MONASH University

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 *Subject to placement availability	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 *Available from 2025. Subject to placement availability	OPM5001 Project as a social system	Specialist core unit	Enhancement unit

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 Available from 2025		Specialist core unit	Specialist core unit
YEAR 2 Semester 2	ENG5012 Masters thesis Part 2 Available from 2025		Specialist core unit	Enhancement unit

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

Please contact Course Advisers for enrolment advice.

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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 Available from 2025
- MTE5096 Biomaterials 2 Available from 2025
- 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 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
- CIV5302 Traffic engineering and management
- CIV5305 Travel demand modelling
- CIV5884 Water sensitive stormwater design
- CIV5888 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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Robotics engineering

Complete 36 points (six units) selected 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 36 points (six units) selected from below.

- ECE5179 Neural networks and deep learning
- 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 36 points (six units) selected from below.

- ECE5122 Advanced electromagnetics
- ECE5143 Optical communications
- ECE5145 Network performance
- ECE5146 Multimedia technologies
- ECE5176 Computer vision
- ECE5883 Advanced signal processing
- ECE5884 Wireless communications

Urban systems engineering

Complete 36 points (six units) selected 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 Available from 2025
- MEC5884 Sustainable engineering systems