

# Course progression map for 2025 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. *Update version: 26 May 2025*

## E6014 Master of Engineering Specialisation – Engineering management

<b>YEAR 1</b> Semester 1	<b>ENG5100</b> Professional engineer in organisation and society or Enhancement unit*	<b>ENG5200</b> Engineering project risk management	Specialist core unit	Specialist core unit
<b>YEAR 1</b> Semester 2	<b>ENG5410</b> Research practice in engineering	Enhancement unit or <b>ENG5100</b> Professional engineer in organisation and society*	Specialist core unit	Specialist core unit

Part A. Common core units     
  Part B. Specialist core units     
  Part C. Enhancement unit

Engineering management enhancement units	Engineering management specialist core units
<ul style="list-style-type: none"> <li><b>CHE5888</b> Sustainability and innovation</li> <li><b>CIV5302</b> Traffic engineering and management</li> <li><b>CIV5305</b> Travel demand modelling</li> <li><b>CIV5884</b> Water sensitive stormwater design</li> <li><b>CIV5899</b> Infrastructure information management</li> <li><b>ENE5043</b> Quantifying sustainability in urban systems</li> <li><b>ENE5044</b> AI applications for civil and environmental engineers</li> <li><b>ENG5008</b> Industry experience**</li> <li><b>MEC5885</b> Energy efficiency and sustainability</li> <li><b>MON5750</b> Monash Innovation Guarantee – Postgraduate (MIG – P)</li> <li><b>MTE5883</b> Environmental durability and protection of metals and engineering materials</li> <li><b>MTE5884</b> Advanced photovoltaics and energy storage</li> </ul>	<p>You must complete four units selected freely from below. The units are grouped to help you focus on a field of management.</p> <p>Contemporary management</p> <ul style="list-style-type: none"> <li><b>MGF5020</b> Business ethics in a global environment</li> <li><b>MGF5130</b> Managing diversity and inclusion</li> <li><b>MGF5600</b> Managing innovation</li> <li><b>MGF5928</b> Strategic leadership</li> </ul> <p>Entrepreneurship</p> <ul style="list-style-type: none"> <li><b>BEX5114</b> Value creation and start-up capital optimisation for founders</li> <li><b>BEX5120</b> Startup fundamentals: From setting up to securing investment</li> <li><b>BEX5411</b> Creativity and entrepreneurship</li> <li><b>BEX5413</b> Technology and innovation for start-ups</li> </ul> <p>Project management</p> <ul style="list-style-type: none"> <li><b>ENG5220</b> Organising the project function</li> <li><b>ENG5221</b> Project as a social system</li> <li><b>MGF5901</b> Managing the project context</li> <li><b>MGF5903</b> Delivering projects</li> </ul>

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\*\* **ENG5008** is industry experience that will give you valuable exposure to work-related activities. Please note that enrolment in the unit is subject to available placements. **If you commenced the course in the July semester intake: If you plan to enrol in **ENG5008**, you must take **ENG5100** in your first semester of study and **ENG5008** in your second semester of study.**

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### E6014 Master of Engineering Specialisation - Biological engineering

<b>YEAR 1</b> Semester 1	<a href="#">ENG5100</a> Professional engineer in organisation and society or Enhancement unit*	<a href="#">ENG5200</a> Engineering project risk management	<a href="#">CHE5886</a> Advanced biopolymers	<a href="#">CHE5321</a> Advanced bioprocess technology
<b>YEAR 1</b> Semester 2	<a href="#">ENG5410</a> Research practice in engineering	Enhancement unit or <a href="#">ENG5100</a> Professional engineer in organisation and society*	<a href="#">CHE5882</a> Biomass and biorefineries	<a href="#">CHE5322</a> Advanced biochemical engineering

Part A. Common core units     
  Part B. Specialist core units     
  Part C. Enhancement unit

Biological engineering enhancement units
<ul style="list-style-type: none"> <li>• <a href="#">CHE5883</a> Nanostructured membranes for separation and energy production</li> <li>• <a href="#">CHE5889</a> Food engineering and processing</li> <li>• <a href="#">ENG5008</a> Industry experience**</li> <li>• <a href="#">GCH5010</a> Introduction to green chemistry</li> <li>• <a href="#">MGF5020</a> Business ethics in a global environment</li> <li>• <a href="#">MGF5600</a> Managing innovation</li> <li>• <a href="#">MON5750</a> Monash Innovation Guarantee – Postgraduate (MIG – P)</li> </ul>

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## E6014 Master of Engineering Specialisation - Civil engineering

<b>YEAR 1</b> Semester 1	<a href="#">ENG5100</a> Professional engineer in organisation and society or Enhancement unit*	<a href="#">ENG5200</a> Engineering project risk management	Specialist core unit	Specialist core unit
<b>YEAR 1</b> Semester 2	<a href="#">ENG5410</a> Research practice in engineering	Enhancement unit or <a href="#">ENG5100</a> Professional engineer in organisation and society*	Specialist core unit	Specialist core unit

Part A. Common core units     
  Part B. Specialist core units     
  Part C. Enhancement unit

Civil engineering enhancement units	Civil engineering specialist core units
<ul style="list-style-type: none"> <li><a href="#">CIV5136</a> Structural analysis</li> <li><a href="#">CIV5177</a> Advanced road engineering</li> <li><a href="#">CIV5314</a> Planning urban mobility futures</li> <li><a href="#">CIV5887</a> Infrastructure rehabilitation and monitoring</li> <li><a href="#">CIV5888</a> Advanced computational methods</li> <li><a href="#">CIV5899</a> Infrastructure information management</li> <li><a href="#">ENE5042</a> Environmental impact and risk assessment</li> <li><a href="#">ENE5043</a> Quantifying sustainability in urban systems</li> <li><a href="#">ENE5044</a> AI applications for civil and environmental engineers</li> <li><a href="#">ENG5008</a> Industry experience**</li> <li><a href="#">ENG5331</a> Railway engineering [Previously MEC5221 code]</li> <li><a href="#">MEC5882</a> Instrumentation, sensing and monitoring</li> <li><a href="#">MEC5888</a> Renewable energy systems</li> <li><a href="#">MGF5020</a> Business ethics in a global environment</li> <li><a href="#">MON5750</a> Monash Innovation Guarantee – Postgraduate (MIG – P)</li> <li><a href="#">MTE5883</a> Environmental durability and protection of metals and engineering materials</li> </ul>	<p>You must complete four units selected freely from below. The units are grouped to help you focus on the field of civil engineering suited to your previous study.</p> <p><b>Structural engineering</b></p> <ul style="list-style-type: none"> <li><a href="#">CIV5885</a> Infrastructure dynamics</li> <li><a href="#">CIV5887</a> Infrastructure rehabilitation and monitoring</li> <li><a href="#">CIV5888</a> Advanced computational methods or <a href="#">CIV5136</a> Structural analysis</li> <li><a href="#">CIV5899</a> Infrastructure information management</li> </ul> <p><b>Geotechnical engineering</b></p> <ul style="list-style-type: none"> <li><a href="#">CIV5887</a> Infrastructure rehabilitation and monitoring or <a href="#">CIV5148</a> Ground hazards engineering</li> <li><a href="#">CIV5888</a> Advanced computational methods</li> <li><a href="#">CIV5899</a> Infrastructure information management</li> </ul> <p><b>Transport engineering</b></p> <ul style="list-style-type: none"> <li><a href="#">CIV5302</a> Traffic engineering and management</li> <li><a href="#">CIV5305</a> Travel demand modelling</li> <li><a href="#">CIV5314</a> Planning urban mobility futures</li> <li><a href="#">CIV5899</a> Infrastructure information management</li> </ul> <p><b>Water and environmental engineering</b></p> <ul style="list-style-type: none"> <li><a href="#">CIV5884</a> Water sensitive stormwater design</li> <li><a href="#">CIV5899</a> Infrastructure information management</li> <li><a href="#">ENE5042</a> Environmental impact and risk assessment</li> <li><a href="#">ENE5043</a> Quantifying sustainability in urban systems</li> <li><a href="#">ENE5044</a> AI applications for civil and environmental engineers</li> </ul>

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### E6014 Master of Engineering Specialisation - Electrical engineering

<b>YEAR 1</b> Semester 1	<a href="#">ENG5100</a> Professional engineer in organisation and society or Enhancement unit*	<a href="#">ENG5200</a> Engineering project risk management	<a href="#">ECE5882</a> Advanced electronics design	<a href="#">ECE5883</a> Advanced signal processing
<b>YEAR 1</b> Semester 2	<a href="#">ENG5410</a> Research practice in engineering	Enhancement unit or <a href="#">ENG5100</a> Professional engineer in organisation and society*	<a href="#">ECE5122</a> Advanced electromagnetics	<a href="#">ECE5884</a> Wireless communications

Part A. Common core units     
  Part B. Specialist core units     
  Part C. Enhancement unit

Electrical engineering enhancement units
<ul style="list-style-type: none"> <li>• <a href="#">CHE5882</a> Biomass and biorefineries</li> <li>• <a href="#">CHE5883</a> Nanostructured membranes for separation and energy production</li> <li>• <a href="#">ECE5143</a> Optical communications</li> <li>• <a href="#">ECE5146</a> Multimedia technologies</li> <li>• <a href="#">ECE5153</a> Power system analysis</li> <li>• <a href="#">ECE5156</a> Advanced power electronics</li> <li>• <a href="#">ECE5178</a> Intelligent robotics</li> <li>• <a href="#">ECE5179</a> Neural networks and deep learning</li> <li>• <a href="#">ECE5886</a> Smart grids</li> <li>• <a href="#">ENG5007</a> Translation and commercialisation of medical technologies</li> <li>• <a href="#">ENG5008</a> Industry experience**</li> <li>• <a href="#">MEC5881</a> Engineering systems performance analysis</li> <li>• <a href="#">MGF5020</a> Business ethics in a global environment</li> <li>• <a href="#">MGF5600</a> Managing innovation</li> <li>• <a href="#">MON5750</a> Monash Innovation Guarantee – Postgraduate (MIG – P)</li> <li>• <a href="#">MTE5883</a> Environmental durability and protection of metals and engineering materials</li> <li>• <a href="#">MTE5886</a> Additive manufacturing of metallic materials</li> </ul>

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### E6014 Master of Engineering Specialisation – Energy transitions engineering

<b>YEAR 1</b> Semester 1	<b>ENG5001</b> Advanced data analytics for engineers	Enhancement unit	Specialist core unit	Specialist core unit
<b>YEAR 1</b> Semester 2	<b>ENG5008</b> Industry experience* or a level 5 unit as prescribed by the Faculty of Engineering <small>*Subject to placement availability</small>	<b>ECE5886</b> Smart grids	Specialist core unit	Specialist core unit

Part A. Common core units     
  Part B. Specialist core units     
  Part C. Enhancement unit

Energy transitions engineering enhancement units	Energy transitions engineering specialist core units
<ul style="list-style-type: none"> <li><b>ENG5200</b> Engineering project risk management</li> <li><b>MEC5883</b> Mechanical systems design</li> <li><b>MON5750</b> Monash Innovation Guarantee – Postgraduate (MIG – P)</li> </ul>	<ul style="list-style-type: none"> <li><b>CHE5882</b> Biomass and biorefineries</li> <li><b>CHE5888</b> Sustainability and innovation</li> <li><b>MEC5881</b> Engineering systems performance analysis</li> <li><b>MEC5885</b> Energy efficiency and sustainability engineering</li> <li><b>MEC5888</b> Renewable energy systems</li> <li><b>MTE5884</b> Advanced photovoltaics and energy storage</li> </ul>

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### E6014 Master of Engineering Specialisation - Materials engineering

<b>YEAR 1</b> Semester 1	<b>ENG5100</b> Professional engineer in organisation and society or Enhancement unit*	<b>ENG5200</b> Engineering project risk management	Specialist core unit	Specialist core unit
<b>YEAR 1</b> Semester 2	<b>ENG5410</b> Research practice in engineering	Enhancement unit or <b>ENG5100</b> Professional engineer in organisation and society*	Specialist core unit	Specialist core unit

Part A. Common core units     
 Part B. Specialist core units     
 Part C. Enhancement unit

Materials engineering enhancement units	Materials engineering specialist core units
<ul style="list-style-type: none"> <li><b>CHE5883</b> Nanostructured membranes for separation and energy production</li> <li><b>ENG5008</b> Industry experience**</li> <li><b>MGF5020</b> Business ethics in a global environment</li> <li><b>MGF5600</b> Managing innovation</li> <li><b>MON5750</b> Monash Innovation Guarantee – Postgraduate (MIG – P)</li> <li><b>MTE5194</b> Engineering alloy design, processing and selection</li> <li><b>MTE5197</b> Engineering with nanomaterials</li> <li><b>MTE5881</b> Applied crystallography in advanced materials characterisation</li> <li><b>MTE5883</b> Environmental durability and protection of metals and engineering materials</li> <li><b>MTE5886</b> Additive manufacturing of metallic materials</li> </ul>	<ul style="list-style-type: none"> <li><b>MTE5190</b> Advanced materials modelling</li> <li><b>MTE5193</b> Materials and sustainability</li> <li><b>MTE5194</b> Engineering alloy design, processing and selection</li> <li><b>MTE5197</b> Engineering with nanomaterials</li> <li><b>MTE5881</b> Applied crystallography in advanced materials characterisation</li> <li><b>MTE5882</b> Advanced polymeric materials</li> <li><b>MTE5883</b> Environmental durability and protection of metals and engineering materials</li> <li><b>MTE5884</b> Advanced photovoltaics and energy storage</li> <li><b>MTE5885</b> Biomaterials and biomechanics</li> <li><b>MTE5886</b> Additive manufacturing of metallic materials</li> <li><b>MTE5887</b> Additive manufacturing of polymeric and functional materials</li> </ul>

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### E6014 Master of Engineering Specialisation - Mechanical engineering

<b>YEAR 1</b> Semester 1	<a href="#">ENG5100</a> Professional engineer in organisation and society or Enhancement unit*	<a href="#">ENG5200</a> Engineering project risk management	<a href="#">MEC5883</a> Mechanical systems design	<a href="#">MEC5885</a> Energy efficiency and sustainability engineering
<b>YEAR 1</b> Semester 2	<a href="#">ENG5410</a> Research practice in engineering	Enhancement unit or <a href="#">ENG5100</a> Professional engineer in organisation and society*	<a href="#">MEC5881</a> Engineering systems performance analysis	<a href="#">MEC5884</a> Sustainable engineering systems

Part A. Common core units     
  Part B. Specialist core units     
  Part C. Enhancement unit

Mechanical engineering enhancement units
<ul style="list-style-type: none"> <li>• <a href="#">ENG5002</a> Engineering entrepreneurship</li> <li>• <a href="#">ENG5008</a> Industry experience**</li> <li>• <a href="#">MEC5156</a> Advanced robotics in manufacturing</li> <li>• <a href="#">ENG5331</a> Railway engineering [Previously MEC5221 code]</li> <li>• <a href="#">MEC5882</a> Instrumentation, sensing and monitoring</li> <li>• <a href="#">MEC5888</a> Renewable energy systems</li> <li>• <a href="#">MEC5897</a> Lean manufacturing</li> <li>• <a href="#">MGF5020</a> Business ethics in a global environment</li> <li>• <a href="#">MGF5600</a> Managing innovation</li> <li>• <a href="#">MON5750</a> Monash Innovation Guarantee – Postgraduate (MIG – P)</li> <li>• <a href="#">MTE5193</a> Materials and sustainability</li> <li>• <a href="#">MTE5882</a> Advanced polymeric materials</li> <li>• <a href="#">MTE5883</a> Environmental durability and protection of metals and engineering materials</li> <li>• <a href="#">MTE5884</a> Advanced photovoltaics and energy storage</li> <li>• <a href="#">MTE5886</a> Additive manufacturing of metallic materials</li> </ul>

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### E6014 Master of Engineering Specialisation – Power systems engineering

<b>YEAR 1</b> Semester 1	<a href="#">ENG5001</a> Advanced data analytics for engineers	Enhancement unit	Specialist core unit	Specialist core unit
<b>YEAR 1</b> Semester 2	<a href="#">ENG5008</a> Industry experience* or a level 5 unit as prescribed by the Faculty of Engineering <small>*Subject to placement availability</small>	<a href="#">ECE5886</a> Smart grids	Specialist core unit	Specialist core unit

Part A. Common core units     
  Part B. Specialist core units     
  Part C. Enhancement unit

Power systems engineering enhancement units	Power systems engineering specialist core units
<ul style="list-style-type: none"> <li>• <a href="#">MEC5885</a> Energy efficiency and sustainability engineering</li> <li>• <a href="#">MTE5884</a> Advanced photovoltaics and energy storage</li> <li>• <a href="#">MON5750</a> Monash Innovation Guarantee – Postgraduate (MIG – P)</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">ECE5153</a> Power system analysis</li> <li>• <a href="#">ECE5155</a> Power electronic converters</li> <li>• <a href="#">ECE5179</a> Neural networks and deep learning</li> <li>• <a href="#">ECE5883</a> Advanced signal processing</li> <li>• <a href="#">MEC5888</a> Renewable energy systems</li> </ul>

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### E6014 Master of Engineering Specialisation – Renewable energy engineering

<b>YEAR 1</b> Semester 1	<a href="#">ENG5100</a> Professional engineer in organisation and society or Enhancement unit*	<a href="#">ENG5200</a> Engineering project risk management	<a href="#">MTE5884</a> Advanced photovoltaics and energy storage	<a href="#">MEC5885</a> Energy efficiency and sustainability engineering
<b>YEAR 1</b> Semester 2	<a href="#">ENG5410</a> Research practice in engineering	Enhancement unit or <a href="#">ENG5100</a> Professional engineer in organisation and society*	<a href="#">ECE5886</a> Smart grids	<a href="#">MEC5888</a> Renewable energy systems

Part A. Common core units     
  Part B. Specialist core units     
  Part C. Enhancement unit

Renewable energy engineering enhancement units
<ul style="list-style-type: none"> <li>• <a href="#">CHE5888</a> Sustainability and innovation</li> <li>• <a href="#">ENE5043</a> Quantifying sustainability in urban systems</li> <li>• <a href="#">ENE5044</a> AI applications for civil and environmental engineers</li> <li>• <a href="#">ENG5008</a> Industry experience**</li> <li>• <a href="#">MEC5881</a> Engineering systems performance analysis</li> <li>• <a href="#">MON5750</a> Monash Innovation Guarantee – Postgraduate (MIG – P)</li> <li>• <a href="#">MTE5883</a> Environmental durability and protection of metals and engineering materials</li> <li>• <a href="#">MEC5884</a> Sustainable engineering systems</li> </ul>

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### E6014 Master of Engineering Specialisation – Smart manufacturing engineering

<b>YEAR 1</b> Semester 1	<a href="#">ENG5100</a> Professional engineer in organisation and society or Enhancement unit*	<a href="#">ENG5200</a> Engineering project risk management	<a href="#">MTE5887</a> Additive manufacturing of polymeric functional materials	<a href="#">MEC5882</a> Instrumentation, sensing and monitoring
<b>YEAR 1</b> Semester 2	<a href="#">ENG5410</a> Research practice in engineering	Enhancement unit or <a href="#">ENG5100</a> Professional engineer in organisation and society*	<a href="#">MEC5897</a> Lean manufacturing	<a href="#">MEC5156</a> Advanced robotics in manufacturing

Part A. Common core units     
  Part B. Specialist core units     
  Part C. Enhancement unit

Smart manufacturing engineering enhancement units
<ul style="list-style-type: none"> <li>• <a href="#">ECE5179</a> Neural networks and deep learning</li> <li>• <a href="#">ENE5043</a> Quantifying sustainability in urban systems</li> <li>• <a href="#">ENE5044</a> AI applications for civil and environmental engineers</li> <li>• <a href="#">ENG5008</a> Industry experience**</li> <li>• <a href="#">MEC5881</a> Engineering systems performance analysis</li> <li>• <a href="#">MEC5884</a> Sustainable engineering systems</li> <li>• <a href="#">MON5750</a> Monash Innovation Guarantee – Postgraduate (MIG – P)</li> <li>• <a href="#">MTE5886</a> Additive manufacturing of metallic materials</li> </ul>

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