

Course progression map for 2020 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](#). This map is subject to updates. Update version: 18 December 2023

E3002 Bachelor of Engineering (Honours) and Bachelor of Arts

Common first year

If no foundation units are required:					
Year	Sem	Units			
1	1	ENG1001 Engineering design: lighter, faster, stronger	ENG1005 Engineering mathematics	ENG1060 Computing for engineers	Arts major
	2	ENG1002 Engineering design: cleaner, safer, smarter	ENG1003 Engineering mobile apps	First year engineering elective unit	Arts major
Tip: You can swap the semester of your engineering elective and your semester 1 Arts unit.					

If you need to enrol in foundation physics and maths*:					
1	1	ENG1002 Engineering design: cleaner, safer, smarter	PHS1001 Foundation physics	ENG1090 Foundation mathematics	Arts major
	2	ENG1001 Engineering design: lighter, faster, stronger	ENG1005 Engineering mathematics	ENG1060 Computing for engineers	Arts major
<ol style="list-style-type: none"> If you are requiring two foundation units, you will need to take the remaining core unit ENG1003 Engineering mobile apps in semester one of year two as an overload, and increase the total credit points needed for the double by 6 points. You cannot swap the semesters of any of the units. If you are wanting to complete Software Engineering, you must complete ENG1003 Engineering mobile apps in Year 1 (Semester 1) and PHS1001 Foundation physics in Year 2 (Semester 1) as an overload. 					

If you need to enrol in foundation maths:					
1	1	ENG1002 Engineering design: cleaner, safer, smarter	ENG1003 Engineering mobile apps	ENG1090 Foundation mathematics	Arts major
	2	ENG1001 Engineering design: lighter, faster, stronger	ENG1005 Engineering mathematics	ENG1060 Computing for engineers	Arts major
Tip: You can swap the semester of ENG1003 and your semester 2 Arts unit.					

If you need to enrol in foundation physics:					
1	1	ENG1002 Engineering design: cleaner, safer, smarter	ENG1003 Engineering mobile apps	PHS1001 Foundation physics	Arts major
	2	ENG1001 Engineering design: lighter, faster, stronger	ENG1005 Engineering mathematics	ENG1060 Computing for engineers	Arts major
Tip: You can swap the semester of ENG1003 and your semester 2 Arts unit.					

Note:

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E3002 Bachelor of Engineering (Honours) and Bachelor of Arts

Specialisation - Aerospace engineering

	Bachelor of Aerospace Engineering (Honours)		Bachelor of Arts	
Year 1 Semester 1	Common first year			Arts major
Year 1 Semester 2				Arts major
Year 2 Semester 1	ENG2005 Advanced engineering mathematics	MAE2412 Aerospace design Replace with MEC2402 from 2023	Arts minor	Arts major
Year 2 Semester 2	MAE2404 Aerodynamics 1	MAE2402 Thermodynamics and heat transfer Unit title change from 2021	Arts minor	Arts major
Year 3 Semester 1	MAE2401 Aircraft structures 1 Replace with MEC2403 from 2023	MAE3401 Aerodynamics 2	Arts minor	Arts major
Year 3 Semester 2	MAE2505 Aerospace dynamics	MAE3405 Flight vehicle propulsion Unit title change from 2022	Arts minor	Arts major
Year 4 Semester 1	MAE3456 Aerospace computational mechanics Replace with MEC3456 from 2023	MAE3404 Flight vehicle dynamics	Arts elective	Arts major
Year 4 Semester 2	MAE3411 Aerospace structural mechanics	MAE3408 Aerospace control	Arts elective	Arts major
Year 5 Semester 1	ENG4701 Final year project A	MAE4404 Aerospace practices and airworthiness Replace with MEC4404 from 2023	MAE4416 Orbital mechanics and spaceflight dynamics	Arts elective
Year 5 Semester 2	ENG4702 Final year project B	MAE4410 Flight vehicle design	MAE4426 Finite element analysis and composite structures	Arts elective

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E3002 Bachelor of Engineering (Honours) and Bachelor of Arts

Specialisation - Chemical engineering

	Bachelor of Chemical Engineering (Honours)		Bachelor of Arts	
Year 1 Semester 1	Common first year			Arts major
Year 1 Semester 2				Arts major
Year 2 Semester 1	CHM1011 Chemistry 1 or CHM1051 Chemistry 1 Advanced	ENG2005 Advanced engineering mathematics	Arts minor	Arts major
Year 2 Semester 2	CHE2162 Material and energy balances	CHE2161 Mechanics of fluids	Arts minor	Arts major
Year 3 Semester 1	CHE2164 Thermodynamics 1	CHE3167 Transport phenomena and numerical methods	Arts minor	Arts major
Year 3 Semester 2	CHE2163 Heat and mass transfer	CHE3162 Process control	Arts minor	Arts major
Year 4 Semester 1	CHE3161 Chemistry and chemical thermodynamics	CHE3165 Separation processes	Arts elective	Arts major
Year 4 Semester 2	CHE3166 Process design	CHE3164 Reaction engineering	Arts elective	Arts major
Year 5 Semester 1	ENG4701 Final year project A	CHE4162 Particle technology	CHE4161 Engineer in society	Arts elective
Year 5 Semester 2	ENG4702 Final year project B	CHE4170 Design project (12 points)		Arts elective

Note:

- [CHE4164](#) and [CHE4165](#) are integrated industrial project units for select students only. The units are undertaken in place of the final year project units ENG4701 and ENG4702. Depending on placement location, you may have to overload a semester or extend an additional semester in order to complete your course.
- CHE4170 - You should not overload in the semester when undertaking this unit.
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E3002 Bachelor of Engineering (Honours) and Bachelor of Arts

Specialisation - Civil engineering

	Bachelor of Civil Engineering (Honours)		Bachelor of Arts		
Year 1 Semester 1	Common first year			Arts major	
Year 1 Semester 2				Arts major	
Year 2 Semester 1	CIV2282 Transport and traffic engineering	CIV2206 Structural mechanics	Arts minor	Arts major	If two foundation units are required then overload is required for ENG1003 Engineering mobile apps
Year 2 Semester 2	ENG2005 Advanced engineering mathematics	CIV2235 Structural materials	Arts minor	Arts major	
Year 3 Semester 1	CIV2263 Water systems	CIV3294 Structural design	Arts minor	Arts major	
Year 3 Semester 2	CIV2242 Geomechanics 1	CIV3283 Road engineering	Arts minor	Arts major	
Year 4 Semester 1	CIV3248 Groundwater and environmental geomechanics	CIV3285 Engineering hydrology	Arts elective	Arts major	
Year 4 Semester 2	CIV3247 Geomechanics 2	CIV3221 Building structures and technology	Arts elective	Arts major	
Year 5 Semester 1	ENG4701 Final year project A	CIV4286 Project management for civil engineers	CIV4280 Bridge design and assessment	Arts elective	ENG0001 Continuous Professional Development (0 credit points)
Year 5 Semester 2	ENG4702 Final year project B	CIV4212 Civil and environmental engineering practice	CIV4288 Water treatment	Arts elective	

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E3002 Bachelor of Engineering (Honours) and Bachelor of Arts

Specialisation - Electrical and computer systems engineering

	Bachelor of Electrical and Computer Systems Engineering (Honours)		Bachelor of Arts		
Year 1 Semester 1	Common first year			Arts major	
Year 1 Semester 2				Arts major	
Year 2 Semester 1	ENG2005 Advanced engineering mathematics	ECE2071 Computer organisation and programming	Arts minor	Arts major	If two foundation units are required then overload is required for ENG1003 Engineering mobile apps
Year 2 Semester 2	ECE2072 Digital systems (if not already taken at level one)	ECE2191 Probability models in engineering	Arts minor	Arts major	
Year 3 Semester 1	ECE2131 Electrical circuits	ECE3073 Computer systems	Arts minor	Arts major	
Year 3 Semester 2	ECE2111 Signals and systems	ECE3121 Engineering electromagnetics Replace ECE3121 with ECE3122 in 2024	Arts minor	Arts major	
Year 4 Semester 1	ECE3161 Analogue electronics	ECE3141 Information and networks	Arts elective	Arts major	
Year 4 Semester 2	ECE4132 Control system design	Level 4 or 5 ECE-coded core elective	Arts elective	Arts major	
Year 5 Semester 1	ENG4701 Final year project A	Level 4 or 5 ECE-coded core elective	ECE3051 Electrical energy systems	Arts elective	ENG0001 Continuous Professional Development (0 credit points)
Year 5 Semester 2	ENG4702 Final year project B	ECE4191 Engineering integrated design	ECE4099 Professional practice	Arts elective	

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E3002 Bachelor of Engineering (Honours) and Bachelor of Arts

Specialisation - Environmental engineering

	Bachelor of Environmental Engineering (Honours)		Bachelor of Arts	
Year 1 Semester 1	Common first year			Arts major
Year 1 Semester 2				Arts major
Year 2 Semester 1	BTX3100 Sustainability regulation for business	ENE2021 Energy and the environment	Arts minor	Arts major
Year 2 Semester 2	ENG2005 Advanced engineering mathematics	CHE2162 Material and energy balances	Arts minor	Arts major
Year 3 Semester 1	CHE2164 Thermodynamics 1	CIV2263 Water systems	Arts minor	Arts major
Year 3 Semester 2	ENE3031 Building sustainability	ENE2503 Materials properties and recycling	Arts minor	Arts major
Year 4 Semester 1	CIV3248 Groundwater and environmental geomechanics	CIV3285 Engineering hydrology	Arts elective	Arts major
Year 4 Semester 2	ENE3032 Fate and transport of contaminants	ENE3606 The air environment	Arts elective	Arts major
Year 5 Semester 1	ENG4701 Final year project A	CIV4286 Project management for civil engineers	ENE4042 Environment impact and risk assessment	Arts elective
Year 5 Semester 2	ENG4702 Final year project B	CIV4212 Civil and environmental engineering practice	ENE4041 Soil remediation and solid waste management	Arts elective

Note:

- The Sustainable processing stream is not available in a double degree as it requires extra prerequisites in the elective space.
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E3002 Bachelor of Engineering (Honours) and Bachelor of Arts

Specialisation - Materials engineering

	Bachelor of Materials Engineering (Honours)		Bachelor of Arts	
Year 1 Semester 1	Common first year			Arts major
Year 1 Semester 2				Arts major
Year 2 Semester 1	MTE2101 Atomic-scale structure of materials	MTE2102 Phase equilibria and phase transformations	Arts minor	Arts major
Year 2 Semester 2	MTE2202 Functional materials 1	ENG2005 Advanced engineering mathematics	Arts minor	Arts major
Year 3 Semester 1	MTE2103 Mechanical properties of materials	MTE3103 Materials life cycle	Arts minor	Arts major
Year 3 Semester 2	MTE2201 Polymers	MTE3203 Introduction to ceramics: Properties, processing and applications	Arts minor	Arts major
Year 4 Semester 1	MTE3101 Materials in a complex world 1: People, projects and data	MTE3102 Plasticity of metals and alloys	Arts elective	Arts major
Year 4 Semester 2	MTE3201 Materials in a complex world 2: Characterisation, identification and selection	MTE3202 Functional materials 2	Arts elective	Arts major
Year 5 Semester 1	ENG4701 Final year project A	MTE4101 Integrated design project	MTE4102 Advanced materials processing and manufacturing	Arts elective
Year 5 Semester 2	ENG4702 Final year project B	MTE4201 Materials in a complex world 3: Impact in society	Level 4 or 5 MTE-coded materials engineering core elective	Arts elective

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Specialisation - Mechanical engineering

	Bachelor of Mechanical Engineering (Honours)		Bachelor of Arts	
Year 1 Semester 1	Common first year			Arts major
Year 1 Semester 2				Arts major
Year 2 Semester 1	MEC2403 Mechanics of materials	MEC2401 Dynamics 1	Arts minor	Arts major
Year 2 Semester 2	ENG2005 Advanced engineering mathematics	MEC2404 Mechanics of fluids	Arts minor	Arts major
Year 3 Semester 1	MEC2402 Design methods	MEC3456 Engineering computational mechanics	Arts minor	Arts major
Year 3 Semester 2	MEC2405 Thermodynamics	MEC3457 Systems and control	Arts minor	Arts major
Year 4 Semester 1	MEC3455 Solid mechanics	MEC3451 Fluid mechanics 2	Arts elective	Arts major
Year 4 Semester 2	MEC3416 Machine design	MEC3453 Dynamics 2	Arts elective	Arts major
Year 5 Semester 1	ENG4701 Final year project A	MEC4408 Thermodynamics and heat transfer	MEC4404 Professional practice	Arts elective
Year 5 Semester 2	ENG4702 Final year project B	MEC4426 Computer-aided design	MEC4407 Design project	Arts elective

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E3002 Bachelor of Engineering (Honours) and Bachelor of Arts

Specialisation – Robotics and Mechatronics engineering – *Artificial intelligence stream*

	Bachelor of Robotics and Mechatronics Engineering (Honours)		Bachelor of Arts		
Year 1 Semester 1	Common first year			Arts major	
Year 1 Semester 2				Arts major	
Year 2 Semester 1	ECE2071 Computer organisation and programming	ECE2131 Electrical circuits	Arts minor	Arts major	If two foundation units are required then overload is required for ENG1003 Engineering mobile apps
Year 2 Semester 2	ENG2005 Advanced engineering mathematics	TRC2201 Mechanics	Arts minor	Arts major	
Year 3 Semester 1	MEC2402 Design methods	TRC3200 Dynamical systems	Arts minor	Arts major	
Year 3 Semester 2	ECE2072 Digital systems	ECE4179 Neural networks and deep learning	Arts minor	Arts major	
Year 4 Semester 1	TRC3500 Sensors and artificial perception	ECE3161 Analogue electronics	Arts elective	Arts major	
Year 4 Semester 2	TRC3600 Modelling and control	ECE4078 Intelligent robotics	Arts elective	Arts major	
Year 5 Semester 1	ENG4701 Final year project A	TRC4800 Robotics	ECE4076 Computer vision	Arts elective	ENG0001 Continuous Professional Development (0 credit points)
Year 5 Semester 2	ENG4702 Final year project B	ECE4191 Engineering integrated design	TRC4002 Professional practice	Arts elective	

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Specialisation – Robotics and Mechatronics engineering – *Automation stream*

	Bachelor of Robotics and Mechatronics Engineering (Honours)		Bachelor of Arts		
Year 1 Semester 1	Common first year			Arts major	
Year 1 Semester 2				Arts major	
Year 2 Semester 1	ECE2071 Computer organisation and programming	ECE2131 Electrical circuits	Arts minor	Arts major	If two foundation units are required then overload is required for ENG1003 Engineering mobile apps
Year 2 Semester 2	ENG2005 Advanced engineering mathematics	TRC2201 Mechanics	Arts minor	Arts major	
Year 3 Semester 1	MEC2402 Design methods	TRC3200 Dynamical systems	Arts minor	Arts major	
Year 3 Semester 2	ECE2072 Digital systems	TRC4802 Thermo-fluids and power systems	Arts minor	Arts major	
Year 4 Semester 1	TRC3500 Sensors and artificial perception	ECE3161 Analogue electronics	Arts elective	Arts major	
Year 4 Semester 2	TRC3600 Modelling and control	TRC3000 Automation project	Arts elective	Arts major	
Year 5 Semester 1	ENG4701 Final year project A	TRC4800 Robotics	TRC4200 Engineering cyber-physical systems	Arts elective	ENG0001 Continuous Professional Development (0 credit points)
Year 5 Semester 2	ENG4702 Final year project B	TRC4902 Mechatronics and manufacturing	TRC4002 Professional practice	Arts elective	

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Specialisation - Software engineering

	Bachelor of Software Engineering (Honours)		Bachelor of Arts	
Year 1 Semester 1	Common first year			Arts major
Year 1 Semester 2				Arts major
Year 2 Semester 1	MAT1830 Discrete mathematics for computer science	FIT2085 Introduction to computer science	Arts minor	Arts major
Year 2 Semester 2	FIT2004 Algorithms and data structures	FIT2101 Software engineering process and management	Arts minor	Arts major
Year 3 Semester 1	FIT2099 Object oriented design and implementation	FIT3159 Computer architecture	Arts minor	Arts major
Year 3 Semester 2	FIT2107 Software quality and testing	FIT2100 Operating systems	Arts minor	Arts major
Year 4 Semester 1	FIT3170 Software engineering practice (12 points)	FIT3077 Software engineering: architecture and design	Arts elective	Arts major
Year 4 Semester 2		FIT3171 Databases	Arts elective	Arts major
Year 5 Semester 1	FIT4002 Software engineering industry experience studio project (12 points)	FIT4003 Software engineering research project Replace with FIT4701 from 2023	FIT4165 Computer networks	Arts elective
Year 5 Semester 2		Replace with FIT4702 from 2023	Level 4 or 5 software engineering technical elective	Arts elective

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