Course progression map for 2025 commencing students

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E6011 Master of Professional Engineering – 3 years program [Entry level 1]

Specialisation – Chemical engineering

Bioprocessing and food engineering stream

YEAR 1 Semester 1	CHE3161 Chemistry and chemical thermodynamics	ENG5001 Advanced data analytics for engineers	CHE5888 Sustainability and innovation	ENG5100 Professional engineer in organisation and society You may take this unit in Semester 1 or Semester 2	ENG0003 Continuous Professional Development
YEAR 1 Semester 2	CHE2161 Mechanics of fluids	CHE2162 Materials and energy balance	CHE2163 Heat and mass transfer	CHE3162 Process control	
YEAR 2 Semester 1	CHE3165 Separations processes	CHE5881 Advanced reaction engineering	CHE5884 Process modelling and optimisation	Chemical engineering enhancement unit	
YEAR 2 Semester 2	CHE3164 Reaction engineering	CHE3166 Process design	CHE5112 Advanced fluid dynamics	CHE5113 Advanced separation processes	
YEAR 3 Semester 1	ENG5005 Research methods	CHE5110 Advanced thermodynamics	Chemical engineering enhancement unit	Chemical engineering enhancement unit	
YEAR 3 Semester 2	ENG5006 Research practice	ENG5105 Integrated design	CHE5882 Biomass and biorefineries	CHE5889 Food engineering and processing	

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
CHE5321 Advanced bioprocess technology
CHE5322 Advanced biochemical engineering
CHE5883 Nanostructured membranes for separation and energy production
CHE5886 Advanced biopolymers
ENG5008 Industry experience
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.

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E6011 Master of Professional Engineering – 3 years program [Entry level 1]

Specialisation – Chemical engineering

Engineering design stream

YEAR 1 Semester 1	CHE3161 Chemistry and chemical thermodynamics	ENG5001 Advanced data analytics for engineers	Chemical engineering enhancement unit	ENG5100 Professional engineer in organisation and society You may take this unit in Semester 1 or Semester 2	ENG0003 Continuous Professional Development
YEAR 1 Semester 2	CHE2161 Mechanics of fluids	CHE2162 Materials and energy balance	CHE2163 Heat and mass transfer	CHE3162 Process control	
YEAR 2 Semester 1	CHE3165 Separations processes	CHE5881 Advanced reaction engineering	CHE5884 Process modelling and optimisation	CHE5110 Advanced thermodynamics	
YEAR 2 Semester 2	CHE3164 Reaction engineering	CHE3166 Process design	CHE5112 Advanced fluid dynamics	CHE5113 Advanced separation processes	
YEAR 3 Semester 1	ENG5005 Research methods	Chemical engineering enhancement unit	Chemical engineering enhancement unit	Chemical engineering enhancement unit	
YEAR 3 Semester 2	ENG5006 Research practice	ENG5106 Integrated design project (12 points)		CHE5888 Sustainability and innovation	

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Chemical engineering enhancement units

ENG5002 Engineering entrepreneurship
CHE5883 Nanostructured membranes for separation and energy production
CHE5886 Advanced biopolymers
ENG5008 Industry experience
MEC5888 Renewable energy systems
MTE5882 Advanced polymeric materials
MTE5887 Additive manufacturing of polymeric and functional materials
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E6011 Master of Professional Engineering – 3 years program [Entry level 1]

Specialisation – Civil Engineering

YEAR 1 Semester 1	CIV2206 Structural mechanics	CIV2282 Transport and traffic engineering	CIV2263 Water systems	CIV3285 Engineering hydrology	ENG0003 Continuous Professional Development
YEAR 1 Semester 2	CIV2242 Geomechanics 1	CIV2235 Structural materials	ENG5221 Project as a social system	ENG5100 Professional engineer in organisation and society You may take this unit in Semester 1 or Semester 2	
YEAR 2 Semester 1	CIV3294 Structural design	CIV5178 Advanced water treatment	ENG5001 Advanced data analytics for engineers	Civil engineering enhancement units Complete 4 units (24 points): CIV5136 Structural analysis CIV5302 Traffic engineering and management CIV5305 Travel demand modelling CIV5314 Planning urban transport systems CIV5883 Surface water hydrology CIV5884 Water sensitive stormwater design CIV5885 Infrastructure dynamics CIV5887 Infrastructure rehabilitation and monitoring CIV5899 Infrastructure information management ENE5043 Quantifying sustainability in urban systems ENE5044 AI applications for civil and environmental engineers ENG5331 Railway engineering ENG5008 Industry experience MON5750 Monash Innovation Guarantee	
YEAR 2 Semester 2	CIV5147 Advanced geomechanics	CIV5121 Building structures and technology	CIV5177 Advanced road engineering		
YEAR 3 Semester 1	ENG5200 Engineering project risk management	CIV5170 Bridge design and assessment	ENG5005 Research methods		
YEAR 3 Semester 2	ENG5105 Integrated design	CIV5888 Advanced computational methods	ENG5006 Research practice		

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Source: Monash University 2025 Handbook
Monash University, CRICOS Provider Number: 00008C

MONASH University

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E6011 Master of Professional Engineering – 3 years program [Entry level 1]

Specialisation – Electrical engineering

YEAR 1 Semester 1	ECE2131 Electrical circuits	ECE3141 Information and networks	ECE3051 Electrical energy systems	ENG5001 Advanced data analytics for engineers	ENG0003 Continuous Professional Development
YEAR 1 Semester 2	ECE2072 Digital systems	ECE3121 Engineering electromagnetics	ECE2111 Signals and systems	ECE4132 Control system design	
YEAR 2 Semester 1	ECE5883 Advanced signal processing	ECE5145 Network performance or ECE5143 Optical communications	ENG5100 Professional engineer in organisation and society You may take this unit in Semester 1 or Semester 2	Electrical engineering enhancement units Complete 4 units (24 points): ECE5143 Optical communications ECE5145 Network performance ECE5146 Multimedia technologies ECE5153 Power system analysis ECE5156 Advanced power electronics ECE5176 Computer vision ECE5178 Intelligent robotics ECE5179 Neural networks and deep learning ENG5008 Industry experience MEC5882 Instrumentation, sensing and monitoring MTE5884 Advanced photovoltaics and energy storage MON5750 Monash Innovation Guarantee	
YEAR 2 Semester 2	ECE3161 Analogue electronics	ECE5884 Wireless communications	ECE5886 Smart grids		
YEAR 3 Semester 1	ECE5155 Power electronic converters	ECE5882 Advanced electronic design	ENG5005 Research methods		
YEAR 3 Semester 2	ENG5105 Integrated design	ECE5122 Advanced electromagnetics	ENG5006 Research practice		

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MONASH University

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E6011 Master of Professional Engineering – 3 years program [Entry level 1]

Specialisation – Materials engineering

YEAR 1 Semester 1	MTE2102 Phase equilibria and phase transformations	MTE2103 Mechanical properties of materials	ENG5001 Advanced data analytics for engineers	ENG5100 Professional engineer in organisation and society You may take this unit in Semester 1 or Semester 2	ENG0003 Continuous Professional Development
YEAR 1 Semester 2	MTE2202 Functional materials 1 From 2026 Replace with MTE3104 *or* MTE2201 Plastics and the planet: Health, impact and sustainability	MTE3202 Magnetic and spintronic materials	MTE3203 Introduction to ceramics: Properties, processing and applications	MTE4596 Biomaterials 2	
YEAR 2 Semester 1	MTE5882 Advanced polymeric materials	MTE3102 Plasticity of metals and alloys	MTE4102 Advanced materials processing and manufacturing	Materials engineering enhancement units Complete 4 units (24 points): CHE5883 Nanostructured membranes for separation and energy production CHE5886 Advanced biopolymers CHE5888 Sustainability and innovation ENG5008 Industry experience MEC5884 Sustainable engineering systems MEC5885 Energy efficiency and sustainability engineering MEC5891 Design for additive manufacturing MEC5897 Lean manufacturing MTE5190 Advanced materials modelling MTE5193 Materials and sustainability MTE5194 Engineering alloy design, processing and selection MTE5197 Engineering with nanomaterials MON5750 Monash Innovation Guarantee	
YEAR 2 Semester 2	MTE5885 Biomaterials and biomechanics	MTE5883 Environmental durability and protection of metals and engineering materials	MTE5881 Applied crystallography in advanced materials characterisation		
YEAR 3 Semester 1	MTE5887 Additive manufacturing of polymeric and functional materials	MTE5884 Advanced photovoltaics and energy storage	ENG5005 Research methods		
YEAR 3 Semester 2	ENG5105 Integrated design	MTE5886 Additive manufacturing of metallic materials	ENG5006 Research practice		

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Source: Monash University 2025 Handbook
Monash University, CRICOS Provider Number: 00008C

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E6011 Master of Professional Engineering – 3 years program [Entry level 1]

Specialisation – Mechanical engineering

YEAR 1 Semester 1	MEC2402 Design methods From 2026 Replace with MMA2001	MEC2403 Mechanics of materials From 2026 Replace with MMA2002	ENG5001 Advanced data analytics for engineers	ENG5100 Professional engineer in organisation and society You may take this unit in Semester 1 or Semester 2	ENG0003 Continuous Professional Development
YEAR 1 Semester 2	TRC4802 Thermo-fluids and power systems From 2026 Replace with MMA2003	MEC3453 Mechanical dynamics 2 From 2026 Replace with MMA2004	MEC3457 Systems and control From 2026 Replace with MMA2005	MEC3416 Mechanical design 2	
YEAR 2 Semester 1	MEC5883 Mechanical systems design	MEC3455 Solid mechanics 2 From 2026 Replace with MEC3451	MEC3456 Engineering computational analysis From 2026 Replace with MEC4408	Mechanical engineering enhancement units Complete 4 units (24 points): ENG5002 Engineering entrepreneurship ENG5008 Industry experience ENG5331 Railway engineering MEC5891 Design for additive manufacturing MEC5897 Lean manufacturing MTE5193 Materials 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	
YEAR 2 Semester 2	MEC5881 Engineering systems performance analysis	MEC5888 Renewable energy systems	MEC5156 Advanced robotics in manufacturing		
YEAR 3 Semester 1	MEC5882 Instrumentation, sensing and monitoring	MEC5885 Energy efficiency and sustainability engineering	ENG5005 Research methods		
YEAR 3 Semester 2	ENG5105 Integrated design	MEC5884 Sustainable engineering systems	ENG5006 Research practice		

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