

Course progression map for 2027 commencing students

This progression map provides advice on the optimal sequencing of units and guidance on planning unit enrolment for each semester of study in conjunction with the required units outlined in the course 'Requirements' section of the [Handbook](#). Please note that the map may be updated to reflect changes to course requirements. Be sure to review it for the latest information before re-enrolling. Last updated: 29 September 2026

E6017 Master of Advanced Engineering

There are two streams in this program:

- Industry experience - See below
- Research thesis - See Page 2

Industry experience

Enrolling in the industry experience units is subject to the availability of placements and to meeting the recruitment requirements of the placement**

YEAR 1 Semester 1	ENG5001 Advanced data analytics for engineers	ENG5200 Engineering project risk management	ENG5100 Professional engineer in organisation* and society or Specialist study unit	Specialist study unit
YEAR 1 Semester 2	ENG5410 Research practice in engineering	Specialist study unit	Specialist study unit or ENG5100 Professional engineer in organisation and society*	Specified elective unit
YEAR 2 Semester 1	ENG5008 Industry experience or ENG5009 Industry experience**	ENG5220 Organising the project function	Specialist study unit	Specialist study unit
YEAR 2 Semester 2	ENG5008 Industry experience or ENG5009 Industry experience**	ENG5221 Project as a social system	Specialist study unit	Specified elective unit

 Part A. Core studies
 Part C. Advanced practice

 Part B. Specialist studies
 Part D. Specified elective studies

Please contact [Course Advisers](#) if you need enrolment advice.

* **ENG5100**: You can take ENG5100 in either Semester 1 or Semester 2. If you choose to take ENG5100 in Semester 2, a specialist study unit in Semester 2 should be taken in Semester 1 instead.

** ENG5008 and ENG5009:

- Enrolment into ENG5008 and ENG5009 is managed by the Faculty of Engineering. These units are not available for self-enrolment via WES.
- Industry experience placements are by application only and open a semester prior to enrolments. In the meantime, you should enrol in one of the specified elective units outlined in Part D on page 3 as a placeholder. If your placement application is successful, the Faculty will withdraw you from the elective unit.
- If you are unsuccessful in your industry experience application, you may substitute ENG5008 and ENG5009 with units selected from the specified elective studies in Part D.

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Research thesis

Enrolment in the research thesis units is subject to the availability of supervisors and projects. To be eligible, you must maintain a minimum overall Weighted Average Mark (WAM) of 65%. The selection process involves ranking eligible students based on their entire academic record and evaluating their suitability for undertaking the research component of the program.

YEAR 1 Semester 1	ENG5001 Advanced data analytics for engineers	ENG5200 Engineering project risk management	ENG5100 Professional engineer in organisation and society* or Specialist study unit	Specialist study unit
YEAR 1 Semester 2	ENG5410 Research practice in engineering	Specialist study unit	Specialist study unit or ENG5100 Professional engineer in organisation and society*	Specified elective unit
YEAR 2 Semester 1	ENG5011 Master's thesis Part 1		Specialist study unit	Specialist study unit
YEAR 2 Semester 2	ENG5012 Master's thesis Part 2		Specialist study unit	Specified elective unit

 Part A. Core studies

 Part C. Advanced practice

 Part B. Specialist studies

 Part D. Specified elective studies

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* **ENG5100**: You can take ENG5100 in either Semester 1 or Semester 2. If you choose to take ENG5100 in Semester 2, a specialist study unit in Semester 2 should be taken in Semester 1 instead.

Part B. Specialist studies

You must complete the 36 credit points requirements of one of the specialisations below.

Bioresource engineering

Complete six units from below.

- **CHE5321** Advanced bioprocess technology
- **CHE5322** Advanced biochemical engineering
- **CHE5881** Advanced reaction engineering
- **CHE5882** Biomass and biorefineries
- **CHE5883** Nanostructured membranes for separation and energy production
- **CHE5886** Advanced biopolymers
- **CHE5888** Sustainability and innovation
- **CHE5889** Food engineering and processing

Engineering management

Complete six units from below.

- **BEX5114** Value creation and start-up capital optimisation for founders
- **BEX5120** Startup fundamentals: From setting up to securing investment

Part D. Specified elective studies

You must complete 12 points (two units) selected from below.

- **CHE5888** Sustainability and innovation
- **CIV5302** Traffic engineering and management
- **CIV5305** Travel demand modelling
- **CIV5884** Water sensitive stormwater design
- **CIV5888** Advanced computational methods
- **CIV5899** Infrastructure information management
- **ECE5881** Real-time system design
- **ECE5882** Advanced electronics design
- **ECE5886** Smart grids
- **MEC5884** Sustainable engineering systems
- **MEC5885** Energy efficiency and sustainability
- **MTE5882** Advanced polymeric materials
- **MTE5883** Environmental durability and protection of metals and engineering materials
- **MTE5884** Advanced photovoltaics and energy storage
- **MTE5885** Biomaterials and biomechanics
- **MTE5886** Additive manufacturing of metallic materials
- **MTE5887** Additive manufacturing of polymeric and functional materials

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▪ BEX5411 Creativity and entrepreneurship ▪ BEX5413 Technology and innovation for start-ups ▪ CHE5888 Sustainability and innovation ▪ CIV5899 Infrastructure information management ▪ ECE5886 Smart grids ▪ ENG5220 Organising the project function ▪ ENG5221 Project as a social system ▪ MEC5897 Lean manufacturing ▪ MGF5020 Business ethics in a global environment ▪ MGF5130 Managing diversity and inclusion ▪ MGF5600 Managing innovation ▪ MGF5901 Managing the project context ▪ MGF5903 Delivering projects ▪ MGF5928 Strategic leadership ▪ MTE5193 Materials and sustainability Medical engineering Complete six units from below. ▪ ECE5087 Medical technology innovation ▪ MTE5096 Biomaterials 2 ▪ MTE5197 Engineering in nanomaterials ▪ MTE5882 Advanced polymeric materials ▪ MTE5885 Biomaterials and biomechanics ▪ MTE5886 Additive manufacturing of metallic materials ▪ MTE5887 Additive manufacturing of polymeric and functional materials Power systems engineering Complete the six units below. ▪ ECE5153 Power system analysis ▪ ECE5155 Power electronic converters ▪ ECE5886 Smart grids ▪ MEC5885 Energy efficiency and sustainability engineering ▪ MEC5888 Renewable energy systems ▪ MTE5884 Advanced photovoltaics and energy storage Renewable energy engineering Complete six units from below. ▪ CHE5888 Sustainability and innovation ▪ ECE5886 Smart grids ▪ MEC5881 Engineering systems performance analysis ▪ MEC5883 Mechanical systems design ▪ MEC5885 Energy efficiency and sustainability engineering ▪ MEC5888 Renewable energy systems ▪ MTE5884 Advanced photovoltaics and energy storage Robotic construction engineering Complete six units from below. ▪ CIV5121 Building structures and technology ▪ CIV5899 Infrastructure information management ▪ ECE5176 Computer vision ▪ ECE5178 Intelligent robotics ▪ ECE5179 Neural networks and deep learning ▪ ENE5042 Environmental impact and risk assessment ▪ MEC5882 Instrumentation, sensing and monitoring	▪ MON5750 Monash Innovation Guarantee
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Robotics engineering

Complete six units from below.

- [ECE5176](#) Computer vision
- [ECE5178](#) Intelligent robotics
- [MEC5156](#) Advanced robotics in manufacturing
- [MEC5882](#) Instrumentation, sensing and monitoring
- [MEC5883](#) Mechanical systems design
- [MEC5884](#) Sustainable engineering systems
- [MEC5888](#) Renewable energy systems
- [MEC5897](#) Lean manufacturing

Smart manufacturing engineering

Complete six units from below.

- [ECE5179](#) Neural networks and deep learning
- [ENE5043](#) Quantifying sustainability in urban systems
- [ENE5044](#) AI applications for civil and environmental engineers
- [MEC5156](#) Advanced robotics in manufacturing
- [MEC5881](#) Engineering systems performance analysis
- [MEC5882](#) Instrumentation, sensing and monitoring
- [MEC5883](#) Mechanical systems design
- [MEC5884](#) Sustainable engineering systems
- [MEC5897](#) Lean manufacturing
- [MTE5886](#) Additive manufacturing of metallic materials
- [MTE5887](#) Additive manufacturing of polymeric functional materials

Urban systems engineering

Complete six units from below.

- [CIV5121](#) Building structures and technology
- [CIV5177](#) Advanced road engineering
- [CIV5178](#) Advanced water treatment
- [CIV5302](#) Traffic engineering and management
- [CIV5314](#) Planning urban mobility futures
- [CIV5899](#) Infrastructure information management
- [ENE5042](#) Environmental impact and risk assessment
- [ENE5043](#) Quantifying sustainability in urban systems
- [MEC5884](#) Sustainable engineering systems