundation Studies	University Of Melbourne, Trinity College Foundation Studies	GCE A Level	Ontario Secondary School Diploma – Grade 12	Gao Kao	International Baccalaureate (IB) Diploma	Hong Kong Diploma of Secondary Education	All India Senior School of Certificate	Indian School Certificate Examination	SMA3	STPM	UEC	College Scholastic Ability Test (CSAT)	High School Diploma	Advanced Placement	SAT (Total score out of 1600)	High School Diploma	Foundation Year (commencing MUFY in 2025)	Monash College	
																				Diploma Part 1[5]	Diploma Part 2[5]
Engineering	87.50	8.25	83%	11	86.30%	75%	33	20	81%	76%	8.75	9.4	3	345	83%	7	1270	8.49	76.25%	80%	60%
	95	N/A	N/A	14	91%	80%	38	23	85%	80%	9	10.3	1.8	365	90%	9	1360	8.7	88.75%	N/A	

ACADEMIC ENTRY REQUIREMENTS

All Monash undergraduate courses require you to have successfully completed a minimum of an Australian Year 12 qualification (or equivalent) and achieve the required academic entry score. The table above outlines the academic entry scores for the listed qualifications that apply to each undergraduate course applicable to international students only. Entry scores for the listed qualification in this guide are calculated as follows:

COUNTRY	QUALIFICATION	AWARDING BODY	HOW TO CALCULATE YOUR ENTRY SCORE
AUSTRALIA	**Australian Year 12 qualifications listed below (refer to the '2024 ATAR for international students' column)**		
	Australian Year 12 qualifications		Final ATAR as awarded by the relevant Australian state Year 12 authority.
	Monash University Foundation Year (MUFY)	Monash College Pty Ltd	The undergraduate entry requirements published in this brochure are for students who commence the MUFY program in 2025. Refer to **monashcollege.edu.au/courses/fy/dd**
	Monash College Diploma Part 1 and Part 2		The Monash College Diploma Part 1 & Part 2 entry requirements published in this guide are for students commencing their undergraduate destination degree in 2026. Refer to **monashcollege.edu.au/courses/dips/dd**
	Trinity College Foundation Studies	Trinity College, The University of Melbourne	Overall average of the best four subjects (excluding English for Academic Purposes).
	UNSW Foundation Studies	University of New South Wales	Final grade point average.
CANADA	Ontario Secondary School Diploma – Grade 12	Ontario Ministry of Education	Overall average of the best six academic Grade 12 subjects[6] (excluding workplace preparation courses and open courses). Students must achieve a minimum total of 30 credits and complete Community Involvement. 6 The grade 12 subjects must be taken from the most recent completed Ontario Student Transcript issued by the Ontario Ministry of Education.
CHINA	Gaokao	Department of Education in China	The total score achieved in the Gaokao examination will be converted into a 100% scale by dividing the total score achieved with the 2024 Gaokao maximum score[7] published by the Department of Education in China for each Chinese province. 7 For example: If you achieved a total score of 555 in your Gaokao examination and the 2023 Gaokao maximum score for Guangdong is 750, then the percentage score on a 100% scale converted by Monash University will be 74%.
GLOBAL	GCE A Levels	• Cambridge International • Pearson Edexcel • Council for the Curriculum, Examinations and Assessment • Oxford, Cambridge and RSA Examinations • Welsh Joint Education Committee • Assessment and Qualifications Alliance	Total score by achieving either: • A maximum of the best three A Level subjects completed within two years[8]. In the event where only one A Level subject has been completed (and no other A Level subjects have been completed), two AS Level subjects can be counted in place of one A Level subject however the AS Level subject must not be in the same subject area as the A Level subjects included in the calculation. OR • A minimum of the best two A Level subjects completed within two years[8] plus the best two AS Level subjects. The AS Level subjects however must not be in the same subject area as the A Level subjects included in the calculation. Additional guidelines / Score grades as follows: • A Level subjects: A*(a*) = 5, A(a) = 5, B(b) = 4, C(c) = 3, D(d) = 2, E(e) = 1, U = 0. • AS Level subjects: a(a) =2.5, b(b) =2, c(c) =1.5, d(d) =1, e(e) =0.5, U = 0. • N (Narrow failure) and U (Unclassified) results are not to be included in the calculation. • A maximum of one bonus point is offered when achieving A* in an A Level Subject. 8 Subject examinations taken within two years may include more than one sitting. For example, subject examinations in June 2022 until June 2024 are acceptable.
	International Baccalaureate (IB) Diploma Programme	International Baccalaureate Organization	Total points as awarded on the IB Diploma Programme results.
GLOBAL (continued)	**American Admission Tests[9]**		
	• Advanced Placement (AP)	The College Board	Total of the best two AP examinations as awarded on the Student Score Report[10] issued by the College Board. Minimum accepted score in each AP examination is 3. 9 If you have completed multiple American Admission Tests (i.e. SAT, AP or ACT), the test with the highest achieved scores will be used to determine if the academic entry requirement has been satisfied 10 All AP examinations submitted to Monash University will be considered when calculating the entry score.
	• Scholastic Aptitude Test (SAT) – total score out of 1600		Total score by adding the best section scores achieved in 'Evidence Based Reading and Writing' and 'Math' as awarded on the SAT Score Report[11] issued by the College Board. 9 If you have completed multiple American Admission Tests (i.e. SAT, AP or ACT), the test with the highest achieved scores will be used to determine if the academic entry requirement has been satisfied. 11 All SAT examinations submitted to Monash University will be considered when calculating the entry score, provided the SAT is marked out of 1600.
HONG KONG (continued)	Hong Kong Diploma of Secondary Education (HKDSE)	Hong Kong Examinations and Assessment Authority	• Total score of the best five subjects[12] (Category A and C only). • Scores graded as follows: Level 1=1, Level 2=2, Level 3=3, Level 4=4, Level 5=5 or A=5, B=4, C=3, D=2, E=1. • A maximum of 1 bonus point is offered when achieving Level 5** or Level 5* in a HKDSE Category A subject. 12 The highest grade will be used in the calculation in the event where individual subject examinations have been sat in multiple sittings.
INDIA	All India Senior School Certificate	Central Board of Secondary Education	Overall average of the best four academic subjects (excluding Physical Education) and results indicated as 'pass'.
	Indian School Certificate Examination	Council for the Indian School Certificate Examinations	Overall average of the best four academic subjects (excluding Physical Education) and results indicated as 'pass certificate awarded'.
INDONESIA	SMA3	Ministry of Education, Culture, Research and Technology	Overall average of all Semester 1 and Semester 2 Grade 12 results. **Note:** Monash University undergraduate entry scores vary for SMA3 qualifications that are marked on differing grading scales.
MALAYSIA	STPM	Malaysian Examinations Council (Majlis Peperiksaan Malaysia)	Total of the best three subjects, excluding Pengajian Am (General Studies).
	UEC	United Chinese School Committees Association of Malaysia	• Overall average of the best five subjects. • Only grades A1, A2, B3, B4, B5 and B6 to be included in calculation. C7, C8 and F9 cannot be included in the calculation. • Five subjects must be included in the calculation with a score of B6 grade or higher in each subject. • Score grades as follows: A1=1, A2=2, B3=3, B4=4, B5=5, B6=6. • It should be noted that a score of A1 is the highest score.
REPUBLIC OF KOREA	College Scholastic Ability Test	Korea Institute for Curriculum and Evaluation	Total score of the best four subjects (including Language Arts and Mathematics)[13,14] 13 Korean History, English and vocational education stream subjects can not be included in the calculation. 14 If you have completed both the College Scholastic Ability Test and South Korean High School Diploma, the qualification with the highest achieved score will be used to determine if the academic entry requirement has been satisfied.
	High School Diploma, Republic of Korea	Ministry of Education, Science & Technology	Overall average of academic subjects including fails (excluding non-academic subjects such as Moral Education, Home Science, Physical and Health Education, Civil Ethics, Ethics and Thought, Home Living, and Chinese Characters)[15]. 15 If you have completed both the College Scholastic Ability Test and South Korean High School Diploma, the qualification with the highest achieved score will be used to determine if the academic entry requirement has been satisfied.
VIETNAM	High School Diploma (Bằng Tốt Nghiệp Trung Học Phổ Thông)	Ministry of Education and Training, Socialist Republic of Vietnam	Overall average of all Grade 12 subjects.

If your qualification cannot be located in the above table refer to **monash.edu/prior-study**

PREREQUISITE SUBJECTS AND ADDITIONAL REQUIREMENTS

In addition to meeting English entry requirements, some Monash University undergraduate courses may require you to satisfy other prerequisite subjects and additional selection and/or extra requirements.

Please note that all entry requirements for Monash University and Monash College are subject to change.

MINIMUM AGE REQUIREMENTS

You must be at least 17 years of age to enrol in a Monash University undergraduate course. Some exemptions may apply. Refer to **monash.edu/admissions/age-requirements**

ENGLISH ENTRY REQUIREMENTS

When you apply for a Monash University undergraduate course you must satisfy English entry requirements.

Level	Academic IELTS					Internet Based TOEFL					Pearson Test of English (Academic)				
	Overall band score	Listening	Reading	Speaking	Writing	Total score	Listening	Reading	Speaking	Writing	Overall score	Listening	Reading	Speaking	Writing
A	6.5	6.0	6.0	6.0	6.0	79	12	13	18	21	58	50	50	50	50

1 Duration is based on a standard full-time load of 48 credit points per annum.
2 Please refer to **monash.edu/study** for further details on semester intake availability for individual specialisations.
3 Fees are quoted in Australian dollars; each is the annual average fee per 48 credit points of study in this course for 2024. Fees are adjusted annually. **monash.edu/students/admin/fees/course/international-full-fee**
4 Master's Accelerated Pathway is only available to school leavers and is not offered with biomedical, or software engineering specialisations.
5 The Monash College Diploma Part 1 and 2 entry requirements are for students commencing their undergraduate degree in 2024.

COURSE STRUCTURE

Here's an indicative course map showing what your studies could look like if you selected Mechanical Engineering.

View all engineering specialisation course maps

monash.edu/engineering/course-maps

YEAR 1[1]

Semester 1	Elective	Engineering mathematics	Engineering numerical analysis	Level 1 Engineering Breadth study elective
Semester 2	Engineering design	Engineering smart systems	Engineering methods	Elective

YEAR 2

Semester 1	Mechanics of materials	Dynamics 1	Design methods	Level 1, 2 or 3 elective or engineering technical elective
Semester 2	Advanced engineering mathematics	Mechanics of fluids	Thermodynamics	Level 1, 2 or 3 elective or engineering technical elective

YEAR 3

Semester 1	Solid mechanics	Fluid mechanics 2	Engineering computational mechanics	Level 3 or 4 technical or engineering minor elective unit	
Semester 2	Dynamics 2	Machine design	Systems and control	Level 3 or 4 technical or engineering minor elective unit	Industrial Training[3]

YEAR 4

Semester 1	Final year project A	Professional practice	Thermodynamics and heat transfer	Level 3, 4 or 5 technical or engineering minor elective unit	Continuous Professional Development[2]
Semester 2	Final year project B	Design project	Computer-aided design	Level 3, 4 or 5 technical or engineering minor elective unit	

Engineering fundamentals · Level 1 Engineering Breadth study elective · Discipline core units · Engineering Design
Engineers Australia professional accreditation requirement · Free elective · Discipline technical elective or minor unit

1 If no foundation units are required.
2 Clayton campus students.
3 Malaysia campus students.

HOW TO APPLY

DOMESTIC STUDENTS

APPLY THROUGH VTAC

If you're an Australian or New Zealand citizen or an Australian permanent resident, apply through the Victorian Tertiary Admissions Centre (VTAC).
www.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 28.

FEES

To estimate your course fees, visit **monash.edu/fees**

COMMONWEALTH SUPPORTED PLACES (CSP)

You may be eligible for CSP if you are an Australian citizen, Australian permanent residents and permanent humanitarian visa holders or a New Zealand citizen living in Australia.. A CSP is a subsidised enrolment where the government pays for part of your course and you only have to pay the Student Contribution Amount (SCA). Eligible CSP students may use a HECS-HELP loan to pay for all or part of the SCA. Visit

monash.edu/enrolments/government-loans/commonwealth-supported-place

INTERNATIONAL STUDENTS

All international students must apply for a Monash University course online or through an accredited Monash agent.
Visit **monash.edu/study/how-to-apply** for details.

Note: International students who are undertaking an Australian Year 12 qualification (for example, VCE or equivalent) in Australia or overseas, International Baccalaureate (I B) Diploma in Australia or New Zealand, or National Certificate of Educational Achievement (NCEA) Level 3 in New Zealand must apply through VTAC. Visit **www.vtac.edu.au**

FEES

A$53,200, annual average fee per 48 credit points of study in this course for 2024. Further information on fees, visit **monash.edu/fees**

MONASH COLLEGE

The preferred pathway for students who aspire to study engineering at Monash University but who narrowly miss the academic requirements for direct entry.

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

SCHOLARSHIPS

Monash celebrates academic excellence and supports students who are disadvantaged. We offer a range of scholarships and awards to help ensure money and circumstances aren't barriers to you accessing a world leading engineering education.

For details and a full list of scholarships, bursaries and awards available, visit **monash.edu/scholarships**

LIVING IN MELBOURNE

Melbourne is a vibrant, multicultural city that offers an abundance of cultural festivities, international sporting events, cafés and restaurants with cuisines from around the world, beautiful parks and beaches, and an eclectic mix of music and arts. As one of the world's most liveable cities[1], you can expect excellence in public transport and healthcare, as well as opportunities for casual work while studying.

COST OF LIVING

Before you begin your studies at Monash, it's a good idea to plan and prepare a budget. Your tuition and study fees do not include personal costs such as accommodation, food and miscellaneous items. For information on budgeting for your lifestyle, visit
monash.edu/cost-of-living

STUDENT ACCOMMODATION

Living on-campus is a great way to experience university life and make connections while you study. On-campus accommodation is available at the Clayton campus and our Residential Services support team is available to help you through the application and transition process. If you prefer a little more independence, there is plenty of off-campus accommodation available.
For more information on accommodation, visit
monash.edu/accommodation

SUPPORT SERVICES

University study takes commitment and drive, especially if you're moving to a new city or country. We can help you settle into university life by providing an extensive range of support programs and services including:

- Academic support
- Safety and security
- Careers counselling
- Disability services
- International student support
- Spirituality
- Monash Connect
- Skills Essentials seminars
- Health and counselling

monash.edu/support

ORIENTATION

Our orientation service incorporates a series of programs to help students adjust to a new country and the Monash University environment.
monash.edu/orientation

1 Economist Intelligence Unit.

STUDENT LIFE AT MONASH

CLAYTON CAMPUS

Twenty kilometres from the centre of Melbourne, Monash's Clayton campus combines a vibrant research, technology, and manufacturing precinct with first-rate sporting facilities, shops, a student centre, libraries, a post office, banks, medical services, and religious centres.
monash.edu/study/student-life

Southbank

Australian native wildlife (Penguins)

Chadstone Shopping Centre


The Shrine of Remembrance

JOIN MONASH ENGINEERING GIRLS (MEG)

Join MEG and gain access to exclusive events and discover the possibilities a career in engineering can offer. Our MEG program is open to secondary school girls in Years 9–12.

For more information or to sign up, visit
monash.edu/engineering/meg

youtu.be/_W5dbZowJyI

MONASH University

DISCOVER MORE

Join us at one of our events to experience Monash Engineering first-hand.

- Monash Information Evenings
- Discover Monash Engineering
- Engineering Campus tours
- Monash Engineering Girls (MEG) program
- Open Day

monash.edu/engineering/events

MONASH ENGINEERING

monash.edu/engineering

FACEBOOK
MonashEngineers

INSTAGRAM
@monashengineering

LINKEDIN
linkedin.com/school/monash-engineering

TIKTOK
@monashengineering

YOUTUBE
youtube.com/monashengineering

MONASH UNIVERSITY

monash.edu

FIND A COURSE
monash.edu/study

FUTURE STUDENT ENQUIRIES
Australian citizens, permanent residents and New Zealand citizens
monash.edu/study/contact-us

International students
T Australia freecall: 1800 MONASH (666 274)
T +61 3 9903 4788 (outside Australia)
E study@monash.edu

Monash is proud to have the following industry partners who support our students through scholarships, prizes, the Engineering Career Ready Series, Industry Innovation Program and Co-operative Education Internship Program:

Philanthropic donors: Clive and Helen Weeks, Dr Jerry and Ann Ellis, Jenkins family, Nick Apostolidis, Elsa and Dante Cutittini, Dubsky Family, Hunt Family.

The information in this brochure was correct at the time of publication (April 2024). Monash University reserves the right to alter this information should the need arise. You should always check with the relevant faculty office when considering a course.
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CRICOS provider: Monash University 00008C Monash College 01857J

GROUP OF EIGHT AUSTRALIA