



MONASH
University

ENGINEERING

GRADUATE COURSE GUIDE

2026



MONASH ENGINEERING

A GLOBAL LEADER

Gain the technical expertise, research knowledge and professional experience to ignite innovation and deliver sustainable engineering solutions at a time when they're needed more than ever.

DEEPEN YOUR KNOWLEDGE AND TRANSFORM YOUR CAREER

Study hands-on in our world-class facilities as you learn from expert academics, researchers and industry professionals. Join our diverse community of ambitious graduates and come together to solve society's global challenges – across climate, energy, transportation, water and health.

Gain job-ready skills through internships, industry placements and projects in professional engineering settings. Wherever you want to go, we'll equip you with the capabilities, confidence and connections to get you there.

WORLD RANKINGS

#36

IN THE WORLD
QS WORLD UNIVERSITY
RANKINGS 2026

#59

IN THE WORLD
FOR ENGINEERING
AND TECHNOLOGY
Times Higher Education, 2025

38K+

ENGINEERING ALUMNI
FROM MORE THAN
90 COUNTRIES
2025

94%

POSTGRADUATES
SECURE EMPLOYMENT
WITHIN 4 MONTHS
2023 Graduate Outcomes Survey (QILT)

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LIVING IN MELBOURNE

32

COURSE INFORMATION FAST FACTS

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

	Location
	Duration
	Intakes

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.

REAL INDUSTRY EXPERIENCE

“ Working for an Australian company like Tasty Fresh, as part of the Industry Innovation Program (IIP) at Monash has been really exciting. Our IIP project involved testing initial designs, and creating a concept and a prototype for refrigeration systems for Tasty Fresh's next generation van.”

RAVI GURUNATHAN
Master of Professional Mechanical Engineering Graduate



Learn more:
[youtube.com/watch?v=rKgW7y1UKiU](https://www.youtube.com/watch?v=rKgW7y1UKiU)

SHARPEN YOUR EDGE IN THE GLOBAL WORKFORCE

With a postgraduate degree, you'll graduate as a confident, capable and connected engineer. Plus, you'll be ready to excel in the professions of tomorrow – to add value from day one. In fact, over 94% of our postgraduates secure full-time employment within four months. You'll solve real-world challenges as you build a solid foundation for professional development, grow your industry contacts and strengthen your employability.

EXTEND YOUR EMPLOYABILITY AND PROFESSIONAL SKILLS

EMPLOYABILITY SKILLS PROGRAM

The Employability Skills Program (ESP) is designed to equip graduate engineering students with the professional skills needed for successful industry placements and long-term career development. Through targeted workshops, students build capabilities in personal branding, technical CV and cover letter writing, effective networking, and LinkedIn optimisation. The program concludes with mock interviews and a networking session with industry partners, providing a practical platform to apply these skills in real-world scenarios.

monash.edu/engineering/employability-skills-program

RESEARCH EXPERIENCE

You can experience Monash's world-leading research while studying your degree. Participate in innovative, multidisciplinary research through embedded research units within our courses.

CAREER ADVICE AND MENTORING

Meet successful industry alumni who've had a similar student journey as you, seek career advice and learn from their experiences. The Women in Engineering and Alumni Mentoring programs are available to help you build industry knowledge and networks.

monash.edu/engineering/mentoring

BOLSTER YOUR INDUSTRY EXPERIENCE

At Monash, you'll go beyond the classroom to build your capabilities through real-world work experiences. Put theory to the test with initiatives like:

INDUSTRY EXPERIENCE PROGRAM (IE)

Complete a graduate internship – and gain credit towards your degree. You'll sharpen new skills, expand your industry knowledge, grow your network and gain a richer understanding of your field.

monash.edu/engineering/graduate-internships

INDUSTRY DOCTORAL PROGRAM (IDP)

Embedded in a business, you'll take a portfolio-based approach to PhD research and design solutions to real commercial challenges – all while growing your career. [Go to page 31 to learn more about an Industry Doctoral Program.](#)

GRADUATE RESEARCH INDUSTRY PARTNERSHIPS (GRIPS)

Collaborate with academics and industry partners to solve practical challenges. Across food and dairy, public transport, chemicals and plastics manufacturing, and water and sustainability in Asia.

monash.edu/grip

PHD RESEARCH INTERNSHIPS

Apply your research skills and boost your employability as you work on short-term industry projects. We partner with the Australian Postgraduate Research Internship programs to provide hundreds of internship opportunities.

monash.edu/graduate-research/partnerships/internships

CONNECT COLLABORATE AND CREATE

Want to tackle global challenges and collaborate with the brightest minds? Enrol in a graduate degree to network with top engineers, turn your ideas into innovations – and fast-track your career.

MONASH: A GLOBAL COMMUNITY

Monash University is truly a global university. Our main base is in Australia, but our presence extends to locations in China, Malaysia, Indonesia, Italy and India. We also have 100+ partner institutions across the globe.

THE GENERATOR: IGNITE YOUR ENTREPRENEURIAL SPARK

Want to accelerate your start-up or bring an idea to life? Perhaps even take it global? Our entrepreneurial program, The Generator, provides experiential education, mentorship and seed funding to support – and amplify – your journey. Make your dream a reality in our purpose-built collaborative design and build spaces.

monash.edu/entrepreneurship

MONASH GRADUATE ASSOCIATION (MGA)

The MGA provides graduate students with advocacy, advice and support services. They also organise social events, peer mentoring, workshops and seminars to provide opportunities to network and develop their skills.

mga.monash.edu

STUDENT TEAM INITIATIVE: TEAM UP AND GET CONNECTED

Develop hands-on skills, pursue your passions and compete in international challenges. Our multidisciplinary student teams operate like a start-up, steer products through R&D, harness advanced testing facilities and sharpen your project management skills. You'll boost your employability as you collaborate with trailblazers and industry sponsors. Our students have secured dream careers with the likes of Tesla, Boeing and NASA from their team or club experience and connections.

Some Monash teams leading the way are:

- Monash Motorsport developed Australia's first Formula Student driverless car
- Monash Nova Rover placed second in the International University Rover Challenge
- Monash Sustainable Buildings won international competitions with net-zero housing designs.

With over 30 active groups, you'll find the perfect fit for your ambitions and aspirations. To learn more about Monash Student Teams Initiative, visit:

monash.edu/engineering/student-experience/teams-and-clubs

RESEARCH: TURN INSIGHTS INTO INNOVATIONS

Our vibrant Technology Precinct is where fresh ideas become real-world solutions. As a graduate research student, you'll partner across disciplines and solve industry challenges to commercialise your research.

Our complete innovation ecosystem brings together:

- Australia's largest university
- World-class researchers – and far-reaching networks
- State-of-the-art research tools and facilities
- Talented students and professionals across fields
- Industry partners – from start-ups through to multinationals.

Join a community that's committed to enriching society to help build a better future for all.

SEIZE INTERNATIONAL RESEARCH OPPORTUNITIES

Pursue your research in esteemed universities around the world – and build a worldwide network of mentors and collaborators. Create impact locally and globally. Participate in joint PhD Award programs at world-renowned institutions and access international collaboration grants to fund travel, global research collaborations and joint publications.

monash.edu/graduate-research/study/joint-research-awards

WORLD-CLASS FACILITIES

At Monash, you'll test processes, build prototypes and redefine what's possible. Harness robotics, apply machine learning or ignite your entrepreneurial spark to design next-gen innovations.

RESEARCH INFRASTRUCTURE AND FACILITIES

Want to delve deep and pursue your passions? At Monash, you'll explore ideas and examine what's possible across our innovation ecosystem. Some of our world-class research facilities include:

- Woodside Building for Technology and Design
- New Horizons Research Centre
- Monash Centre for Electron Microscope – home to the TITAN
- X-ray Analytical Platform
- The Living Lab
- Food Innovation Centre and Labs
- Monash Centre for Additive Manufacturing (MCAM)
- Australian Synchrotron.

monash.edu/engineering/our-research/facilities



ARC RESEARCH HUBS AND CENTRES OF EXCELLENCE

Our researchers are solving the world's most complex challenges. Collaborate with Australian Research Council (ARC) centres, industrial transformation research hubs and cooperative research centres, including:

- Advanced Manufacturing with 2D Materials (AM2D)
- Carbon Utilisation and Recycling (RECARB)
- Critical Energy Separation Materials (CREST)
- Cyber-Farming for Sustainable and Resilient Agriculture
- Energy-efficient Separation
- Exciton Science
- Future Low-Energy Electronics Technologies (FLEET)
- Infrastructure Net Zero
- NetZero Hub
- Processing Lignocellulosics into High Value Products (PALS)
- Smart Pavements Australia Research Collaboration (SPARC)
- Sustainable Materials and Responsible Technologies for Packaging Training Centre (SMaRT-Pack).

MONASH INNOVATION LABS

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 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.edu/monash-innovation-labs

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.

monash.edu/engineering/makerspace

MONASH ROBOTICS

Monash's robotics research facility is training the next generation of engineers and accelerating Australia's emerging AI economy.

The \$6.5 million investment provides experimental space and advanced equipment – placing you at the forefront of cutting-edge AI innovation.

monash.edu/engineering/robotics

MONASH TECHNOLOGY PRECINCT

World-leading research deserves world-class facilities. The Monash Technology Precinct connects top talent, government initiatives and industry partners – with powerful research infrastructure.

monash.edu/industry/monash-technology-precinct

RESEARCH INSTITUTES AND CENTRES

Monash University is home to some of the most advanced facilities in the world. You'll collaborate across disciplines in our advanced research institutes and centres, such as:

- Monash Institute of Medical Engineering (MIME)
- Monash Energy Institute (MEI)
- Institute of Railway Technology (IRT)
- Monash Institute of Transport Studies (ITS)
- Maintenance Technology Institute (MTI)
- Bioresource Processing Institute of Australia (BioPRIA)
- Monash Victorian Heart Institute (VHI)
- Monash Centre for Membrane Innovation (MCMI)
- Monash Infrastructure (MI).

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



youtu.be/Pys09jpQUE8



MASTER'S DEGREES AT A GLANCE

From extending your expertise to becoming an accredited engineer to leading pioneering research, we have the graduate course for you.

MASTER'S DEGREES (BY COURSEWORK)				
Want to gain knowledge and build your engineering experience through an approach that's both practical and theoretical? Learn the skills, thinking and strategies required to solve problems – while developing your leadership and entrepreneurial know-how.				
	MASTER OF ENGINEERING	MASTER OF TRANSPORT AND MOBILITY PLANNING	MASTER OF ADVANCED ENGINEERING	MASTER OF PROFESSIONAL ENGINEERING
	Elevate your career. Hone your technical and leadership skills in just one year.	Get a multidisciplinary perspective. Develop sustainable and efficient transport solutions.	Solve advanced problems. Prepare yourself to work at the highest levels of industry.	Become an accredited engineer. Change engineering specialisation or build on your previous STEM studies.
DURATION	1 year	1 year	2 years	2 or 3 years depending on prior engineering qualifications
ENTRY REQUIREMENTS Engineering	Four-Year Bachelor of Engineering (or equivalent as approved) MIN. 65% AVERAGE	Relevant Engineering Honours Degree (or equivalent as approved) MIN. 65% AVERAGE	Four-Year Bachelor of Engineering (or equivalent as approved) MIN. 65% AVERAGE	Four-year Bachelor of Engineering (or equivalent as approved) MIN. 65% AVERAGE
ENTRY REQUIREMENTS Non-Engineering		Bachelor Honours Degree in a related field as approved MIN. 65% AVERAGE 3 years of relevant professional work experience		Bachelor's Degree with prior studies in mathematics and physics or chemistry (or equivalent as approved) MIN. 65% AVERAGE
AREAS OF FOCUS	Choose from 10 specialisations	Transport planning and a range of elective options	Choose from 10 specialisations	Choose from 5 specialisations
	Go to page 8 to find out more	Go to page 10 to find out more	Go to page 12 to find out more	Go to page 14 to find out more

MASTER'S SPECIALISATIONS

This table lists the different specialisations and Master's courses they are available in.

	Master of Engineering	Master of Transport and Mobility Planning	Master of Advanced Engineering	Master of Professional Engineering
Biological engineering	•			
Bioresource engineering			•	
Chemical engineering				•
Civil engineering	•			•
Electrical engineering	•			•
Energy transitions engineering	•			
Engineering management	•		•	
Materials engineering	•			•
Mechanical engineering	•			•
Medical engineering			•	
Power Systems engineering	•		•	
Renewable energy engineering	•		•	
Robotic construction engineering			•	
Robotics engineering			•	
Smart manufacturing engineering	•		•	
Telecommunications engineering			•	
Transport and Mobility Planning		•		
Urban systems engineering			•	

HOW TO APPLY MASTER'S DEGREES (BY COURSEWORK)

DOMESTIC STUDENTS

You're considered a domestic student if you're an Australian or New Zealand citizen, or Australian permanent resident (including a holder of an Australian permanent humanitarian visa).

INTERNATIONAL STUDENTS

Before you apply, please make sure you meet all the Monash minimum entry requirements – including academic, English language and selection criteria. Your application must include original or certified academic documentation, including academic transcripts, graduation certificates and grading scales (indicating the pass mark and graduation requirements if applicable). International students can apply online or through a Monash agent.

SCHOLARSHIPS

At Monash, we believe in unlocking your potential. We offer a range of scholarships and study grants to help you reach your full potential and achieve your career goals and aspirations. For more information and to apply: monash.edu/scholarships

READY TO STUDY A MASTER'S DEGREE?

To apply for a graduate coursework degree or learn more: monash.edu/study/how-to-apply

RESEARCH DEGREES AT A GLANCE

GRADUATE RESEARCH				
Want to lead research and transform the future? In our two-to-four-year engineering research degrees you can solve real-world issues in a stimulating, supportive environment. Be involved in pioneering research and collaborate with leading researchers.				
	MASTER OF ADVANCED STUDY (ENGINEERING RESEARCH)	MASTER OF ENGINEERING SCIENCE (RESEARCH)	DOCTOR OF PHILOSOPHY (PHD)	INDUSTRY DOCTORAL PROGRAM
	Elevate your engineering expertise. Develop skills and research techniques to make world-leading innovations.	Tackle global challenges. Develop skills to improve way of life in communities.	Pursue your passion. Undertake research in a world-class research environment.	Research for an industry partner. Build your portfolio whilst developing employable skills.
DURATION	2 years	2 years	3-4 years	3-4 years
ENTRY REQUIREMENTS All Applicants	Demonstrated capacity to carry out independent research and have adequate training and ability to pursue the proposed course of study.			
AREAS OF RESEARCH	Select diverse research projects across multiple fields from STEM and other disciplines.			
	Go to page 28 to find out more	Go to page 29 to find out more	Go to page 30 to find out more	Go to page 31 to find out more

HOW TO APPLY GRADUATE RESEARCH DEGREES

To apply for a graduate research degree, follow these five simple steps:

- 1 **Check your eligibility** and make sure you meet both the academic and english language requirements
- 2 **Find a supervisor** or a research project in an area that interests you
- 3 **Submit an expression of interest**
- 4 **Obtain an invitation to apply**
- 5 **Apply**

For more details on how to apply, submit an expression of interest and more information about research scholarships: monash.edu/engineering/graduate-research/how-to-apply

APPLICATION DATES FOR GRADUATE RESEARCH SCHOLARSHIPS:

- **International students:** 31 March and 31 August
- **Domestic students:** 31 May and 31 October

READY TO START YOUR GRADUATE STUDY JOURNEY?

For the latest information on courses, visit monash.edu/engineering/future-students/graduate-research to check:

- Entry requirements for domestic and international students
- Course requirements
- Course fees and scholarships
- Application closing dates
- Course start dates.

ENGLISH LANGUAGE REQUIREMENTS

To apply for an engineering graduate course, you must meet the English language requirements. monash.edu/admissions/entry-requirements/english-language



Scan for more information and to apply
monash.edu/study/interest-areas/engineering

MASTER'S DEGREES (BY COURSEWORK)

📍 Clayton (on campus)

🕒 1 year (full-time¹)

➡ February and July

💰 International students:
A\$56,300 (2025 fees p.a)
Domestic students:
A\$47,000 (2025 fees p.a)
Fees are per 48 credit points, which represents a standard full-time course load for a year.

INDUSTRY EXPERIENCE

Professional development

DEGREE AWARDED

The degree you're awarded will reflect your chosen specialisation.

MONASH ENGLISH LANGUAGE LEVEL

Level A (see page 7)

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.

COURSE CODE: E6014 CRICOS: 104589A

COURSE SPECIALISATIONS

Pursue your passions and expand your learning in your chosen specialisation:

- Biological
- Civil
- Electrical
- Energy transitions
- Engineering management
- Materials
- Mechanical
- Power systems
- Renewable energy
- Smart manufacturing.

Refer to pages 16 to 25 to delve deeper into each area.



Discover more at:

🔗 monash.edu/engineering/masters

MASTER OF ENGINEERING

Advance your technical and leadership skills – and take your career to the next level. You'll develop innovative thinking and entrepreneurial skills to lead and solve complex challenges.

WHO IS THIS COURSE FOR?

The Master of Engineering is for you if you:

- Have already completed a four-year accredited engineering degree in one of the related specialisations
- Want to achieve a master's qualification in one year
- Want to advance your technical, professional and leadership skills.

COURSE OVERVIEW

Build on your engineering capabilities to apply yourself through real-world projects and deliver sustainable solutions in your chosen specialisation area.

Designed to foster innovation and professional development, this one-year program gives you the skills to take your career to the next level – and stand out in a competitive job market.

With a Master of Engineering, you'll take on advanced technical units in your specialisation area. You'll receive an introduction to research practices in engineering. And, through our Professional engineering in organisation and society unit, develop the strategic problem-solving skills so crucial to your future career.

Also available are enhancement units. These allow you to expand your knowledge into an adjacent or complementary field and gain the advanced technical capabilities employers want.

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

COURSE STRUCTURE

The Master of Engineering is structured in three parts:

PART	UNIT TYPE	POINTS	OVERVIEW
A	Common core units	18	Providing you the skills to practise as a professional engineer, undertake research practice and advanced data analysis.
B	Specialist core units	24	To advance your technical knowledge in your specialisation.
C	Enhancement unit	6	Choose from technical subjects in a complementary field, learn new skills to guide you on innovation and an entrepreneurial path, or undertake Industry Experience internship placement.

ENTRY REQUIREMENTS	Average requirements ²	Duration (years) ¹
Four-year Bachelor of Engineering (or equivalent) in a discipline relating to the specialisation to be studied within the master's course as approved by the faculty. The Engineering Management specialisation is available to applicants with an Australian Bachelor of Engineering (or equivalent) in any discipline.	High Credit (65%)	1

1 Part-time study may be available to international students studying onshore in Australia who hold specific visa categories. Please check your visa for confirmation.

2 In equivalent Monash University grading scale terms, a 100% scale where 50% is a pass. Your prior qualifications must be accredited to the equivalent Australian level specified in the eligibility requirements table.

WHAT YOU'LL GAIN



SHARPEN YOUR LEADERSHIP AND STRATEGIC SKILLS

- Develop your professional skills to be an effective engineer and leader
- You'll learn how to become a strategic, critical, proactive thinker. So you're ready to step into industry and solve complex problems from day one.



BUILD A FOUNDATION FOR FUTURE CAREER SUCCESS

- Leverage our industry links to immerse yourself in industry-led projects. And seize the kinds of opportunities that lead to better career outcomes
- With industry experience bolstering your technical skillset, you'll have a competitive edge in the job market.



APPLY YOURSELF TO DESIGN REAL-WORLD SOLUTIONS

- Apply advanced data analysis to examine commercial scenarios and produce recommendations that support business growth
- Engage in industry-based seminars and placements – all while you complete your qualification.



WITH THE MASTER OF ENGINEERING, YOU'LL BUILD A SOLID FOUNDATION FOR YOUR PROFESSIONAL DEVELOPMENT AND GAIN AN EDGE IN THE COMPETITIVE GRADUATE EMPLOYMENT MARKET.

FAST TRACK YOUR STUDIES WITH THE ACCELERATED MASTERS PATHWAY³

Our accelerated masters pathway is designed for high-achieving Monash students – both current and future.

Through it, you can earn a Bachelor of Engineering (Honours) degree and a Master of Engineering. Building vital technical and leadership skills and gaining an expert master's degree – in just 4.5 years.

Save on fees and study time. And set yourself apart from those with similar degrees – to set yourself up in the job market.

🔗 monash.edu/engineering/masters-accelerated-pathway

3 Please refer to monash.edu/study for Master's Accelerated Pathway entry requirements.



“

The Master's was appealing as a way to differentiate myself from other job applicants as I entered the increasingly competitive professional world, especially with the low time commitment. I found myself aligning most closely with Mechanical, in part because it is what I was most capable of and also what I found myself enjoying most.”

CHARLES MCNAMARA

Master of Mechanical Engineering Graduate
Graduate Rail Engineer, WSP

📍 Clayton and Caulfield (on campus)

🕒 1 year (full-time)¹

📅 February and July

💰 International students: A\$56,300 (2025 fees p.a)
Domestic students: A\$47,000 (2025 fees p.a)
Fees are per 48 credit points, which represents a standard full-time course load for a year.

DEGREE AWARDED
Master of Transport and Mobility Planning

MONASH ENGLISH LANGUAGE LEVEL
Level A (see page 7)

CAREER OPTIONS

- Transport planner
- Urban mobility consultant
- Transport policy analyst
- Transport researcher

COURSE CODE: E6016 **CRICOS:** 113907F



Discover more at:
🔗 monash.edu/engineering/master-transport-mobility-planning

MASTER OF TRANSPORT AND MOBILITY PLANNING

Boost your skills in the complex world of cities and transport. Tackle the complex challenges of modern transport and mobility planning. Contribute to the development of sustainable and efficient transport systems in cities worldwide.

WHO IS THIS COURSE FOR?

The Master of Transport and Mobility Planning is for you if you:

- Have a degree in engineering, urban or town planning, human geography or another related field and want a competitive edge in the growing field of transport planning
- Join the transport, mobility and urban planning sector from a different area and want to broaden your knowledge and skills
- Have worked in the sector for some time but want to challenge your knowledge and expand your understanding.

LEARN FROM EXPERTS

Designed and delivered by Australia's Monash Institute of Transport Studies, in partnership with the Monash Sustainable Development Institute, this postgraduate qualification will prepare you for a career as a transportation planner, urban mobility consultant, policy analyst, and/or researcher in both public and private sectors.

COURSE OVERVIEW

This course offers a diverse and well-rounded curriculum combining theoretical foundations with practical applications, designed to equip you with the necessary skills and knowledge to tackle the complex challenges of modern transport and mobility planning. You'll develop a deep understanding of the interrelationships between social, economic, and environmental factors that drive the need for integrated transport, mobility and urban planning policy, infrastructure, land use and service provision.

The program emphasises the integration of innovation and technology into urban planning to influence positive system change and improve mobility options for city residents and visitors.

By exploring the links between urban transport and land use planning, you'll gain an understanding of how those relationships are challenged by emerging trends and technologies. From this you will develop informed solutions to project-based real-world case studies.

You'll also delve into the realm of travel demand modelling, enabling you to design effective transport strategies and infrastructure.

COURSE STRUCTURE

The Master of Transport and Mobility Planning is structured in two parts:

PART	UNIT TYPE	POINTS	OVERVIEW
A	Transport and mobility study	36	Develop creative thinking, conceptualisation, analytical reasoning, design proficiency, collaborative aptitude and evaluative capabilities essential to take on the challenges inherent in transport and mobility planning.
B	Elective study	12	Choose from a range of options, allowing you to delve deeper into sustainable development and behaviour change, public policy reform or environmental analysis, or pursue broader professional development.

ENTRY REQUIREMENTS	Average requirements ²	Duration (years) ¹
Australian Bachelor degree (or equivalent) in civil engineering, environmental engineering, sustainable engineering, infrastructure engineering, urban/city/town planning or other related fields. ³	High Credit (65%)	1
Australian Honours Bachelor degree (or equivalent) in transportation, environmental sciences, human geography, architecture, land surveying, human geography or other related fields ³ and a minimum of 3 years relevant professional work experience ² in transport, urban, city, town or regional planning.	High Credit (65%)	1

¹ Part-time study may be available to international students studying onshore in Australia who hold specific visa categories. Please check your visa for confirmation.
² You are required to adequately demonstrate your professional work experience, and submit one original employment reference which supports your CV
³ Related fields approved by the Faculty of Engineering.

WHAT YOU'LL GAIN



TAKE AN INTEGRATED MULTIDISCIPLINARY PERSPECTIVE

- Understand the interactions between organisations and communities and their social and political contexts
- Learn how to identify factors that influence transport planning and delivery.



ASSEMBLE A TOOLKIT FOR TRANSPORT AND MOBILITY RESEARCH AND PLANNING

- Develop skills in data analysis and interpretation to support decision-making, and independent research skills enabling you to critically evaluate problems and propose innovative solutions
- Learn to appraise major transport policy, strategy and infrastructure initiatives that shape the future of cities.



GET A TICKET TO FAST-TRACK YOUR CAREER

- Enhance your career mobility with skills that bridge several disciplines relevant to transport and urban mobility
- Boost your marketability in the industry, enabling you to secure competitive remuneration and enjoy more rapid career progression.

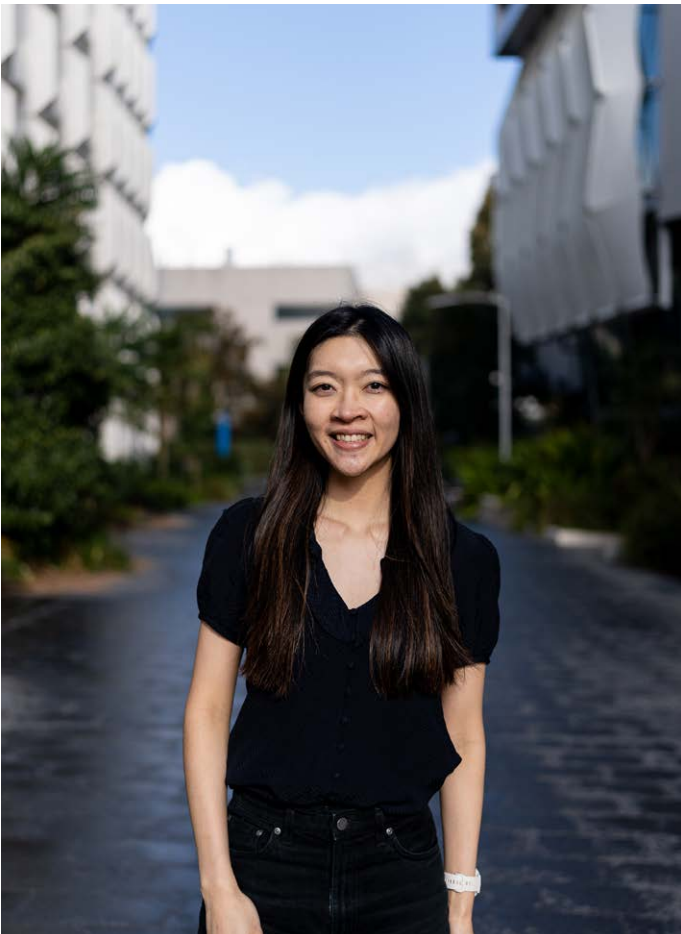
HELP DEVELOP SUSTAINABLE AND EFFICIENT TRANSPORT SYSTEMS IN CITIES WORLDWIDE.

Ranked

#44

IN THE WORLD FOR TRANSPORTATION SCIENCE & TECHNOLOGY

Academic Ranking of World Universities 2024



“

I was motivated to pursue the Master's because it provided the opportunity to explore the multifaceted nature of transport in greater depth while developing specialised knowledge, technical skills, and a strategic perspective. Through the program, I've gained deeper insights into transport planning and modelling, economics, urban planning principles, and areas such as data analysis and policy development. This has broadened my perspective and enhanced my practical skills, which I've already applied in my career."

CASSANDRA MIN

Master of Transport and Mobility Planning
Lead Precincts Transport Advice, Department of Transport and Planning

MASTER'S DEGREES (BY COURSEWORK)

📍 Clayton (on campus)

🕒 2 years (full-time¹)

➡ February and July

💰 International students:
A\$56,300 (2025 fees p.a)
Domestic students:
A\$47,000 (2025 fees p.a)
Fees are per 48 credit points, which represents a standard full-time course load for a year.

INDUSTRY EXPERIENCE

Professional development

DEGREE AWARDED

The degree you're awarded will reflect your chosen specialisation.

MONASH ENGLISH LANGUAGE LEVEL

Level A (see page 7)

CAREER OPTIONS

- Lead or specialist engineer in your field/s of expertise
- On the pathway to becoming a researcher or academic
- Engineering manager or leader in public or private sector

COURSE CODE: E6017 CRICOS: 114826K

COURSE SPECIALISATIONS

Pursue your passions and expand your learning in your chosen specialisation:

- Bioresource
- Engineering management
- Medical
- Power systems
- Renewable energy
- Robotic construction
- Robotics
- Smart manufacturing
- Telecommunications
- Urban systems.

Refer to pages 16 to 25 to delve deeper into each area.



Discover more at:
🔗 monash.edu/engineering/advanced-masters

MASTER OF ADVANCED ENGINEERING

An advanced degree to meet the growing demands of industry. Specialise in rapidly-developing areas of engineering and gain the skills required to tackle the issues that define our generation.

WHO IS THIS COURSE FOR?

The Master of Advanced Engineering is for you, if you:

- Have already completed a four-year accredited engineering degree
- Want to complement and expand your technical knowledge in other specialisation areas
- Aspire to become an innovative, strategic thinker and leader in your field
- Are looking to advance your career and future.

COURSE OVERVIEW

The Master of Advanced Engineering prepares you for work in the engineering industry at the highest levels. It provides you with the knowledge, understanding and skills to enable you to deal effectively with advanced issues involving application of engineering in various domains.

Choose from two streams:

- **Industry:** Undertake Industry Experience (IE) with one of Monash's partner organisations, whilst also completing units focused on the leadership and management.
- **Research:** If you're considering a research or academia career pathway, this stream is designed to develop your specialist engineering while also completing a master thesis, focusing on a project aligned to your specialisation.

COURSE STRUCTURE

The Master of Advanced Engineering is structured in four parts:

PART	UNIT TYPE	POINTS	OVERVIEW
A	Common core units	24	The units are designed to establish IT literacy and develop essential skills that translate theory into engineering practice and research.
B	Specialist core units	36	In this part, you will identify, interpret and critically appraise current developments and advanced technologies to synthesise evidence-based design solutions within your specialisation.
B	Advanced practice	24	The focus of these studies is professional or scholarly work that can contribute to a portfolio of professional development. There are two streams available for you to choose from: • Industry experience stream • Master's thesis research stream
C	Enhancement units	12	These units are designed to provide breadth, either outside of your chosen engineering specialisation and/or in disciplines allied with and supportive of engineering.

ENTRY REQUIREMENTS	Average requirements ²	Duration (years) ¹
A four-year Australian Bachelor of Engineering degree (or equivalent) in a discipline relevant to the specialisation ³ to be studied within the master's course, as approved by the Faculty.	High Credit (65%)	2

¹ Part-time study may be available to international students studying onshore in Australia who hold specific visa categories. Please check your visa for confirmation.
² In equivalent Monash University grading scale terms, a 100% scale where 50% is a pass. Your prior qualifications must be accredited to the equivalent Australian level specified in the eligibility requirements table.
³ Refer to the website for details of the relevant undergraduate degree disciplines that align to each of the masters specialisations.

WHAT YOU'LL GAIN



A QUALIFICATION DESIGNED FOR THE FUTURE

- This advanced master's is designed to meet the growing demands of industry
- Choose from specialisations in rapidly-developing areas of engineering practice that will set you up with the skills needed by industry, now and in the future.



ADVANCED TECHNICAL KNOWLEDGE

- Build on your undergraduate study to expand your technical knowledge in another engineering specialisation
- Become an expert at the intersection of two complementary fields of engineering. You'll have a unique perspective and skillset to make your mark and become highly employable across engineering fields.



A HEAD START ON YOUR CAREER PATH

- Whether it's a career in industry or you're passionate about research, choose your preferred stream and tailor your master's degree to your future career pathway
- In second year, you'll expand your professional development and either engage with industry and work integrated learning or conduct a research project and complete your master thesis.



“

My work in artificial intelligence and medical imaging significantly reduces MRI scan times, providing greater comfort to patients.”

DR. MEVAN EKANAYAKE

Doctor of Philosophy (PhD) Electrical and Computer Systems Engineering, Monash University



READ MEVAN'S STORY

🔗 go.monash.edu/dlzs4s

MASTER'S DEGREES (BY COURSEWORK)

Clayton (on campus)

2 or 3 years (full-time¹)

February and July

International students:
A\$56,300 (2025 fees p.a.)

Domestic students:
A\$46,500 (2025 fees p.a.)

Fees are per 48 credit points, which represents a standard full-time course load for a year.

INDUSTRY EXPERIENCE
Professional development

DEGREE AWARDED
The degree you're awarded will reflect your chosen specialisation.

MONASH ENGLISH LANGUAGE LEVEL
Level A (see page 7)

- CAREER OPTIONS**
- Manager or contributor to complex projects for public, private or non-governmental organisations
 - Consultant, entrepreneur or CEO of your own company
 - Lead specialist in your field/s of expertise.

COURSE CODE: E6011 **CRICOS:** 102717C

¹ Part-time study may be available to international students studying onshore in Australia who hold specific visa categories. Please check your visa for confirmation.

COURSE SPECIALISATIONS
Pursue your passions and expand your learning in your chosen specialisation:

- Chemical
- Civil
- Electrical
- Materials
- Mechanical.

Refer to pages 16 to 25 to delve deeper into each area.

Discover more at:
 monash.edu/engineering/professional-masters

MASTER OF PROFESSIONAL ENGINEERING

Gain the technical and professional practice skills to become an accredited engineer. Direct your development by specialising in technical, research and professional units, while you blend theory with practice in design and research projects.

WHO IS THIS COURSE FOR?

The Master of Professional Engineering is for you if you want to:

- Gain an internationally recognised qualification to build on your undergraduate engineering or STEM studies
- Change careers and become an engineer
- Move into a different field of engineering.

CHANGE CAREERS AND BECOME AN ENGINEER

Hold a relevant STEM degree and meet the course prerequisites? Through the graduate entry pathway, you'll gain the technical skills and knowledge to become an accredited professional engineer – in just three years.

You may be eligible if you hold a bachelor's degree in one of the following disciplines – as well as studies in mathematics (including linear algebra and calculus), and physics or chemistry:

- Science
- Maths
- Pharmacy
- Biomedical Science
- Computer Science or IT.

COURSE OVERVIEW

This two or three year program – depending on your undergraduate degree – provides the technical knowledge and hands-on experience to practise as a professional engineer.

In it, you'll learn how to apply your engineering knowledge to managing projects in a business environment, while enjoying access to Monash's world-class engineering facilities.

In Professional engineering in organisation and society, you'll learn the skills to step straight into practice. And, through an integrated design unit, you'll tackle a real-world engineering design problem in a professional team environment.

With our research methods unit, you'll pursue an independent, self-guided research review. You'll critically assess the current literature: blending hypotheses with experimental design and investigation.

As a Master of Professional Engineering student, you'll complete the equivalent of 12 weeks of Continuous Professional Development (CPD). Engage in a mix of industry work experience, volunteering, career sessions and field trips, to sharpen your practical toolkit, grow your professional networks – and boost your graduate outcomes.

COURSE STRUCTURE

The Master of Professional Engineering is structured in five parts:

PART	UNIT TYPE	POINTS	OVERVIEW
A	Engineering foundation knowledge and application	48	Develop the foundational skills and knowledge of your chosen engineering discipline.
B	Engineering specialist knowledge and application	48	Gain in-depth knowledge of the engineering specialisation. Develop skills to identify the contextual factors impacting engineering – and apply your understanding.
C	Enhancement learning	24	Develop a multidisciplinary approach in your field of engineering. Expand your knowledge and career options through several units: including innovation, sustainability, and entrepreneurship.
D	Research and knowledge skills	18	Address the challenges and opportunities of using – and evaluating – research evidence in professional practice. And focus your studies on professional inquiry.
E	Professional practice	6	Get ready for the engineering workplace by developing skills in effective team membership and leadership. And learn about the legal responsibilities of an engineer.

Have you received prior engineering qualifications? You may be able to receive credit for Part A to complete your master's degree in just two years. (All students complete parts B, C, D and E.)

WHAT YOU'LL GAIN



PROFESSIONAL ACCREDITATION¹

- This course is designed to meet the Stage 1 competencies for accreditation by Engineers Australia
- Practise as a professional engineer in Australia and other Washington Accord countries
- Chemical, Civil and Mechanical specialisations are fully accredited by Engineers Australia (EA). Electrical and Materials specialisations currently have provisional accreditation.¹



TAKE A PRACTICAL APPROACH TO THE TECHNICAL

- Engage in research and design projects, and explore technical units through a practical lens
- Complete an industry internship through our Industry Experience (IE) program
- Plus, join teams to develop leadership skills and build your professional network.



PURSUE YOUR PASSION AND DESIGN SOLUTIONS

- Specialise in your chosen field and explore streams you're interested in
- You'll unpack real-world issues and put theory to the test
- So you can develop solutions that deliver value and make an impact.

ENTRY REQUIREMENTS	Average requirements ²	Duration (years) ³
Bachelor's degree (or equivalent) with prior studies in mathematics (including linear algebra and calculus), physics and/or chemistry as required by the specialisation chosen for admission.	High Credit (65%)	3
Bachelor's degree (or equivalent) in engineering ⁴	High Credit (65%)	2

WITH THE MASTER OF PROFESSIONAL ENGINEERING, BECOME AN ACCREDITED ENGINEER, PURSUE YOUR PASSION AND BUILD A BETTER TOMORROW.



STUDYING A BACHELOR OF SCIENCE AT MONASH AND LOVE ENGINEERING?

Keep your options open with the Monash Science pathway and be on track to earn a Bachelor of Science AND a Master of Professional Engineering.

Discover what's possible:
 monash.edu/engineering/professional-masters/course-details/graduate-entry#science-pathway



“

I want to deepen my knowledge in chemical engineering as a professional in my career. So far, I've learnt a lot about developing new food products and how to pitch them. This helped me to not only know how to make something, but also to be aware of its impact on the environment and people. If you find your interest and goals, Monash will help you to achieve it.”

RADEN BAGUS MOHAMAD MIFTAHOL ARIFIN
Master of Professional Chemical Engineering

¹ The Master of Professional Engineering has been designed to meet the Stage 1 competencies for accreditation by Engineers Australia (EA). The Faculty has commenced the accreditation process for full recognition by EA and currently has provisional accreditation.
² In equivalent Monash University grading scale terms, a 100% scale where 50% is a pass. Your prior qualification/s must be accredited to the equivalent Australian level specified in the eligibility requirements table.
³ Even if you're eligible for the short course duration, you may elect to complete the longer duration.
⁴ Four-year engineering degree in a discipline as approved by the faculty to be relating to the specialisation within the master's course.

SPECIALISATIONS

A WORLDWIDE UNIVERSITY

RANKED TOP 100

IN 10 ENGINEERING AND TECHNOLOGY SUBJECTS GLOBALLY



CHEMICAL



CIVIL

COMPUTER SCIENCE
AND ENGINEERING

ENVIRONMENTAL SCIENCE



MECHANICAL



METALLURGICAL



MINING AND MINERAL



NANOSCIENCE AND NANOTECHNOLOGY

TRANSPORTATION SCIENCE
AND TECHNOLOGY

WATER RESOURCES

Academic Ranking of World Universities, 2024

BIOLOGICAL ENGINEERING

Turn biochemical breakthroughs into industrial solutions by collaborating with chemists, biologists, and physicists. Gain expertise in synthetic biology, precision fermentation, and biotechnology. Engineer plant-based foods and beverages, refine bioprocesses, or develop next-gen mRNA vaccines and biologic therapies to treat rare diseases. Convert biomaterials into commercial products to solve energy, environmental, and healthcare challenges.

WHAT YOU'LL LEARN

- **Advanced bioprocess technology:** Learn to produce mRNA vaccines, work with nanoparticles, navigate the biotech industry, genetically modified products and more.
- **Biomass and biorefineries:** Explore bioreactors, reaction enzymatics, fermentation and separation processes. While addressing carbon cycles, water sustainability and waste minimisation.
- **Advanced biochemical engineering:** Work with cells, nutrients, and bioreactors to enhance production from engineered cultures and scale up for commercialisation.
- **Advanced biopolymers:** Study lignocellulose fibres, alternative fibre sources, and biopolymers like chitosan. Explore biodegradable alternatives to petroleum-derived products for packaging and fibre production from renewable sources.

CAREERS IN BIOLOGICAL ENGINEERING

Biological engineers are highly sought after in areas like biofuels, precision fermentation, food production and biotechnology. While local demand remains strong, Australia seeks to strengthen its sovereign capabilities to produce biochemicals. You might enter industry to:

- Develop cleaner biofuels to protect the environment
- Save lives through tissue engineering
- Make smart drug delivery even smarter
- Engineer organisms for bio-manufacturing
- Craft new beer flavours and develop plant-based food alternatives
- Work with consulting firms to advise biochemical manufacturers.



SPECIALISATION SNAPSHOT

Available in: Master of Engineering.
Scan to compare streams, units and electives.

Discover more at:

monash.edu/engineering/masters-specialisation/biological

BIORESOURCE ENGINEERING

Work at the cutting edge of renewables, converting bioresources into energy and biomaterials while developing sustainable solutions for food production, packaging, water quality, and environmental remediation. Blending engineering, sustainability, and biological sciences, equipping you with expertise in bioprocessing, renewable energy, and bioproduct manufacturing. Gain the skills to innovate in resource-efficient technologies, evaluate bio-futures opportunities, and understand the economic, social, and environmental benefits of sustainable bioresources.

WHAT YOU'LL LEARN

- In-depth understanding of bioresource systems from agriculture and forestry, through environmental management to renewable energy
- Advanced knowledge of bioprocess engineering, bioenergy production, and sustainable resource management
- Knowledge of emerging technologies including biotechnology, bioinformatics and precision fermentation
- Interdisciplinary insight into bioresource systems, including environmental, economic, and social drivers of demand and change, such as climate change and food security.

CAREERS IN BIORESOURCE ENGINEERING

As industries worldwide seek to adopt more sustainable practices, there's growing demand for professionals who can integrate engineering solutions with biological systems. Bioresource engineers play critical roles in building a greener economy, in environmental stewardship, and in safeguarding public health. You could:

- Design biomass power plants converting renewable materials into bioenergy or biofuels
- Use biological processes to clean up contaminated sites and restore polluted ecosystems
- Optimise bioprocessing systems in the food and beverage or biopharmaceutical industries
- Reduce environmental impact of packaging by enhancing biodegradability
- Develop technologies for sustainable water treatment and conservation
- Innovate more efficient and sustainable agriculture and forestry technologies.



SPECIALISATION SNAPSHOT

Available in: Master of Advanced Engineering.
Scan to compare streams, units and electives.

Discover more at:

monash.edu/engineering/masters-specialisation/bioresource

CHEMICAL ENGINEERING

Use nanomaterials to develop next-gen semiconductors and LEDs, refine lithium-sulphur battery efficiency, or design sustainable packaging. Explore industrial-scale processes that convert raw materials and waste into commercial products to solve energy, environmental and healthcare challenges. Gain expertise in reaction mechanisms and design, process optimisation, nanotechnology, and separation processes to solve chemical engineering problems. You could purify contaminated water with advanced nanomembranes or drive the circular economy toward a zero-waste future.

WHAT YOU'LL LEARN

Gain advanced technical knowledge in reaction engineering, thermodynamics, fluid dynamics, separations, sustainability, and process optimisation. Then sharpen your skills as you choose from one of two streams:

- **Engineering design:** Expand your knowledge of processing in industries like mining, plastics, and petrochemicals. Upskill in techniques to convert raw materials into final products and address sustainability needs.
- **Bioprocessing and food engineering:** Stay updated on breakthroughs in bioprocessing for pharmaceuticals, biotechnology, and food production. Engineer products to improve healthcare and develop sustainable food and beverage technologies.

CAREERS IN CHEMICAL ENGINEERING

Chemical engineers are highly sought after in areas like nanotechnology and renewable energy.

Local demand remains strong as Australia seeks to strengthen its sovereign capabilities in renewable energy, agriculture and food security, or extraction and processing of critical minerals for electronics, energy storage and defence applications. You might enter industry to:

- Improve desalination and water purification using nanomembranes
- Advance production and storage of green hydrogen for vehicles
- Drive climate action and inform policy in the public sector
- Support the renewable energy transition through next-gen products
- Extract critical material more efficiently from mine tailings and e-waste
- Manufacture chemicals from renewable sources.



SPECIALISATION SNAPSHOT

Available in: Master of Professional Engineering.
Scan to compare streams, units and electives.

Discover more at:

monash.edu/engineering/masters-specialisation/chemical

CIVIL ENGINEERING

From smart cities to sustainable sanitation, the future of civil engineering goes beyond steel and concrete. Design innovations that connect smart communities, streamlines transport, and prepare infrastructure to withstand climate change challenges. Design high-capacity transport systems, deploy modular components, and lead major projects. Develop water systems and fast-track construction with robotics. Explore prefabrication construction, geomechanics, and advanced computational methods. Acquire the technical knowledge to design, construct, improve, and lead major infrastructure projects.

WHAT YOU'LL LEARN

Direct your development, grow your knowledge, and expand your capabilities in one of the following streams:

- **Structure:** Explore bridge design, structural analysis, infrastructure dynamics, rehabilitation, and monitoring. Stay ahead with emerging trends in robotic construction, fibre-reinforced composites, and modular design.
- **Transport:** The future of transport is connected, smart, and automated. Learn about intelligent transport systems, advanced traffic management, and transport planning to design smarter, integrated cities.
- **Water:** Gain the knowledge to improve sanitation, monitor pandemics through wastewater, and build sustainable water systems. From flood hydrology to stormwater design and surface water hydrology.
- **Geomechanics:** Understand the interaction between the geomaterials and structural components that make up infrastructure systems. Learn advanced numerical analysis, computational techniques and the latest technologies used in infrastructure projects, including Building Information Modelling, and Virtual and Augmented Reality.

CAREERS IN CIVIL ENGINEERING

Make your mark across a range of industries, including government, infrastructure, traffic and transport, water management, mining, and consulting. Backed by your deep knowledge and practical experience, what you do next is up to you. You might:

- Build sustainable prefabricated housing
- Design earthquake-resistant schools
- Create systems to protect against floods
- Design sanitation systems
- Construct high-speed railways
- Devise solutions for improved traffic flow
- Develop large-scale recycling schemes.



SPECIALISATION SNAPSHOT

Available in: Master of Engineering
& Master of Professional Engineering.
Scan to compare streams, units and electives.

Discover more at:

monash.edu/engineering/masters-specialisation/civil

ELECTRICAL ENGINEERING

As we enter a new era of smart, connected technologies, learn from experienced engineers as you apply theory in hands-on lab sessions and design projects. Develop technologies that shape the future whether it's building affordable health tech, creating efficient electric motors for a renewable future, or designing AI-driven products like optical neuromorphic processors. Deepen your knowledge in signal processing, electronics, electromagnetism, multimedia communications, and smart grids, preparing you to lead the way in a rapidly advancing field.

WHAT YOU'LL LEARN

Pursue your passions and direct your development in these areas:

- **Telecommunications, wireless and optical communications:** Explore next-gen networks, remote data transfer and optical neural networks.
- **Power and smart energy systems:** Learn the latest in green energy production, storage and transmission.
- **Digital and computer systems:** Design experiences that empower users, develop micro-combs or build medical devices to assist surgery.
- **Machine learning and intelligent robotics:** Design faster processors to power AI. Rethink how robots could enhance people's safety or monitor complex tasks in construction.
- **Electronics and hardware design:** Cover advanced uses of components like amplifiers, oscillators, modulators and mixers. Integrate sensors to capture data.
- **Signal processing tools:** Filter unwanted noise – from audio, video, image and MRI signals.

CAREERS IN ELECTRICAL ENGINEERING

As more industries embrace a connected, smart future, the demand for electrical engineers exceeds supply – presenting you with countless career opportunities. You might:

- Develop smart power systems to keep the lights on at home
- Help farmers optimise water usage with automatic irrigation networks
- Design electronic systems for electric vehicles and self-driving cars
- Create advanced robotic systems to support surgeons
- Perfect bionic eyes and ears to restore function
- Design instruments for the healthcare sector
- Develop sensors to connect smart buildings and smart cities.



SPECIALISATION SNAPSHOT

Available in: Master of Engineering
& Master of Professional Engineering.
Scan to compare streams, units and electives.

Discover more at:

monash.edu/engineering/masters-specialisation/electrical

ENERGY TRANSITIONS ENGINEERING

Energy transitions engineering is at the heart of the global movement toward a sustainable future. This specialisation empowers you to understand energy systems at an advanced level, adopt cutting-edge technologies and shape policies that drive the shift away from fossil fuels. Offering an in-depth exploration of renewable energy technologies, energy storage systems, smart grids and energy policies. You'll gain both theoretical expertise and practical skills, ensuring you stay ahead in a rapidly evolving and growing field.

WHAT YOU'LL LEARN

You'll build a solid foundation in energy transitions engineering:

- Develop comprehensive knowledge of smart grid operation.
- Examine biomass engineering, biotechnology and separation processes, focusing on kinetics, catalysis and selectivity.
- Apply industrial ecology to reduce waste, boost profitability and create sustainable biomass materials.
- Integrate solid and fluid mechanics to understand their roles in engineering system performance.
- Learn how to design sustainable, efficient systems for low-energy buildings.
- Discover how thermodynamics drives renewable energy systems, influencing design, efficiency and applications.
- Delve into the materials and principles behind energy production, storage and conversion.

CAREERS IN ENERGY TRANSITIONS ENGINEERING

Your expertise in energy transitions engineering will open doors across diverse sectors, including:

- Developing renewable energy generation and storage projects
- Smart grid design and optimisation
- Energy efficiency and sustainability consulting
- Designing policy for Government and regulatory bodies
- Research and development in clean energy technologies
- Global organisations advancing climate action.



SPECIALISATION SNAPSHOT

Available in: Master of Engineering.
Scan to compare streams, units and electives.

Discover more at:

monash.edu/engineering/masters-specialisation/energy-transitions

MASTER'S DEGREES SPECIALISATIONS



ENGINEERING MANAGEMENT

You've gained engineering expertise – now build the leadership skills to match. Complement your technical knowledge with practical skills to solve complex challenges and deliver large-scale projects. Future-proof your career by learning to manage complex projects, engage stakeholders, support high-performing teams and drive business success. From start-ups to global enterprises, you'll explore the challenges and opportunities businesses face. Build leadership confidence and management competence to take charge and deliver excellence.

WHAT YOU'LL LEARN

Engineering Management is developed with the internationally renowned Monash Business School (MBS). You'll undertake specialist core management units, across three streams:

- **Entrepreneurship:** Want to drive change and shape the future? Learn how to launch a start-up, pitch to investors, secure funding, apply for patents, and connect with industry to bring innovations to life.
- **Project management:** Make an impact from day one. Learn to lead projects, streamline processes, boost productivity and deliver results – on time and on budget.
- **Contemporary management:** Want to forge a more inclusive future and champion corporate social responsibility? Explore topics like sustainability, diversity, international markets and industry trends. Upskill in areas like managing innovation and strategic leadership to help firms remain competitive and agile.

CAREERS IN ENGINEERING MANAGEMENT

From project managers to business leaders, your engineering management skills will set you up for future career success. Lead with confidence, direct strategic decisions and help organisations make a positive impact. You might become a:

- Planning leader
- Site manager
- Technical procurement manager
- Project engineer
- Technical team leader
- Senior manager
- Company director.



SPECIALISATION SNAPSHOT

Available in: Master of Engineering & Master of Advanced Engineering.
Scan to compare streams, units and electives.

Discover more at:

monash.edu/engineering/masters-specialisation/engineering-management

MATERIALS ENGINEERING

Design windows that generate electricity and let light through. Produce replacement bones and custom equipment for athletes using 3D printing. You'll redesign existing materials or create new ones, to make stronger, lighter, cheaper and more sustainable products. Collaborate across disciplines, solve complex problems and enhance material properties to design fit-for-purpose products. Materials engineers prepare and enhance the materials of today to meet the demands of tomorrow.

WHAT YOU'LL LEARN

- **Biomaterials:** Design stronger, lighter knee replacements, detect disease markers, improve biocompatibility in cardiac devices, or combine biomaterials and genomics to repair damaged tissue to improve and save lives.
- **Nanomaterials:** Develop stronger alloys for space, refine nanomedicine for patient care, and use nanoparticle toxicology to aid diagnoses and treatments.
- **Additive manufacturing:** With the rise of additive solutions, you'll investigate how 3D printing and manufacturing are transforming the aerospace, automotive, and biomedical industries.
- **Advanced materials modelling:** Hone your skills material behaviour, using techniques like finite element modelling, atomic structure modelling, AI, and machine learning.
- **Advanced photovoltaics & energy storage:** Want to be part of the energy revolution as we transition away from fossil fuels to renewables? Learn about the latest breakthroughs in solar cells and batteries and explore the many opportunities in this growing area. Hone your skills in material behaviour, using techniques like finite element modelling, atomic structure modelling, AI, and machine learning.

CAREERS IN MATERIALS ENGINEERING

Materials engineers are problem solvers at their core and closely collaborate with other specialists – like chemists, physicists, and biologists – to design fit-for-purpose solutions. Demand for materials engineers remains high, and in this multidisciplinary field, you might:

- Refine tissue engineering to repair damaged organs
- Design smart fabrics that act as a sensor to control vehicles
- Apply 3D bioprinting to generate living tissue for personalised treatments
- Develop lighter, stronger materials for flight and space travel
- Work with bioscientists to detect drugs and toxins
- Create nanoparticles that seek out and destroy cancer.



SPECIALISATION SNAPSHOT

Available in: Master of Engineering & Master of Professional Engineering.
Scan to compare streams, units and electives.

Discover more at:

monash.edu/engineering/masters-specialisation/materials

MECHANICAL ENGINEERING

Develop artificial hearts that save lives. Get up to speed with the latest breakthroughs in robotics, biomedical imaging, additive manufacturing, systems performance analysis and sustainability. Analyse systems to withstand the extremes of space. Improve electric vehicles to accelerate the renewable revolution. Rethink lithium batteries to boost energy density and reduce costs. Want to design high-efficiency, high-performance systems – and make your mark?

WHAT YOU'LL LEARN

- **Mechanical design:** Examine systems design, performance analysis, and integrated design to boost efficiencies, increase performance, and reshape what's possible.
- **AI and manufacturing:** Transform production processes as you learn about the potential and future of advanced robotics, lean manufacturing, and additive manufacturing.
- **Renewable energy and sustainability:** The economy of the future is green, clean, and circular. Investigate what's happening in renewable energy systems, energy efficiency, and sustainability engineering.
- **Environmental durability and biomechanics:** Complement your mechanical engineering specialist skills with a range of topics across a diverse set of disciplines.

CAREERS IN MECHANICAL ENGINEERING

Want to build and refine the technologies of tomorrow? Wherever in the world you wish to work, you might:

- Design high-performance structures to withstand the stressors of space
- Use ultrasound to boost sperm mobility and improve fertility
- Refine service robotics for railways, healthcare, and industry supply chains
- Use 3D reconstruction and printing for Indigenous arts, and work with athletes to develop state-of-the-art sporting equipment
- Create prosthetic limbs and artificial hearts
- Assess infrastructure with mechanical vibration
- Reimagine sustainable energy solutions.



SPECIALISATION SNAPSHOT

Available in: Master of Engineering & Master of Professional Engineering.
Scan to compare streams, units and electives.

Discover more at:

monash.edu/engineering/masters-specialisation/mechanical

MEDICAL ENGINEERING

Embark on a transformative journey to master the intricacies of advanced medical materials engineering, blending cutting-edge technologies with biomedical science. Drive a revolution in healthcare through innovation in biomaterials and state-of-the-art manufacturing. Graduates will emerge with a comprehensive understanding of biomaterials, biomechanics and cutting-edge medical technologies, equipping them with knowledge and skills to address complex challenges in healthcare and medicine.

WHAT YOU'LL LEARN

Explore the next generation of biomedical applications and technologies, including:

- In-depth knowledge of biomaterials, biomechanics, nanomaterials, and tissue engineering
- Insights into emerging biomedical technologies and precision engineering in healthcare
- Understanding biopharmaceuticals and targeted delivery strategies
- Proficiency in developing advanced polymeric materials and expertise in additive manufacturing
- Key skills and frameworks for conducting cutting-edge biomedical research.

CAREERS IN MEDICAL ENGINEERING

With rapid advancements in healthcare tech, there's a growing demand for professionals bridging engineering and medicine. Opportunities include:

- Designing next-gen biomaterials for implants and prosthetics
- Developing drug encapsulation and targeted delivery methods
- Contributing to personalised medicine breakthroughs with nanomaterials and tissue engineering
- Advancing additive manufacturing for medical use
- Optimising processes for advanced medical materials.

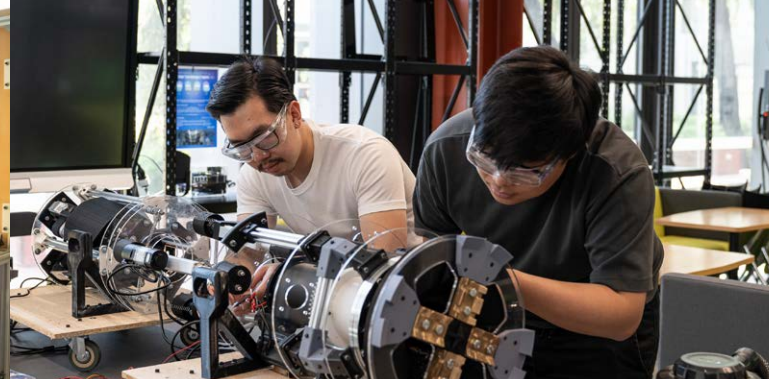
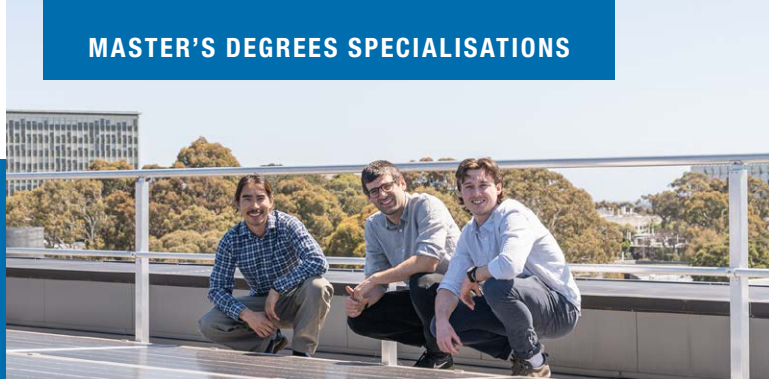


SPECIALISATION SNAPSHOT

Available in: Master of Advanced Engineering.
Scan to compare streams, units and electives.

Discover more at:

monash.edu/engineering/masters-specialisation/medical



POWER SYSTEMS ENGINEERING

Manage the nerve centres of local, national and international power networks. Integrate new technologies and support innovation across critical infrastructure. Equipping you with the essential knowledge necessary for the development of power systems in emerging renewable energy systems. Providing you with the knowledge and skills to address complex challenges in modern electrical power systems.

WHAT YOU'LL LEARN

- An understanding of the thermodynamics of energy generation, and principles of energy storage and conversion
- The ability to analyse power systems and apply methodologies to compare existing and alternative energy sources and networks
- A comprehensive understanding of smart grids and intelligent control and how grids can be operated and protected to improve sustainability and efficiency
- An applied knowledge of the systems needed to create low-energy, sustainable buildings, including passive solar design, energy efficient heating and cooling as well as combined heat and power
- An understanding of the regulatory environment for power production, distribution and system management.

CAREERS IN POWER SYSTEMS ENGINEERING

Power systems engineers play a crucial role in designing, maintaining, optimising, and upgrading electrical systems. Graduates could:

- Design and optimise power distribution systems
- Introduce renewable energy sources into existing systems
- Upgrade electrical substations
- Develop protection schemes for power systems to safeguard against faults and disruptions
- Contribute to the development and implementation of smart grid technology
- Lead asset redevelopment and upgrading projects
- Advise clients on energy efficient practices and technologies
- Design and manage implementation of generators, transformers and transmission lines.



SPECIALISATION SNAPSHOT

Available in: Master of Engineering & Master of Advanced Engineering.
Scan to compare streams, units and electives.

Discover more at:

monash.edu/engineering/masters-specialisation/power-systems

RENEWABLE ENERGY ENGINEERING

Tackle one of the world's biggest challenges and lead the change towards a sustainable, resilient and energy-efficient future. Renewable Energy Engineering integrates principles of energy production and conversion, electrical and mechanical engineering and materials science with environmental impact assessment, policy and economics, project management, to equip students with a holistic understanding of designing, implementing, and managing sustainable energy systems.

WHAT YOU'LL LEARN

- Understanding of the physics and thermodynamics of energy production, storage and conversion
- Knowledge of methods, materials and technologies for capturing and storing energy
- Ability to assess, and apply methodologies to create comparisons between existing and renewable energy alternatives
- The ability to apply industrial ecology and circular economy principles to utilise by-products from bioprocessing and other manufacturing for energy production
- Applied knowledge of systems needed to create low-energy, sustainable buildings, including passive solar design, energy efficient heating and cooling, and combined heat and power
- A comprehensive understanding of smart grids and their intelligent control and protection
- An understanding of the regulatory environment for energy production and distribution.

CAREERS IN RENEWABLE ENERGY ENGINEERING

Renewable energy engineers are vital to the changing landscape of energy production, storage and utilisation. Organisations across almost every industry sector are seeking specialists to lead their transition to renewable energy.

- Pioneer the integration of new technologies into complex multidisciplinary projects
- Develop advanced energy storage solutions
- Implement smart grid technologies
- Lead energy asset redevelopment and upgrading projects
- Provide efficient energy solutions to remote communities
- Conduct environmental impact assessments ensuring compliance with sustainability standards and regulations.



SPECIALISATION SNAPSHOT

Available in: Master of Engineering & Master of Advanced Engineering.
Scan to compare streams, units and electives.

Discover more at:

monash.edu/engineering/masters-specialisation/renewable-energy

ROBOTIC CONSTRUCTION ENGINEERING

Revolutionise the construction industry with expertise in automation, smart building technologies and artificial intelligence. Develop innovative, sustainable and cost-effective methods, improving efficiency, safety and precision in building processes. Built on a unique fusion of engineering and construction principles with cutting-edge digital technologies, with the aim of shaping interdisciplinary professionals capable of leading the transformation of the construction sector.

WHAT YOU'LL LEARN

- Proficiency in designing, programming, and implementing robotic systems for construction tasks
- Understanding of the application of AI algorithms for decision-making, optimisation, and adaptive learning in construction processes
- Ability to develop and apply computer vision techniques for perception, sensing, and interpretation of the construction environment
- In-depth knowledge of structural engineering principles to ensure robotic construction methods align with safety and stability requirements
- Experience in creating and managing digital twins to simulate and analyse construction projects in a virtual environment
- The ability to work and communicate technical concepts collaboratively with professionals from diverse fields including architecture, civil engineering and technology.

CAREERS IN ROBOTIC CONSTRUCTION ENGINEERING

Robotic construction engineers are changing the way we design, build and develop new infrastructure projects. You could:

- Implement new technologies into complex, multidisciplinary projects
- Design new processes and workflows to increase construction efficiency
- Analyse fabrication and construction environments and identify robotic and automated innovations to enhance human safety
- Apply smart logistics principles to supply and distribution models
- Introduce sustainable processes into systems for manufacturing construction components
- Train local operators on the use and maintenance of robotic equipment
- Lead projects to manage and upgrade assets
- Deploy robotics into developing nations to support humanitarian efforts.



SPECIALISATION SNAPSHOT

Available in: Master of Advanced Engineering.
Scan to compare streams, units and electives.

Discover more at:

monash.edu/engineering/masters-specialisation/robotic-construction

ROBOTICS ENGINEERING

Equip yourself to drive innovation and revolutionise industries with skills and experience in automation, robotics and AI. Drive technological advances and lead groundbreaking projects. Integrating fundamental principles of robotics and automation, including mechatronics and control systems, with advanced concepts such as the use of artificial intelligence, human-robot interaction, machine learning and computer vision. Gain hands-on experience to apply your theoretical knowledge in real-world scenarios and foster creativity and problem solving skills that will be successful in this dynamic and multidisciplinary field.

WHAT YOU'LL LEARN

- Fundamental knowledge of advanced robotic systems including machine component design, kinematics, statics and dynamics
- Expertise in designing stable control systems and integrating mechanical and electronic components
- Skills in developing autonomous systems with sensing, enabling robots to operate independently and make real-time decisions
- Ability to design human-friendly interfaces, considering ethical and social implications of robotic technologies
- Knowledge of computer vision for robotic perception and sensors for navigation
- Proficiency in programming and integrating artificial intelligence for enhanced robotic capabilities.

CAREERS IN ROBOTICS ENGINEERING

Robotics is impacting almost every industry on earth, changing the way businesses operate, and highlighting a need for specialists in this area.

- Develop an integrated robotic system for industrial automation, incorporating vision systems and machine learning in manufacturing and logistics
- Lead projects involving the coordination of a swarm of robots for environmental monitoring or underwater exploration
- Design robotic prosthetics to enhance the mobility and function for people with limb dysfunctions
- Work on the development of robotic systems for precision agriculture, including autonomous tractors, robotic harvesters, or drones for crop monitoring
- Contribute to the development of a robotic surgery platform, integrating advanced sensing technologies and precise control mechanisms.



SPECIALISATION SNAPSHOT

Available in: Master of Advanced Engineering.
Scan to compare streams, units and electives.

Discover more at:

monash.edu/engineering/masters-specialisation/robotics



SMART MANUFACTURING ENGINEERING

Play your part in transforming industrial processes, reducing costs and improving quality using the state-of-art tools such as robotics, machine learning, artificial intelligence and big data and advanced manufacturing technologies such as 3D printing. Contribute to the evolution of manufacturing ecosystems, fostering innovation and competitiveness. Integrate advanced technologies into manufacturing processes and explore how these can optimise production systems, improve efficiency and drive innovation.

WHAT YOU'LL LEARN

- Understanding of system design, including mechanical design, material selection, and control systems
- Fundamental knowledge of advanced robotic systems including design, kinematics, statics and dynamics
- The ability to apply lean manufacturing processes to deliver sustainable competitive advantage
- Practical knowledge of sensing technologies to gather real-time information
- Critical understanding of the principles and processes of systematic risk management
- Overview of machine learning and implementation it into the manufacturing process.

CAREERS IN SMART MANUFACTURING ENGINEERING

Smart manufacturing has been called the next phase of the industrial revolution, and organisations are actively seeking people that can keep their business at the forefront of these changes. You could:

- Design and implement digital and smart manufacturing in conventional manufacturing establishments
- Design and implement a smart factory with connected sensors manufacturing
- Implement a system that predicts manufacturing equipment failures based on data analytics, enabling proactive maintenance
- Deploy a computer vision and machine learning-based inspection system to detect defects and maintain production quality
- Implement a digital twin virtual replica of a production line to analyse and enhance efficiency
- Develop an AI-driven supply chain platform for forecasting demand and coordinating logistics to enhance efficiency and reduce costs
- Introduce sustainable manufacturing processes into established systems.



SPECIALISATION SNAPSHOT

Available in: Master of Engineering & Master of Advanced Engineering.
Scan to compare streams, units and electives.

Discover more at:
monash.edu/engineering/masters-specialisation/smart-manufacturing

TELECOMMUNICATIONS ENGINEERING

In telecommunications engineering, you'll explore the intricacies of information flow across modern telecommunication systems, shaping the future of global connectivity and redefining how the world communicates. This includes the internet and future wireless networks. You will explore advanced electromagnetics and optical communication while enhancing your knowledge of signal processing. In addition, you will further develop your understanding of crucial system design principles, implement signal processing algorithms in state-of-the-art facilities, and gain experience.

WHAT YOU'LL LEARN

- The ability to model, analyse and predict the performance of telecommunications networks
- Insights into electromagnetic interference and electromagnetic compatibility
- The ability to analyse and design wireless and optical communications systems for local-area, satellite, and long-haul transcontinental networks
- The ability to employ dynamic system management principles to address challenges posed by new telecommunications systems
- The ability to apply, and leverage innovative technologies for enhancing aspects of telecommunications systems
- Insights into the nature and limitations of processing and storing media for communications
- A strategic mindset to assist in aligning with contemporary standards and industry demands.

CAREERS IN TELECOMMUNICATIONS ENGINEERING

As new communication technologies emerge and our use of telecommunications changes rapidly, the need for specialised telecommunications engineers continues to grow, with organisations seeking engineering leaders to solve complex challenges. You could:

- Manage a 'smart city' connectivity project, creating an integrated communications network supporting smart grids, intelligent transportation systems and 'internet of things' devices
- Enhance the security and resilience of telecommunications networks by developing advanced encryption algorithms, intrusion detection systems, and secure protocols to protect against cyberattacks
- Work on research and development for next-generation wireless technologies beyond 5G, like terahertz communication and non-terrestrial networks
- Manage design and roll-out of network optimisation and enhance telecommunications sustainability exploring energy-efficient technologies and renewable energy sources.



SPECIALISATION SNAPSHOT

Available in: Master of Advanced Engineering.
Scan to compare streams, units and electives.

Discover more at:
monash.edu/engineering/masters-specialisation/telecommunications

URBAN SYSTEMS ENGINEERING

Cities and people are changing, so are the systems we need to manage operations and services of the urban environment. In urban systems engineering you'll investigate new ways of managing water and traffic networks, as well as the infrastructure they support. Further develop your understanding of operations systems, as well as best-practice design principles to support delivery and implementation. Take the lead in planning our cities and systems of the future to create long-lasting impacts in the urban landscape.

WHAT YOU'LL LEARN

- Holistic perspective on water and wastewater systems within urban environments, enabling the identification of opportunities for optimisation infrastructure management
- A deeper understanding of the principles of resource conservation and environmental responsibility, crucial in urban development
- Insights into the relationship between vehicles, drivers, and road environments and how to facilitate the development of traffic management strategies for urban infrastructure planning
- The ability to apply, and leverage innovative technologies and tools in the planning, construction, and operation of urban infrastructure projects, ensuring efficiency, resilience, and sustainability
- A strategic mindset to assist in aligning contemporary standards and industry demands.

CAREERS IN URBAN SYSTEMS ENGINEERING

Urban systems engineers are key to shaping cities, towns, and rural communities. They future-proof developments and ensure projects meet the needs of the local population. Both government and industry recognise the need for specialists to lead and collaborate.

- Manage large infrastructure programs
- Develop new systems to manage traffic flow
- Design people-centric systems to meet increases in population density
- Design and develop new water treatment processes
- Implement sustainable practices into large scale developments
- Install new information systems to monitor and evaluate urban environments
- Conduct road transport modelling to influence major development projects.



SPECIALISATION SNAPSHOT

Available in: Master of Advanced Engineering.
Scan to compare streams, units and electives.

Discover more at:
monash.edu/engineering/masters-specialisation/urban-systems

RESEARCH WITH IMPACT

Make a real difference and solve global challenges with a PhD or masters-by-research degree. You'll collaborate with prominent researchers, lead pioneering investigations and broaden your career horizons.

JOIN THE NEXT GENERATION OF RESEARCH LEADERS

Pursue a graduate research degree to expand your expertise in a world-class research environment. You'll connect with world-leading academics and industry partners to make a positive impact on society.

Help address the UN Sustainable Development Goals and solve issues in a stimulating, supportive environment across STEM areas such as climate change, transport congestion, water supply security, sustainable energy, artificial intelligence and robotics.

BE MENTORED BY EXPERT SUPERVISORS

Accelerate your growth with mentoring from at least two active researchers who are leaders in their field. You'll further your research – and deepen your impact – through expert supervision and ongoing professional development.

Our supervisors don't settle for the status quo. And neither will you. Together, you'll strive for excellence, question assumptions and help solve the greatest challenges of our age.

COLLABORATE WITH INDUSTRY – CHANGE THE WORLD

Collaboration is at the core of all our research. It's how we spark innovation through interdisciplinary insights and dynamic industry partnerships.

At Monash, you'll work with commercial businesses and connect with leading research institutes to investigate real-world challenges. Go hands-on in advanced facilities and network with our far-reaching community to leave a sustainable legacy for future generations.

EXPAND AND STRENGTHEN YOUR CAREER OPTIONS

With a graduate research degree, you'll open doors in industry, academia and beyond. You'll gain diverse, in-demand and transferable skills like leadership, project management, data analytics and digital processing.

We prepare you for a rewarding career, with a mindset geared towards calculated risk-taking, entrepreneurship and ethical practice.

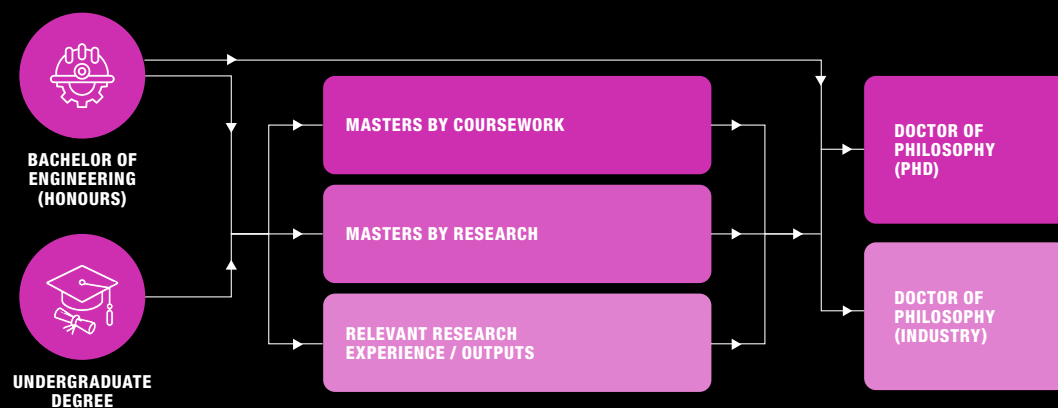
Where you go from there is up to you. Our alumni have become research leaders at Ford Motor Company, Microsoft, Rio Tinto, Procter & Gamble, Harvard University and Sony Pictures.

SUPPORT YOUR STUDY WITH RESEARCH SCHOLARSHIPS

To nurture outstanding academic achievement, Monash University offers several scholarship programs to help cover tuition fees, stipends and relocation allowances.

PATHWAYS TO PHD

See how you can start your PhD journey from a range of STEM degrees.



200+
PROJECTS

Choose from over 200 diverse research projects across STEM fields

1000+
STUDENTS

Collaborate with over 1,000 passionate and talented PhD students

#59
WORLDWIDE

Get ahead at one of the world's top universities for engineering and technology
THE World University Subject Rankings, 2025

RESEARCH THEMES

Work alongside leading STEM researchers as you investigate insights, follow breakthroughs, pioneer research – and transform our future.

CHEMICAL AND BIOLOGICAL ENGINEERING

- Biotechnology
- Food
- Modelling
- Nanomaterials
- Fuels and Energy
- Membranes
- Waste processing.

CIVIL AND ENVIRONMENTAL ENGINEERING

- Environment, Energy and Resources Modelling
- Simulation, Data and AI
- Sensing and Automation Technologies
- Smart, Safe and Sustainable Transport
- Sustainable and Resilient Infrastructure
- Water in a Changing Environment.

ELECTRICAL AND COMPUTER SYSTEMS ENGINEERING

- Wireless Telecommunications
- Optical Communications and Networking
- Internet of Things
- Smart Power Systems
- Robotics and Artificial Intelligence
- Biomedical Engineering
- Electromagnetics and Electronics.

MATERIALS SCIENCE AND ENGINEERING

- Additive Manufacturing
- Biomaterials and Tissue Engineering
- Functional and Energy Materials
- Metals and Alloys
- Polymers and Composites
- Materials Theory, Modelling and Characterisation.

MECHANICAL, AEROSPACE, ROBOTICS AND MECHATRONICS ENGINEERING

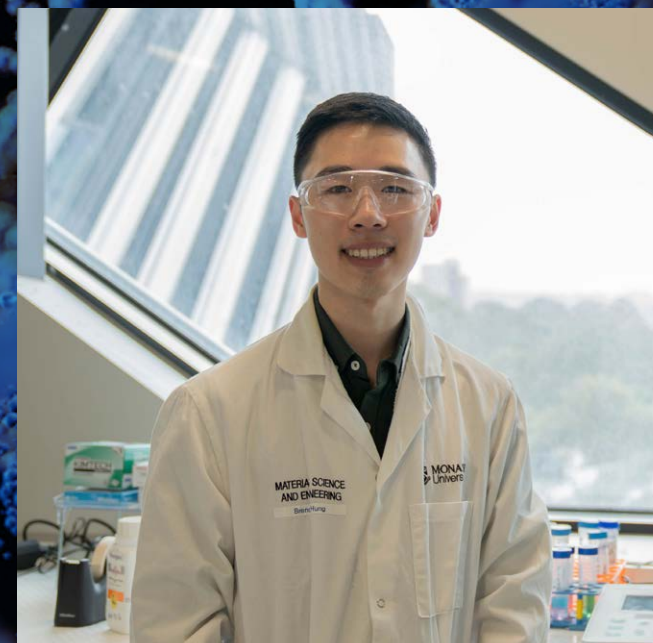
- Advanced Manufacturing
- Micro/Nano Engineering
- Robotics and Control
- Solid Mechanics
- Thermofluids
- Biomedical Engineering.

SCHOOL OF ENGINEERING, MONASH MALAYSIA

- Energy Sustainability
- Materials and Nanotechnology
- Medical Engineering and Biological Sciences
- Smart Industry and Living
- Computational and Intelligent systems
- Critical Infrastructure
- Waste and Environment
- Intelligent Lighting.

Learn more about the research themes available:

monash.edu/engineering/our-research/research-themes



My research is about creating new in vitro models to gain a deeper understanding about colorectal cancer (CRC). I am developing new polymeric hydrogels to support the growth of 'mini guts', otherwise known as intestinal organoids, which will be used to investigate very aggressive CRC behaviours. We hope to better understand how the crosstalk between different cells and their environment play into the development of colorectal cancer."

BRENDAN HUNG

PhD, Materials Science
Ezio Rizzardo Polymer Scholarship,
Australian Academy of Technology and Engineering



READ BRENDAN'S STORY
monash.edu/engineering/change-makers/brendan

GRADUATE RESEARCH

ON CAMPUS
Clayton
OFF CAMPUS
Clayton

2 years full-time
(or part-time equivalent)

COURSE CODE: E7003
CRICOS: 117719M

AREAS OF RESEARCH

Pursue your research and expand your learning in your chosen discipline:

- Chemical and biological engineering
- Civil, environmental and resources engineering
- Electrical, computer systems and biomedical engineering
- Materials science and engineering
- Mechanical, aerospace, robotics and mechatronics engineering.

Refer to **page 27** for the wide-range of research themes you can get involved in from these areas..



Discover more at:
monash.edu/engineering/phd



HOW TO APPLY FOR GRADUATE RESEARCH DEGREES

For more details on how to apply, submit an expression of interest and learn more information about research scholarships:

monash.edu/engineering/graduate-research/how-to-apply

MASTER OF ADVANCED STUDY (ENGINEERING RESEARCH)

Designed for ambitious thinkers ready to tackle real-world challenges through original research and advanced inquiry.

WHO IS THIS COURSE FOR?

The Master of Advanced Study (Engineering Research) is for you, if you:

- Have already completed a bachelor degree of at least four years in a relevant discipline
- Want to advance your research training and methodologies
- Are seeking a pathway to PhD or leadership.

COURSE OVERVIEW

The Master of Advanced Study (Engineering Research) offers a unique opportunity to delve deeply into a specific technical challenge or innovation area. This program emphasises independent inquiry, critical thinking, and problem-solving.

This two-year program is designed for those looking to develop advanced research skills and make a significant contribution to their discipline and community. Combining coursework with independent research, this degree equips graduates with the skills and knowledge to tackle complex engineering challenges.

Guided by expert academic supervisors, students explore a research topic in depth, culminating in a thesis assessed by leading specialists in the field. With access to Monash's world-class research facilities and a dynamic academic environment, graduates gain the expertise to drive impactful advancements in engineering.

WHAT YOU'LL GAIN

- **Drive innovation and your career opportunities:** Lead R&D, develop patents, new technologies, or policy reforms. This research-focused degree will equip you for a successful career for roles in research-intensive industries, government think-tanks, and startups.
- **Make an impact solving real-world problems:** Learn advanced research training and methodologies to address global challenges you're passionate about like climate change, AI ethics, public health, or infrastructure resilience.

COURSE STRUCTURE

UNIT TYPE	OVERVIEW
COURSEWORK	Successfully complete the required coursework units in the first year of enrolment.
RESEARCH	Carry out a program of research on an agreed topic approved by the faculty in your chosen discipline for a specified period, including attending and/or presenting at seminars and other related activities as indicated by the faculty.
THESIS	Submit for assessment a thesis of not more than 30,000 words on the program of research which meets the requirements of the examiners.

ENTRY REQUIREMENTS	Average requirements ¹	Duration (years)
A four year bachelor's degree (or equivalent) in a relevant discipline which includes a research thesis or project; or A master's degree in a relevant discipline which includes a research thesis or project equivalent to at least 25 percent of one year of full-time study. ²	Upper H2B (65% or above)	2

¹ In equivalent Monash University grading scale terms, a 100% scale where 50% is a pass. Your prior qualifications must be accredited to the equivalent Australian level specified in the eligibility requirements table.
² Refer to monash.edu/graduate-research/study/apply/admission-criteria for detailed entry requirements information.

MASTER OF ENGINEERING SCIENCE (RESEARCH)

Delve deeply into engineering challenges and develop solutions for the future with a Master of Engineering Science (Research).

WHO IS THIS COURSE FOR?

The Master of Engineering Science (Research) is for you if you:

- Have already completed a 4 year bachelor degree in a relevant field
- Want to undertake independent research to investigate problem
- Want to achieve a research masters degree in two years.

COURSE OVERVIEW

During your candidature of up to two years, you'll develop specialised knowledge and skills in your chosen research area. You'll have the opportunity to address national issues, tackle global challenges and improve the way of life in communities.

You'll lead an independent investigation of a research problem under the supervision of leading researchers in the field. It is expected the research you undertake will make a contribution to your chosen discipline and yield a thesis for examination.

WHAT YOU'LL GAIN

Expand your career options.

You'll obtain transferable skills such as leadership, project management and data analytics that are highly desired by employers.

Become an expert in your research field.

As an engineering researcher you'll develop specialised knowledge in your chosen field, enabling you to develop solutions for society's global challenges.

COURSE STRUCTURE

UNIT TYPE	OVERVIEW
RESEARCH	Carry out a program of research on an agreed topic approved by the faculty in your chosen discipline for a specified period, including attending and/or presenting at seminars and other related activities as indicated by the faculty.
THESIS	Submit for assessment a thesis of not more than 50,000 words on the program of research which meets the requirements of the examiners. Submission of a thesis including published works may be permitted.

ENTRY REQUIREMENTS	Average requirements ¹	Duration (years)
A four year bachelor's degree (or equivalent) in a relevant discipline which includes a research thesis or project; or A master's degree in a relevant field which includes a research thesis or project equivalent to at least 25 percent of one year of full-time study. ²	Upper H2B (65% or above)	2

¹ In equivalent Monash University grading scale terms, a 100% scale where 50% is a pass. Your prior qualifications must be accredited to the equivalent Australian level specified in the eligibility requirements table.
² Refer to monash.edu/graduate-research/study/apply/admission-criteria for detailed entry requirements information.

ON CAMPUS
Clayton, Malaysia
OFF CAMPUS
Clayton

2 years full-time
(or part-time equivalent)

COURSE CODE: 3292
CRICOS: 041059G

AREAS OF RESEARCH

Pursue your research and expand your learning in your chosen discipline:

- Chemical and biological engineering
- Civil, environmental and resources engineering
- Electrical, computer systems and biomedical engineering
- Materials science and engineering
- Mechanical, aerospace, robotics and mechatronics engineering.

Refer to **page 27** for the wide-range of research themes you can get involved in from these areas.



Discover more at:
monash.edu/engineering/phd



My research is focused on understanding some of the mechanisms involved in a particular type of extreme wear - galling. With the aim to develop a new iron-based alloy with exceptional galling resistance for extreme environments, such as valve surfaces in a nuclear reactor."

KIT KIRBY

Industry PhD with Rolls-Royce

GRADUATE RESEARCH

 **ON CAMPUS**
Clayton, Malaysia
OFF CAMPUS
Clayton

 3–4 years full-time
(or part-time equivalent)

COURSE CODE: 3291
CRICOS: 041044D

AREAS OF RESEARCH

Pursue your research and expand your learning in your chosen discipline:

- Chemical and biological engineering
- Civil, environmental and resources engineering
- Electrical, computer systems and biomedical engineering
- Materials science and engineering
- Mechanical, aerospace, robotics and mechatronics engineering.

Refer to **page 27** for the wide-range of research themes you can get involved in from these areas.



Discover more at:
 monash.edu/engineering/phd



APPLICATION DATES FOR GRADUATE RESEARCH SCHOLARSHIPS:

- **International students:**
31 March and 31 August
- **Domestic students:**
31 May and 31 October

 monash.edu/engineering/graduate-research-scholarships

DOCTOR OF PHILOSOPHY (PHD)

Make a real difference and solve global challenges with a PhD. Join the next generation of research leaders and broaden your career horizons.

WHO IS THIS COURSE FOR?

A Doctor of Philosophy (PhD) at Monash Engineering is for you, if you:

- Have already completed a 4 year bachelor degree or masters in a relevant field
- Have a strong interest in STEM research and driven to pursue a passion in a world-class research environment
- Desire to greatly expand career options throughout academia and industry.

COURSE OVERVIEW

The Monash PhD offers you a stimulating, supportive and professional environment in which to explore engineering challenges and develop solutions for the future.

At the core of this program is the completion of a substantial research thesis based on a research project carried out under the supervision of a team of world-leading researchers.

You'll undertake extensive, independent research on a topic that makes an original and substantial contribution to your discipline.

In your research journey, you will also acquire the necessary skills and professional attributes to make an enduring impact on academia, industry, government, or community.

WHAT YOU'LL GAIN

Advance your career.

You'll gain diverse, in-demand and transferable skills – including research, analytical, and project management, leadership and interpersonal communication skills and the ability to solve intricate business problems. Our PhD graduates have become research and engineering leaders across the world in both industry and academia.

Become an expert in your research field.

The national and international career possibilities are not only exciting but also diverse.

COURSE STRUCTURE

UNIT TYPE	OVERVIEW
RESEARCH	Carry out a program of research on an agreed topic approved by the faculty in your chosen discipline for a specified period, including attending and/or presenting at seminars and other related activities as indicated by the faculty.
THESIS	Submit for assessment a thesis of not more than 80,000 words on the program of research which meets the requirements of the examiners. Submission of a thesis including published works may be permitted.

ENTRY REQUIREMENTS	Average requirements ¹	Duration (years)
A four year bachelor's degree in a relevant discipline, which includes a research component or Honours year, or equivalent.	H1 ² or minimum of H2A or equivalent (70% or above)	3–4
A master's degree in a relevant discipline that includes a significant research component (at least 25% of one full time equivalent year of work) or research thesis.	H1 ² or minimum of H2A or equivalent (70% or above)	3–4

¹ In equivalent Monash University grading scale terms, a 100% scale where 50% is a pass. Your prior qualifications must be accredited to the equivalent Australian level specified in the eligibility requirements table.
² H1 is for scholarships and is not the minimum entry requirement. Scholarships are awarded based on academic merit with priority given to students with a qualification equivalent to a Monash H1 or higher.

INDUSTRY DOCTORAL PROGRAM

Elevate your expertise in a real-world setting.

Want to deliver world-class research that benefits the economy and broader society – while you earn a PhD? With our industry doctoral program, you can. You'll be immersed in industry: embedded in a business and designing solutions to real commercial challenges – all while growing your career.

WHO IS THIS COURSE FOR?

The Doctor of Philosophy (Industry PhD) is for you if you:

- Have already completed a 4 year bachelor degree in a relevant field
- Want to work with industry to design highly commercial solutions.

As an Industry Doctoral Program candidate, you'll be either:

- A new or existing doctoral candidate looking to partner with industry to help solve their problems.
- An employed engineer, seeking a way to upskill with a PhD advancing your career and supporting the needs of your employer.

COURSE OVERVIEW

This innovative program strikes a balance between academic rigour and industry priorities, with research projects industry-scoped and led. While still having access to the world-leading researchers and facilities at Monash, you'll spend a substantial part of your Industry Doctoral Program embedded with the industry partner to deliver world-class, impactful research that benefits industry, the economy and broader society.

Prioritising professional training rather than coursework, you'll take a portfolio-based approach to research while building towards an innovation report (exegesis).

WHAT YOU'LL GAIN

Advance your career Whether with one of our industry partners or your existing employer, you'll emerge with the practical skills and technical knowledge businesses require.

Directly impact industry You'll work not alongside industry, but within it. Apply your skills to understand and solve real-word commercial problems – in real-world business timeframes.

COURSE STRUCTURE

UNIT TYPE	OVERVIEW
RESEARCH	Carry out a program of research on an agreed topic approved by the faculty in your chosen discipline for a specified period, including attending and/or presenting at seminars and other related activities as indicated by the faculty.
PORTFOLIO AND INNOVATION REPORT (EXEGESIS)	Submit for assessment a portfolio and an innovation report (exegesis) of between 30,000 and 50,000 words on the program of research which meets the requirements of the examiners.

ENTRY REQUIREMENTS	Average requirements ¹	Duration (years)
A four year bachelor's degree in a relevant discipline, which includes a research component or Honours year, or equivalent.	H1 ² or minimum of H2A equivalent (70% or above)	3–4
A master's degree in a relevant discipline that includes a significant research component (at least 25% of one full time equivalent year of work) or research thesis.	H1 ² or minimum of H2A equivalent (70% or above)	3–4

¹ In equivalent Monash University grading scale terms, a 100% scale where 50% is a pass. Your prior qualifications must be accredited to the equivalent Australian level specified in the eligibility requirements table.
² H1 is for scholarships and is not the minimum entry requirement. Scholarships are awarded based on academic merit with priority given to students with a qualification equivalent to a Monash H1 or higher.

 **ON CAMPUS**
Clayton
OFF CAMPUS
Clayton

 3–4 years full-time
(or part-time equivalent)

DEGREE AWARDED
Doctor of Philosophy (Industry)

COURSE CODE: E8011
CRICOS: 108333D

AREAS OF RESEARCH

Pursue your research and expand your learning in your chosen discipline:

- Chemical and biological engineering
- Civil and infrastructure
- MedTech, Electrical and computer systems engineering
- Materials science
- Mechanical, aerospace, and smart manufacturing engineering
- Natural resources, environment and sustainability.

Refer to **page 27** for the wide-range of research themes you can get involved in from these areas.



Discover more at:
 monash.edu/industry-doctoral-program

LIVING IN MELBOURNE

Melbourne is a vibrant, multicultural city. You'll explore cultural festivities, attend international sporting events, dine at trendy cafés and restaurants, relax at parks and beaches, and experience an eclectic mix of music and arts.

As one of the world's most liveable cities, you benefit from excellence in public transport and healthcare, as well as opportunities for casual work while studying.

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 – our Residential Services support team will help you through the application and transition process.

If you prefer a little more independence, you can stay at a range of off-campus accommodation options too. For more information, visit:

monash.edu/accommodation

COST OF LIVING

Living in Melbourne is affordable if you plan ahead and know what your needs will be. 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 LIFE AT MONASH

CLAYTON CAMPUS

You'll find Monash's Clayton campus twenty kilometres from the centre of Melbourne. It's home to a vibrant research, technology and manufacturing precinct. Plus, you'll have access to first-rate sporting facilities, shops, a student centre, libraries, a post office, banks, medical services and religious centres.

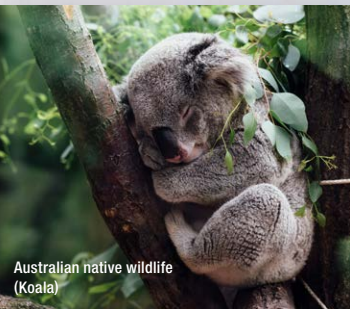
monash.edu/study/student-life

SUPPORT SERVICES

We 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
- e-Research services
- Family support
- Monash Connect
- Skills Essentials seminars
- Wellbeing.

monash.edu/students/support



Australian native wildlife (Koala)



MCG



Great Ocean Road



“

My research focuses on medical devices for patients with complex heart failure. I work with benchtop models, virtual fitting techniques, and computational simulations (CFD and FSI) to assess existing technologies and explore how we can improve them.

I'm chasing impact. I want to work on bold, unconventional ideas that make a meaningful difference in people's lives. Ideally, I'll be part of projects that push the boundaries of MedTech and help more people live longer, healthier lives.”

NINA LANGER

PhD Candidate, Cardiovascular Engineering



READ NINA'S STORY

monash.edu/engineering/change-makers/nina-langer



MONASH
University

MONASH ENGINEERING

monash.edu/engineering

FACEBOOK

MonashEngineers

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@monashengineering

X

@monashengineers

LINKEDIN

linkedin.com/school/monash-engineering

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TIKTOK

@monashengineering



FUTURE STUDENTS

monash.edu/engineering/future-students

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