ENGINEERING
UNDERGRADUATE COURSE GUIDE
2024

#1 IN AUSTRALIA FOR ENGINEERING
TIMES HIGHER EDUCATION WORLD UNIVERSITY RANKINGS BY SUBJECT (2023)
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 change the world we live in, become a top CEO or dream of inventing the next big thing, at Monash Engineering you can shoot for the moon.

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

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.
YOUR PATHWAY TO SUCCESS

Choose Monash Engineering and start engineering a successful future.

GET QUALIFIED

Our world class team of engineers will immerse you in engineering from day one. Become a fully accredited professional engineer in this four-year honours degree tailored to your future.

1. Double degrees – earn two degrees with only one extra year of study
2. Common first year – giving you time to choose a specialisation
3. 10 engineering specialisations plus 10 minor study options
4. Scholarships
5. Professional accreditation

FEED YOUR KNOWLEDGE, FUEL YOUR PASSION

Find your voice, your squad, and your passion as you explore what's possible through teams, clubs, global exchange and research programs.

1. Study abroad at one of our 100+ partner universities
2. Join one of the 30+ student teams and clubs
3. Mentor programs including peer mentors for all first year students
4. Summer Research Program to get a taste for research
5. Makerspaces and entrepreneurial programs – a place for innovation

SECURE YOUR FUTURE

Connect to our network of industry partners, alumni and leadership programs to secure your dream career.

1. Co-op program – paid internships with industry partners
2. Career ready series to help kick start your career
3. Connections to our vast alumni network (34K+ across world)
4. Monash Industry Team Initiative (MITI) – University-wide industry sponsored projects
5. Work with industry on campus in the Industry Innovation Program

MAKE THE MOST OF YOUR OPTIONS AT MONASH

Engineering is a diverse profession with many options. That’s why we’ve created an engineering degree that gives you maximum choice and flexibility.

Common first year

The Bachelor of Engineering (Honours) kicks off with a common first year1, where you’ll gain a better understanding of scientific and design fundamentals, and the interaction between engineering and society. You’ll also get a taste of the ten engineering specialisations on offer before deciding which to pursue from the second year.

Double degrees

Many of our students study a double degree, combining engineering with another discipline area for flexibility and diversity. Whether it’s architectural design, arts, biomedical science, commerce, computer science, design, information technology, law, pharmaceutical science or science, Monash allows you to study engineering while pursuing other interests.

Engineering minors

If you study a single degree, complement your specialisation with an engineering minor from a different discipline or emerging field of engineering. Explore your interests and expand your career opportunities.

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

YOUR FUTURE

ENGINEER

Research experience

You can experience Monash Engineering’s renowned research while studying your degree. Participate in innovative, interdisciplinary research through various student teams, such as Monash Motorsport, our undergraduate Summer Research Program, and in your final year project. You’ll learn the latest concepts in engineering from lecturers who are leading researchers in their field.

Diversity and inclusion

Engineering is for everyone. Monash Engineering supports diversity and inclusion and provides a safe and supportive environment for all students to achieve their academic goals. Including offering mentoring and outreach programs for Indigenous students and a range of initiatives to empower girls to choose a career in engineering, there’s events, mentor programs and a dedicated student team, Women Engineers at Monash (WEM).

Professional recognition

Monash Engineering degrees are accredited by various professional engineering bodies. Recognised by the Washington Accord, our graduates can work in any other signatory country including Canada, China, India, Japan, Singapore, UK and USA, without the need to requalify.

1. Engineers Australia
2. The Institution of Chemical Engineers (Bachelor of Chemical Engineering (Honours) only)
3. Engineering Accreditation Council Malaysia (For programs offered in Monash Malaysia)
4. Australian Computer Society (Bachelor of Software Engineering (Honours) only)

Be part of a global community, contribute to a better future.

change-it.monash.edu
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.

What do engineers do?
Consider a career in engineering if you
• are curious about how things work
• have an interest in improving the quality of human life
• enjoy designing and building things
• like analyzing and solving problems
• are interested in maths and science
• enjoy challenges
• are goal-oriented
• like working with lots of different people in multidisciplinary teams.

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.

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

Career support
From day one, Monash sets you on the path to future career success. Access a range of programs, support and work-integrated learning experiences. Professional development and industry placements (internships) and multidisciplinary projects with leading companies means you’ll graduate better prepared and work-ready.

Our Career Connect program gives you access to experienced coaches and industry based professionals. Take part in employability workshops, small group career conversations and, in your final year, one-on-one coaching.

Unlimited career options
Engineers design, build and test everything we use to create a livable 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, and 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 Engineer in the automotive industry.

$118K
AVERAGE AUSTRALIAN ENGINEERING SALARY
Adzuna Job Report, 2023

96.4%
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

ENGINEERING GRADUATES ARE IN FULL-TIME EMPLOYMENT WITHIN FOUR MONTHS
2022 Graduate Outcomes Survey – Longitudinal, Quality Indicators for Learning and Teaching (QILT)
Monash Makerspace
The Monash Makerspace provides a facility for our students, staff, alumni and industry partners to come together to build, design and create, and encourage entrepreneurial activities.

Linked to The Generator, our entrepreneurial platform, students have access to this creative, collaborative makerspace, allowing them to turn ideas into reality.

Woodside Building for Technology and Design
The Woodside Building for Technology and Design provides a world-class learning environment with 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 will foster innovation and collaboration — allowing students to explore, design, construct and investigate new technologies required for a sustainable energy future.

Monash Smart Manufacturing Hub
The Smart Manufacturing Hub is a co-creation ecosystem that brings together industry partners, researchers and students on campus, to deliver the future of manufacturing.

Some of the research facilities include:
- New Horizons Research Centre
- Monash Centre for Additive Manufacturing (MCAM)
- Woodside FutureLab
- The TITAN Microscope
- X-ray Analytical Platform
- Drone Discovery Platform
- National Drop Weight Impact Testing Facility.

WORLD-CLASS FACILITIES

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

At Monash we open your eyes to a world outside the classroom. 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.

Co-operative Education Program

The Co-operative Education 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, employability experience and a new professional network that sets you up for success.

Career Ready Series

The Career Ready Series provides you with opportunities to extend your learning beyond the classroom, and stand out from the crowd as you move into the workforce. The Series provides a range of professional development events and activities that are 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.

Continuous Professional Development

The Continuous Professional Development (CPD) unit is a compulsory requirement for our 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 develop these skills and experiences and build your CPD hours to complete the minimum of 420 hours required. When you graduate, your CPD Completion Certificate makes an impressive addition to your CV, and it also supports Engineers Australia certification.

Summer Research Program

At Monash, we undertake innovative, multidisciplinary research addressing national and international priorities. As an undergraduate engineering student, you’ll have the opportunity to complete 12 weeks of paid research training over the University’s summer break, which counts towards your Continuous Professional Development requirements. You’ll work closely with world-leading researchers and contribute to real research projects.

Industry Innovation Program

The Industry Innovation Program (IIP) is a new scholarship-based industry training program that allows you to gain valuable work experience while staying on campus. You will work on an innovation project based at the Monash Smart Manufacturing Hub in collaboration with an industry partner. This flexible 6 or 12 month program provides a supportive environment to obtain real industry project experience and develop innovation, problem-solving and employability skills to further your career.

Mentoring

Mentoring can offer support and encouragement to help you succeed, explore 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, makes 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 Industry Team Initiative (MITI)

The MITI program provides an invaluable experience that’ll equip you for life’s challenges by offering insights into the business world, practical learning, leadership and teamwork opportunities. Working as part of a multidisciplinary team, you’ll be placed alongside industry experts and given a challenging, well-defined real world project to deliver, pushing you to use all of your problem-solving, innovation and design skills.

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.

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GAIN AND LEARN FROM THE EXPERIENCE OF SOME OF OUR STUDENTS.

SET YOURSELF UP FOR SUCCESS WITH A CO-OP INTERNSHIP

Five Monash Engineering undergraduate students undertook a summer internship with Amazon Prime Air, in Seattle, USA. The interns worked with technical mentors, managers, and fellow interns to innovate and create solutions for Amazon’s drone delivery service. They gained hands-on learning and experience working with cutting-edge technologies and tools unique to the multinational technology company.

Chris Yu, fifth year student studying Mechatronics Engineering (AI) and Computational Science, decided to do a Co-op internship to get a better understanding of what he wanted to do with his career.

“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. The stand out moment of my internship was producing my first demo. Following the research, I developed existing code and ran performance tests to identify and nominate a candidate solution. The proposed solution I produced was vital and will contribute to the final product in the next major release. After my time at Amazon, working alongside some incredible people, it has motivated me to strive for better – there’s a lot I want to achieve in my lifetime.”

SET YOURSELF UP FOR SUCCESS WITH A CO-OP INTERNSHIP

The Monash students have worked and contributed to our perception system and how we code it, our flight safety calculations, and also our business system programs where Prime Air has to integrate into the Amazon ecosystem - not a simple thing. Their fresh view has been fantastic.

The feedback from our managers and leaders is: the students were able, with instruction, to both in and to work through projects and add value to us. And hopefully we added value to their experience along the way.

DAVID CARBON

Vice President, Prime Air at Amazon

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STUDENT TEAMS AND CLUBS

Student-led teams, clubs and societies give you the chance to get more out of your university experience. Gain a head start in your career through work-based learning. 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.

Monash High Powered Rocketry (HPR)
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 Solar Decathlon Team
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.

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 Nova Rover
Ranked #2 in the world, Monash Nova Rover compete in the University Rover Challenge against teams from around the world. The annual robotics competition held at the Mars Desert Research Station in the United States, challenges teams to design and build the next generation of Mars and Lunar rovers. The team is made up of students from Engineering, Science, IT, Law, Business and Medicine.

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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.

Other engineering clubs, teams and societies you can be involved with are:
- Engineers Without Borders
- Gay and Lesbian Engineers at Monash
- Materials Engineering and Science Society
- Mechatronics Engineering Clayton Club
- Monash Aerospace and Mechanical Engineering Club
- Monash Association of Civil Engineering Students
- Monash Boring, Excavation, Shovelling and Tunneling Team
- Monash BrewLab
- Monash Carbon Capture and Conversion (MC3)
- 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 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.
Our Courses

Bachelor of Engineering (Honours) Degree
At Monash you can become a fully qualified and accredited engineer in just four years. Your degree kicks off with a common first year that allows you to explore the ten engineering disciplines before specialising from second year. Complement your specialisation with a minor 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. 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 five years. 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. See page 26.

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 to the next level.

- 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/future-students

1. This 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.
DOUBLE YOUR CAREER OPTIONS

Earn two degrees with only one3 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 engineers 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 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.

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

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.

Pharmaceutical Science
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 an industrial designer.

Laws (Honours)
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.

Software

This double degree combines creative and problem-solving skills to use IT in engineering applications.

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

DOUBLE DEGREE COMBINATIONS

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

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>Civil</th>
<th>Chemical</th>
<th>Electrical and computer systems</th>
<th>Environmental</th>
<th>Materials</th>
<th>Mechanical</th>
<th>Robotics and Mechatronics</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace</td>
<td>Aerospace</td>
<td>Chemical</td>
<td>Mechanical</td>
<td>Environmental</td>
<td>Materials</td>
<td>Mechanical</td>
<td>Robotics and Mechatronics</td>
<td>Software</td>
</tr>
</tbody>
</table>

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

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.

Being part of the Monash High Powered Rocketry team has impacted my university experience in many positive ways. It has provided me an opportunity to develop hands-on skills, work in multi-disciplinary teams to solve real problems and compete on the world stage. Further, it has allowed me to form life-long friendships, broaden my network, advance my professional skills and enhance my leadership skills.

ALEXANDER UNMACK
Bachelor of Aerospace Engineering (Honours) and Bachelor of Law
Graduate Officer, Monash High Powered Rocketry

The Boeing 787 Dreamliner, the Falcon Heavy rocket, and the Mars Perseverance Rover are just some of the following areas:

- 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 aeronautics
- building and structure design and testing.

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 2023 or an estimate.

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

BIOMEDICAL ENGINEERING

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, 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.

With my biomedical specialisation, I chose the Biomedical specialisation mainly for the balance between both my interests in biology and maths and the problem-solving aspect of engineering. It has always been a passion of mine to work in the health industry in the future and make a difference in people’s lives through improving their quality of life, and it’s exciting to know that when I graduate, I will be able to do exactly that.

CHARMAINE YEO
Bachelor of Biomedical Engineering (Honours)
PhD Researcher and Business and Media Intern, Monash Nova Rover Marketing Officer, Monash Young MedTech Innovators Student Mentor, Access Monash Mentoring Program

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 the Biomedical specialisation mainly for the balance between both my interests in biology and maths and the problem-solving aspect of engineering. It has always been a passion of mine to work in the health industry in the future and make a difference in people’s lives through improving their quality of life, and it’s exciting to know that when I graduate, I will be able to do exactly that.
CHEMICAL ENGINEERING

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, design, develop and improve the sustainability of processes that convert raw materials and wastes into useful products, with minimal environmental impact. They are 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 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 biotechnical 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 upgrading 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 modeling, artificial intelligence and digitalisation
• design, develop and use advanced and renewable materials.

My studies have opened doors to a lot of new skills and opportunities. During my undergraduate degree I did an internship with the Monash Woodside Energy Partnership, which introduced me to research concepts and led me to commencing a PhD with industry.

ROMALYA RANASINGHE
Industry Doctoral Program (Industry PhD) Bachelor of Chemical Engineering (Honours) Vice President, Monash Postgraduate Students

Civil engineers design and improve 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 build higher-capacity transportation systems. We need them to construct larger commercial and industrial complexes. We need them for water supply and pollution control.

We need efficient, cost-effective and innovative repair or replacement of civil infrastructure such as roads, bridges and buildings. 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:
• Structural – 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 geomechanics 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 properly and land development consulting firms
• environmental and renewable energy sectors.

As the leader of AES, I’ve felt a great sense of pride in working alongside my career-focused peers to deliver events to help build relationships with industry. Many students, myself included, have been exposed to industry insights and connections that have kick-started our careers.

I’ve been working as an undergraduate engineer on a major bridge and road upgrade project. This has advanced my fundamental skills and knowledge about road design and construction, gaining a great appreciation of the logistics, problem-solving, materials, and diligence needed to build something (supposedly) as simple as a road.

ANTON ZANGL
Bachelor of Civil Engineering (Honours) and Associate Member of Institute of Civil Engineers
President, Monash Association of Civil Engineering Students (MACES)

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

Discover more at monash.edu/engineering/specialisations/civil
### ELECTRICAL AND COMPUTER SYSTEMS ENGINEERING

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 miniaturized 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.

#### DISCOVER MORE
Discover more at monash.edu/engineering/specialisations/ecse

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### ENVIRONMENTAL ENGINEERING

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.

#### DISCOVER MORE
Discover more at monash.edu/engineering/specialisations/environmental

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**Monash offers a lot more than just your degree. Make sure to get involved with the clubs and societies, summer research and check out the study abroad opportunities offered.**

Going on exchange (twice) has been my favourite experience. It is an awesome opportunity. I really enjoyed being able to study abroad at the Monash Malaysia campus and The University of Colorado. Both gave me the opportunity to experience a different way of living, and I was able to study units that were not offered in my degree such as quantum computation.**

**SCOTT MOORE**
Bachelor of Electrical and Computer Systems Engineering (Honours) and Bachelor of Computer Science Scholarships in Research Program Scholarship

**I chose Environmental Engineering because I have a strong passion for sustainability. I enjoy working with natural environments and helping manage them to be in the best possible condition for our future generations. My degree exposed me to a wide range of disciplines including water scarcity, building science, contamination and environmental management systems. Researching and learning about these areas helped me discover my passion for hydrology.**

The highlight of my course was getting to know my lecturers and peers because they all brought such a strong passion for sustainability, both inside and outside the classroom.**

**JULIA TAN**
Bachelor of Environmental Engineering (Honours) and Bachelor of Science Graduate Diploma in Arts Access and Equity Lead, Monash Solar Decathlon Team
MATERIALS ENGINEERING

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
- automotive structural engineers
- failure analysts
- process engineers
- corrosion resistance engineers
- researchers

º I hope that my research, inspired by plants and their structures, will guide the next generation of solar panels, so they are more efficient, affordable, lightweight and durable. By probing into the surface structure of plant leaves and discovering how they handle light so efficiently while also being weather resistant, we can begin to replicate similar structures onto solar panels. I dream that one day I’ll look out my window and see solar panels on rooftops, cars, and building facades, all thanks to my research efforts.º - Jefferson Lam

º Mechanical systems are involved in almost every field in industry, and the opportunities for mechanical engineers to branch out are endless. I have a strong interest in medical engineering and undertook a Summer Research Program Scholarship to gain experience working in the industry. I’ve come out with a greater understanding of a research topic, new skills and a network of like-minded people. Working in CREATElab, and observing how people from every field in industry, and the opportunities so far are very diverse. We are applying our knowledge in industries where 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 safer and reliable human habitat to support future space exploration.º - Judy Li

MECHANICAL ENGINEERING

Mechanical engineering is about the intelligent and efficient use of motion and energy to create, manufacture and assemble devices, 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 safer 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 three 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.

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SOFTWARE ENGINEERING

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. You can apply for the highly-regarded IT Industry-Based Learning (IBL) program to do a half-year placement with a leading organisation. Placements count towards your course and are supported by $19,000 scholarships.

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
- blockchain 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.

My Co-op internship was at Amazon Prime Air in Seattle. I worked on a project to create software for drones to autonomously complete post-flight maintenance tasks. I’ve learned so many new things and my technical skills have greatly improved. This has been a really enlightening experience. The stand out has been interacting with my team. They’re a great bunch of people and I love just going into the office. My career aspirations have grown and I can see a path forward to become a more senior expert in the software engineering industry.”

DANESH NEWASHIRZADANA
Bachelor of Software Engineering (Honours) and Bachelor of Science
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 five years. 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. The ‘common first year’ provides a solid foundation in a broad range of engineering disciplines and scientific and design fundamentals.

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 and gives you the skills and confidence to pursue your dream career. Extending your technical knowledge and engineering capabilities to apply yourself through real-world projects and deliver sustainable solutions in your chosen specialisation area. You’ll develop innovative thinking and entrepreneurial skills to lead and solve complex challenges.

Become a strategic thinker, advance your leadership abilities, and engage with diverse stakeholders to enhance your future – and society’s.

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. With advanced technical knowledge and leadership capabilities, the master’s pathway will set you apart from those with similar degrees and set you on the path to career success.

Career options
- Specialist engineer or consultant within your chosen professional field
- Engineering management role in private or public sector
- Entrepreneur or CEO of your own company.

ENGINEERING MINORS

Artificial intelligence in engineering
Artificial intelligence is used by engineers 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
Civil engineers design and improve systems and processes that allow humans and nature to coexist with minimal impact. They design and build high-capacity transportation systems; construct large commercial and industrial complexes; water supply and pollution control systems; and repair or replace roads, bridges and other structures.

Computational engineering
Computational engineering is a rapidly growing multidisciplinary field that simulates the physical world using computers 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.

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

Environmental engineering
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.

Micro and nano technologies
Micro and nano technologies form the basis of any modern miniaturised system, such as wireless communication devices for environmental monitoring. Explore how the design properties of nanostructured materials can be exploited for everyday applications, ranging from food packaging and sunscreens, to sensors and energy-related areas.

Mining engineering
Mining engineering involves environmentally-safe extraction and processing of natural minerals from the earth. Mining engineers supply critical materials like copper, iron, lithium and gold, that are essential for modern society and the world’s economy. Automation and digital technologies are modernising the mining industry and transforming mining careers.

Renewable energy engineering
Renewable energy engineering focuses on the fundamental conversion of solar radiation, wind, hydro, and biomass energy resources into electricity by designing, building and operating energy plants such as wind farms, solar farms and hydro power facilities. Renewable energy engineers run the large-scale energy system incorporating renewables, and provide expert advice in the development of energy policy.

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

Sustainable engineering
The Sustainable engineering minor provides the knowledge and skills to understand the interplay between the environment and human activities. A growing multidisciplinary field of engineering, 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.

Discover more at [monash.edu/engineering/minors](monash.edu/engineering/minors)
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 it applies to your course of choice in this guide.

<table>
<thead>
<tr>
<th>English</th>
<th>Mathematics</th>
<th>Science</th>
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<td>Level 2</td>
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<td>VCE</td>
<td>Units 3 and 4: a study score of at least 35 in SL English (A/L) or 25.4 in English other than EAL. Units 3 and 4: a study score of at least 35 in SL English (A/L) or 25.4 in English other than EAL. Units 3 and 4: a study score of at least 32 in Mathematics Methods (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 Chemistry or Physics.</td>
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English, Mathematics, or Science

All at least 4 in the following HL subjects:
- English A: Language and Literature, or English A: Language and Literature, OR Level 2 English, or English B.
- English A: Literature, or English A: Language and Literature.
- English B.
- Mathematics: Analysis and Approaches, or Mathematics: Analysis and Approaches, OR Level 2 Mathematics, or Mathematics, or Further Mathematics, or Mathematics: Analysis and Approaches.
- Mathematics: Analysis and Approaches, or Mathematics: Analysis and Approaches, OR Level 2 Mathematics, or Mathematics, or Further Mathematics, or Mathematics: Analysis and Approaches.

All at least 3 in any mathematics subject at SL level, or any mathematics subject at SL level, or any mathematics subject at SL level.

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Single degree courses at a glance

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Double degree courses at a glance

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1. Durations are based on a standard full-time load of 40 credit points per semester.
2. Indicative – The provided suite for the 2022 intake is subject to change 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, environmental 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 will need to undertake more than the standard calendar load of 40 credit points in your fourth and final year in order to complete the course in six years.
INTERNATIONAL 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 below 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:

<table>
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<tr>
<th>COUNTRY</th>
<th>QUALIFICATION</th>
<th>AWARDING BODY</th>
<th>HOW TO CALCULATE YOUR ENTRY SCORE</th>
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<td>AUSTRALIA</td>
<td>Australian Year 12 qualifications listed below (refer to the 2023 ATAR for international students’ column)</td>
<td>Australian Year 12 qualifications are listed below (refer to the 2023 ATAR for international students’ column)</td>
<td>Overall average of all Semester 1 and Semester 2 Grade 12 results.</td>
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</table>

ACADEMIC ENTRY REQUIREMENTS

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.

1. Duration is based on a standard full-time load of 48 credit points per annum.
2. Please refer to monash.edu/admissions for further details on semester intake availability for individual specialisations.
3. Scores are quoted in Band levels. The numerical equivalent may vary depending on the institution offering the course in 2023. Fees are adjusted annually. Please see monash.edu/admissions/credit-passes for information regarding Monash's approach to academic entry requirements.
4. The Monash College Diploma Part 1 and Part 2 entry requirements are for students commencing their undergraduate degree in 2023.
COURSE STRUCTURE

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

YEAR 1

Semester 1  Engineering methods  Engineering mathematics  Engineering numerical analysis  Discipline
Semester 2  Engineering design  Engineering smart systems  Level 1 Engineering technical elective  Discipline

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

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
Semester 2  Final year project B  Design practice  Computer-aided design  Level 3, 4 or 5 technical or engineering minor elective unit

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).

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.

Scholarships
For more information, and to apply for scholarships, visit: monash.edu/scholarships

Fees
To estimate your course fees, visit: monash.edu/fees

Commonwealth Supported Places
Australian citizens, New Zealand citizens, Australian permanent residents and permanent humanitarian visa holders are eligible to apply for a Commonwealth Supported Place (CSP). 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 (IB) Diploma in Australia or New Zealand, or National Certificate of Educational Achievement (NCEA) Level 3 in New Zealand must apply through the Victorian Tertiary Admissions Centre (VTAC). Visit: monash.edu/study/how-to-apply

Fees
A$50,200 annual average fee per 48 credit points of study in this course for 2023. Further information on fees for each course can be found at: monash.edu/fees

Monash College
Monash College is the preferred pathway for students who aspire to study engineering at Monash University but who narrowly miss the academic requirements for direct entry. The course you choose depends on your current level of study and future career plans. For more information on Monash College academic pathways, visit: monashcollege.edu.au/courses

INTERNATIONAL STUDENTS

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

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, 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

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.

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
• Campus security
• Careers counselling
• Disability support services
• e-Research services
• Family support
• Monash Connect
• Skills Essentials seminars
• Wellbeing

Orientation
Our orientation service incorporates a series of programs to help students adjust to a new country and the Monash University environment.
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
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INSTAGRAM
@monashengineering
LINKEDIN
linkedin.com/school/monash-engineering
TWITTER
@monashengineers
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
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 and Co-operative Education Internship Program:

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