

Course progression map for 2026 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: 16 December 2025*

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 extended** | ENG5220 Organising the project function | Specialist study unit | Specialist study unit |
| YEAR 2 Semester 2 | ENG5008 Industry experience or ENG5009 Industry experience extended** | 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

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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
- [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

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
- [ENG5005](#) Research methods
- [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
- [MON5750](#) Monash Innovation Guarantee

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- [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 the six units below.

- [CIV5121](#) Building structures and technology
- [CIV5899](#) Infrastructure information management
- [ECE5178](#) Intelligent robotics
- [ECE5179](#) Neural networks and deep learning
- [ENE5042](#) Environmental impact and risk assessment
- [MEC5882](#) Instrumentation, sensing and monitoring

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

Telecommunications engineering

Complete six units from below.

- [ECE5122](#) Advanced electromagnetics
- [ECE5143](#) Optical communications
- [ECE5145](#) Network performance
- [ECE5176](#) Computer vision
- [ECE5179](#) Neural networks and deep learning
- [ECE5883](#) Advanced signal processing
- [ECE5884](#) Wireless communications



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Across 2026 and 2027, you are advised to complete the following units in the sequence shown below to stay on track to complete the Telecommunications Engineering specialisation:

2026, Sem 1: ECE5145 *
2026, Sem 2: ECE5884, ECE5122
2027, Sem 1: ECE5176, ECE5883
2027, Sem 2: ECE5179 or ECE5143

* ECE5145 may not be offered in 2027 – If you plan to take ECE5145, please enrol in the unit in Sem 1, 2026

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