Course progression map for 2024 commencing students

This progression map provides advice on the suitable sequencing of units and guidance on how to plan unit enrolment for each semester of study. It does not substitute for the list of required units as described in the course 'Requirements' section of the Handbook. Please note that the map is subject to updates. Update version: 21 February 2024

E6017 Master of Advanced Engineering

Stream: Industry experience

| YEAR 1 Semester 1 | ENG5001 Advanced engineering data analysis | ENG5200 Engineering project risk management | ENG5100 Professional engineer in organisation and society | Specialist core unit |
| YEAR 1 Semester 2 | ENG5410 Research practice in engineering | Specialist core unit | Specialist core unit | Enhancement unit |
| YEAR 2 Semester 1 | ENG5008 Work integrated learning* or a level 5 unit as prescribed by the Faculty of Engineering | OPM5000 Organising the project function | Specialist core unit | Specialist core unit |
| YEAR 2 Semester 2 | ENG5009 Work integrated learning 2* or a level 5 unit as prescribed by the Faculty of engineering | OPM5001 Project as a social system | Specialist core unit | Enhancement unit |

*Available from 2025. Subject to placement availability

Stream: Master's thesis research

Enrolment in the Master's thesis research stream 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 engineering data analysis | ENG5200 Engineering project risk management | ENG5100 Professional engineer in organisation and society | Specialist core unit |
| YEAR 1 Semester 2 | ENG5410 Research practice in engineering | Specialist core unit | Specialist core unit | Enhancement unit |
| YEAR 2 Semester 1 | ENG5011 Masters thesis Part 1 | Specialist core unit | Specialist core unit | Specialist core unit |
| YEAR 2 Semester 2 | ENG5012 Masters thesis Part 2 | Specialist core unit | Enhancement unit |

*Available from 2025

Please contact Course Advisers for enrolment advice.

Part A. Common core
Part B. Specialist core
Part C. Advanced practice
Part D. Enhancement

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Source: Monash University 2024 Handbook - CRICOS Provider Number: 00008C

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### Part B. Specialist core study

You must complete the requirements of one of the specialisations below.

#### Bioresource engineering
Complete 36 points (six units) selected 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

#### Medical engineering
Complete 36 points (six units) selected from below.
- [ECE5087](#) Medical technology innovation
- [MTE5096](#) Biomaterials 2
- [MEC5197](#) 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 36 points (six units) listed 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 36 points (six units) selected 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 36 points (six units) listed below.
- [CIV5121](#) Building structures and technology
- [CIV5170](#) Bridge design and assessment
- [CIV5899](#) Infrastructure information management
- [ECE5178](#) Intelligent robotics
- [ECE5179](#) Neural networks and deep learning
- [MEC5882](#) Instrumentation, sensing and monitoring

### Part D. Enhancement study

You must complete 12 points (two units) selected from below.
- [CHE5888](#) Sustainability and innovation
- [CIV5303](#) Traffic engineering and management
- [CIV5305](#) Travel demand modelling
- [CIV5884](#) Water sensitive stormwater design
- [CIV5886](#) Advanced computational methods
- [CIV5899](#) Infrastructure information management
- [ECE5146](#) Multimedia technologies
- [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 or metallic materials
- [MTE5887](#) Additive manufacturing or polymeric and functional materials

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### Source:

Monash University 2024 Handbook - CRICOS Provider Number: 00098C

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<table>
<thead>
<tr>
<th>Robotics engineering</th>
<th>Smart manufacturing engineering</th>
<th>Telecommunications engineering</th>
<th>Urban systems engineering</th>
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<tr>
<td>▪ ECE5176 Computer vision</td>
<td>▪ ECE5179 Neural networks and deep learning</td>
<td>▪ ECE5122 Advanced electromagnetics</td>
<td>▪ CIV5121 Building structures and technology</td>
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<td>▪ MEC5156 Advanced robotics in manufacturing</td>
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<tr>
<td>▪ MEC5156 Advanced robotics in manufacturing</td>
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<td>▪ ECE5145 Network performance</td>
<td>▪ CIV5178 Advanced water treatment</td>
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<td>▪ MEC5882 Instrumentation, sensing and monitoring</td>
<td>▪ ECE5146 Multimedia technologies</td>
<td>▪ CIV5302 Traffic engineering and management</td>
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<td>▪ MEC5883 Mechanical systems design</td>
<td>▪ ECE5176 Computer vision</td>
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<td>▪ MEC5897 Lean manufacturing</td>
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<td>▪ MTE5886 Additive manufacturing of metallic materials</td>
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<td>▪ MEC5884 Sustainable engineering systems</td>
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