

## Course progression map for 2023 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 should be used in conjunction with the requirements of the course as specified in the [Handbook](#). Please note that the map is subject to updates. Update version: 6 June 2025

### E6011 Master of Professional Engineering – 2 years program [Entry level 2]

#### Specialisation – Chemical engineering

#### *Bioprocessing and food engineering stream*

<b>YEAR 1</b> Semester 1	<a href="#">CHE5110</a> Advanced thermodynamics	<a href="#">CHE5881</a> Advanced reaction engineering	<a href="#">ENG5100</a> Professional engineer in organisation and society	Chemical engineering enhancement unit	<a href="#">ENG0003</a> Continuous Professional Development
<b>YEAR 1</b> Semester 2	<a href="#">CHE5112</a> Advanced fluid dynamics	<a href="#">CHE5889</a> Food engineering and processing	<a href="#">CHE5113</a> Advanced separation processes	<a href="#">CHE5888</a> Sustainability and innovation	
<b>YEAR 2</b> Semester 1	<a href="#">CHE5884</a> Process modelling and optimisation	<a href="#">ENG5001</a> Advanced engineering data analysis	<a href="#">ENG5005</a> Research methods	Chemical engineering enhancement unit	
<b>YEAR 2</b> Semester 2	<a href="#">ENG5105</a> Integrated design	<a href="#">CHE5882</a> Biomass and biorefineries	<a href="#">ENG5006</a> Research practice	Chemical engineering enhancement unit	

<input type="checkbox"/> Part A. Engineering foundation knowledge and application	<input type="checkbox"/> Part B. Engineering specialist knowledge and application	<input type="checkbox"/> Part C. Enhancement learning
<input type="checkbox"/> Part D. Research and knowledge skills	<input type="checkbox"/> Part E. Professional practice	

#### Chemical engineering enhancement units

[ENG5002](#) Engineering entrepreneurship *No offering in 2023*

[CHE5321](#) Advanced bioprocess technology

[CHE5322](#) Advanced biochemical engineering

[CHE5883](#) Nanostructured membranes for separation and energy production

[CHE5886](#) Advanced biopolymers

[ENG5008](#) Work integrated learning

[MEC5888](#) Renewable energy systems

[MTE5882](#) Advanced polymeric materials

[MTE5887](#) Additive manufacturing of polymeric and functional materials

[MON5750](#) Monash Innovation Guarantee

Please contact [Course Advisers](#) for enrolment advice.

#### Continuous Professional Development (CPD)

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### E6011 Master of Professional Engineering – 2 years program [Entry level 2]

#### Specialisation – Chemical engineering

#### Engineering design stream

<b>YEAR 1</b> Semester 1	<a href="#">CHE5110</a> Advanced thermodynamics	<a href="#">CHE5881</a> Advanced reaction engineering	<a href="#">ENG5100</a> Professional engineer in organisation and society	Chemical engineering enhancement unit	<a href="#">ENG0003</a> Continuous Professional Development
<b>YEAR 1</b> Semester 2	<a href="#">CHE5112</a> Advanced fluid dynamics	<a href="#">CHE5888</a> Sustainability and innovation	<a href="#">CHE5113</a> Advanced separation processes	Chemical engineering enhancement unit	
<b>YEAR 2</b> Semester 1	<a href="#">CHE5884</a> Process modelling and optimisation	<a href="#">ENG5001</a> Advanced engineering data analysis	<a href="#">ENG5005</a> Research methods	Chemical engineering enhancement unit	
<b>YEAR 2</b> Semester 2	<a href="#">ENG5106</a> Integrated design project (12 points)		<a href="#">ENG5006</a> Research practice	Chemical engineering enhancement unit	

Part A. Engineering foundation knowledge and application

Part B. Engineering specialist knowledge and application

Part C. Enhancement learning

Part D. Research and knowledge skills

Part E. Professional practice

#### Chemical engineering enhancement units

[ENG5002](#) Engineering entrepreneurship *No offering in 2023*

[CHE5883](#) Nanostructured membranes for separation and energy production

[CHE5886](#) Advanced biopolymers

[ENG5008](#) Work integrated learning

[MEC5888](#) Renewable energy systems

[MTE5882](#) Advanced polymeric materials

[MTE5887](#) Additive manufacturing of polymeric and functional materials

[MON5750](#) Monash Innovation Guarantee

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### E6011 Master of Professional Engineering – 2 years program [Entry level 2]

#### Specialisation – Civil Engineering

<b>YEAR 1</b> Semester 1	<a href="#">CIV5170</a> Bridge design and assessment	<a href="#">CIV5178</a> Advanced water treatment	<a href="#">ENG5100</a> Professional engineer in organisation and society	Civil engineering enhancement unit	<a href="#">ENG0003</a> Continuous Professional Development
<b>YEAR 1</b> Semester 2	<a href="#">CIV5147</a> Advanced geomechanics	<a href="#">CIV5121</a> Building structures and technology	<a href="#">CIV5177</a> Advanced road engineering	Civil engineering enhancement unit	
<b>YEAR 2</b> Semester 1	<a href="#">ENG5008</a> Work integrated learning or <a href="#">ENG5200</a> Engineering project risk management	<a href="#">ENG5001</a> Advanced engineering data analysis	<a href="#">ENG5005</a> Research methods	Civil engineering enhancement unit	
<b>YEAR 2</b> Semester 2	<a href="#">ENG5105</a> Integrated design	<a href="#">CIV5888</a> Advanced computational methods	<a href="#">ENG5006</a> Research practice	Civil engineering enhancement unit	

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|---|---|---|
| <input type="checkbox"/> Part A. Engineering foundation knowledge and application | <input type="checkbox"/> Part B. Engineering specialist knowledge and application | <input type="checkbox"/> Part C. Enhancement learning |
| <input type="checkbox"/> Part D. Research and knowledge skills                    | <input type="checkbox"/> Part E. Professional practice                            |   |

#### Civil engineering enhancement learning – From 2025, you may choose freely from the lists below.

<b>Structural engineering</b>	<b>Transport engineering</b>	<b>Water engineering</b>
<a href="#">CIV5136</a> Structural analysis <a href="#">CIV5885</a> Infrastructure dynamics <a href="#">CIV5887</a> Infrastructure rehabilitation and monitoring <a href="#">CIV5899</a> Infrastructure information management <a href="#">ENG5008</a> Work integrated learning <a href="#">MON5750</a> Monash Innovation Guarantee	<a href="#">CIV5302</a> Traffic engineering and management <a href="#">CIV5305</a> Travel demand modelling <a href="#">CIV5314</a> Planning urban transport systems <a href="#">CIV5899</a> Infrastructure information management <a href="#">ENE5043</a> Quantifying sustainability in urban systems <a href="#">ENE5044</a> AI applications for civil and environmental engineers <a href="#">ENG5331</a> Railway engineering <a href="#">ENG5008</a> Work integrated learning <a href="#">MON5750</a> Monash Innovation Guarantee	<a href="#">CIV5882</a> Flood hydraulics and hydrology <a href="#">CIV5883</a> Surface water hydrology <a href="#">CIV5884</a> Water sensitive stormwater design <a href="#">CIV5899</a> Infrastructure information management <a href="#">ENE5043</a> Quantifying sustainability in urban systems <a href="#">ENE5044</a> AI applications for civil and environmental engineers <a href="#">ENG5008</a> Work integrated learning <a href="#">MON5750</a> Monash Innovation Guarantee

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### E6011 Master of Professional Engineering – 2 years program [Entry level 2]

#### Specialisation – Electrical engineering

<b>YEAR 1</b> Semester 1	<a href="#">ECE5883</a> Advanced signal processing	<a href="#">ENG5001</a> Advanced engineering data analysis	<a href="#">ENG5100</a> Professional engineer in organisation and society	Electrical engineering enhancement units (Complete 24 points):  <a href="#">ECE5143</a> Optical communications* <a href="#">ECE5145</a> Network performance <a href="#">ECE5146</a> Multimedia technologies <a href="#">ECE5153</a> Power system analysis <a href="#">ECE5156</a> Advanced power electronics <a href="#">ECE5176</a> Computer vision <a href="#">ECE5178</a> Intelligent robotics <a href="#">ECE5179</a> Neural networks and deep learning <a href="#">ENG5008</a> Work integrated learning <a href="#">MEC5882</a> Instrumentation, sensing and monitoring <a href="#">MTE5884</a> Advanced photovoltaics and energy storage <a href="#">MON5750</a> Monash Innovation Guarantee	<a href="#">ENG0003</a> Continuous Professional Development
<b>YEAR 1</b> Semester 2	<a href="#">ECE5122</a> Advanced electromagnetics	<a href="#">ECE5884</a> Wireless communications	<a href="#">ECE5886</a> Smart grids		
<b>YEAR 2</b> Semester 1	<a href="#">ECE5155</a> Power electronic converters	ECE5881 Real-time system design <small>From 2025: Replace with <a href="#">ECE5143</a> or <a href="#">ECE5145</a> (Semester 2 offerings)</small>	<a href="#">ENG5005</a> Research methods		
<b>YEAR 2</b> Semester 2	<a href="#">ENG5105</a> Integrated design	<a href="#">ECE5882</a> Advanced electronic design <small>Semester 1 offering from 2025</small>	<a href="#">ENG5006</a> Research practice		

\* [ECE5143](#): If you have not completed ECE5881 by 2024, replace it with ECE5143 or ECE5145 from 2025. If you need a Semester 1 unit to complete your course on time in 2025, you may substitute it with another unit from the enhancement list.

- Part A. Engineering foundation knowledge and application
- Part B. Engineering specialist knowledge and application
- Part C. Enhancement learning
- Part D. Research and knowledge skills
- Part E. Professional practice

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### E6011 Master of Professional Engineering – 2 years program [Entry level 2] Specialisation – Materials engineering

<b>YEAR 1</b> Semester 1	<a href="#">MTE5882</a> Advanced polymeric materials	<a href="#">ENG5001</a> Advanced engineering data analysis	<a href="#">ENG5100</a> Professional engineer in organisation and society	Materials engineering enhancement units (Complete 24 points):  <a href="#">CHE5883</a> Nanostructured membranes for separation and energy production <a href="#">CHE5886</a> Advanced biopolymers <a href="#">CHE5888</a> Sustainability and innovation <a href="#">ENG5008</a> Work integrated learning <a href="#">MEC5884</a> Sustainable engineering systems <a href="#">MEC5885</a> Energy efficiency and sustainability engineering <a href="#">MEC5891</a> Design for additive manufacturing <a href="#">MEC5897</a> Lean manufacturing <a href="#">MTE5190</a> Advanced materials modelling <a href="#">MTE5193</a> Materials and sustainability <a href="#">MTE5194</a> Engineering alloy design, processing and selection <a href="#">MTE5197</a> Engineering with nanomaterials <a href="#">MON5750</a> Monash Innovation Guarantee	<a href="#">ENG0003</a> Continuous Professional Development
<b>YEAR 1</b> Semester 2	<a href="#">MTE5885</a> Biomaterials and biomechanics	<a href="#">MTE5883</a> Environmental durability and protection of metals and engineering materials	<a href="#">MTE5881</a> Applied crystallography in advanced materials characterisation		
<b>YEAR 2</b> Semester 1	<a href="#">MTE5887</a> Additive manufacturing of polymeric and functional materials	<a href="#">MTE5884</a> Advanced photovoltaics and energy storage	<a href="#">ENG5005</a> Research methods		
<b>YEAR 2</b> Semester 2	<a href="#">ENG5105</a> Integrated design	<a href="#">MTE5886</a> Additive manufacturing of metallic materials	<a href="#">ENG5006</a> Research practice		

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#### Specialisation – Mechanical engineering

<b>YEAR 1</b> Semester 1	<a href="#">MEC5883</a> Mechanical systems design	<a href="#">ENG5001</a> Advanced engineering data analysis	<a href="#">ENG5100</a> Professional engineer in organisation and society	Mechanical engineering enhancement units (Complete 24 points):  <a href="#">ENG5002</a> Engineering entrepreneurship <a href="#">ENG5008</a> Work integrated learning <a href="#">ENG5331</a> Railway engineering <a href="#">MEC5891</a> Design for additive manufacturing <a href="#">MEC5897</a> Lean manufacturing <a href="#">MTE5193</a> Materials and sustainability <a href="#">MTE5882</a> Advanced polymeric materials <a href="#">MTE5883</a> Environmental durability and protection of metals and engineering materials <a href="#">MTE5884</a> Advanced photovoltaics and energy storage <a href="#">MTE5885</a> Biomaterials and biomechanics <a href="#">MTE5886</a> Additive manufacturing of metallic materials <a href="#">MTE5887</a> Additive manufacturing of polymeric and functional materials <a href="#">MON5750</a> Monash Innovation Guarantee	<a href="#">ENG0003</a> Continuous Professional Development
<b>YEAR 1</b> Semester 2	<a href="#">MEC5881</a> Engineering systems performance analysis	<a href="#">MEC5888</a> Renewable energy systems	<a href="#">MEC5156</a> Advanced robotics in manufacturing		
<b>YEAR 2</b> Semester 1	<a href="#">MEC5882</a> Instrumentation, sensing and monitoring	<a href="#">MEC5885</a> Energy efficiency and sustainability engineering	<a href="#">ENG5005</a> Research methods		
<b>YEAR 2</b> Semester 2	<a href="#">ENG5105</a> Integrated design	<a href="#">MEC5884</a> Sustainable engineering systems	<a href="#">ENG5006</a> Research practice		

- Part A. Engineering foundation knowledge and application   
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