



## Course progression maps 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 should be used in conjunction with the requirements of the course as specified in the [Handbook](#). The map is subject to updates. Updated 16 Jan 2024.

### E3001 Bachelor of Engineering (Honours)

Common First Year

**You do not have VCE Units 3 & 4 Specialist Maths >30 study score and VCE Units 3 & 4 Physics >25 study score: You must enrol in Foundation mathematics (ENG1090) and Foundation physics (PHS1001)**

1	Sem 1 Feb	<a href="#">ENG1012</a> Engineering design	<a href="#">ENG1013</a> Engineering smart systems	<a href="#">PHS1001</a> Foundation physics * <i>Corequisite: ENG1090 *</i>	<a href="#">ENG1090</a> Foundation mathematics
	Sem 2 July	<a href="#">ENG1011</a> Engineering methods	<a href="#">ENG1005</a> Engineering mathematics <i>Required: ENG1090 *</i>	<a href="#">ENG1014</a> Engineering numerical analysis <i>Corequisite: ENG1005</i>	<a href="#">First Year engineering breadth study+</a>

**You do not have VCE Units 3 & 4 Specialist Maths >30 study score: You must enrol in Foundation mathematics (ENG1090)**

1	Sem 1 Feb	<a href="#">ENG1012</a> Engineering design	<a href="#">ENG1011</a> Engineering methods	<a href="#">ENG1090</a> Foundation mathematics * <i>Or swap semester with the Elective unit</i>	<a href="#">First Year engineering breadth study+</a> <i>Or swap semester with the Elective unit</i>
	Sem 2 July	<a href="#">ENG1013</a> Engineering smart systems	<a href="#">ENG1005</a> Engineering mathematics <i>Required: ENG1090 *</i>	<a href="#">ENG1014</a> Engineering numerical analysis <i>Corequisite: ENG1005</i>	Elective

**You do not have VCE Units 3 & 4 Physics >25 study score: You must enrol in Foundation physics (PHS1001)**

1	Sem 1 Feb	<a href="#">ENG1005</a> Engineering mathematics <i>Required: ENG1090 *</i>	<a href="#">ENG1013</a> Engineering smart systems	<a href="#">PHS1001</a> Foundation physics * <i>Required: ENG1090 *</i>	<a href="#">First Year engineering breadth study+</a> <i>Or swap semester with the Elective unit</i>
	Sem 2 July	<a href="#">ENG1011</a> Engineering methods	<a href="#">ENG1012</a> Engineering design	<a href="#">ENG1014</a> Engineering numerical analysis <i>Corequisite: ENG1005</i>	Elective

**You have completed VCE Units 3 & 4 Physics >25 study score and VCE Units 3 and 4 Specialist Maths >30 study score: No foundation units are required**

Year	Period	Units			
1	Sem 1 Feb	Elective	<a href="#">ENG1005</a> Engineering mathematics <i>Required: ENG1090 *</i>	<a href="#">ENG1014</a> Engineering numerical analysis <i>Corequisite: ENG1005</i>	<a href="#">First Year engineering breadth study+</a> <i>Or swap semester with an Elective unit</i>
	Sem 2 July	<a href="#">ENG1012</a> Engineering design	<a href="#">ENG1011</a> Engineering methods	<a href="#">ENG1013</a> Engineering smart systems	Elective

#### NOTE:

- **STUDYING IN MALAYSIA:** If you are studying in the Malaysia campus, please consult [your campus website](#) for the Common First Year map.
- \* Foundation units: You must enrol in the foundation units ENG1090 and/or PHS1001 if you have not completed the [Australian VCE \(Units 3 & 4\) or equivalent](#) Specialist mathematics and/or Physics with the required study score.
- + **Biomedical engineering:** If you are Clayton-based and planning to specialise in Biomedical engineering, you must take BMS1021 as a First Year elective in Semester 1.
- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
- For enrolment advice, please speak with a course adviser in your specialisation. Refer to the [Course Advisers webpage](#) if you are in Clayton.

## E3001 Bachelor of Engineering (Honours)

## Specialisation – Aerospace engineering

Year	Period	Units			
1	Sem 1 Feb	Common First Year			
	Sem 2 July				
2	Sem 1 Feb	<a href="#">MEC2402</a> Design methods	<a href="#">MEC2403</a> Mechanics of materials	<a href="#">ENG2005</a> Advanced engineering mathematics	Level 1, 2 or 3 elective or engineering technical elective
	Sem 2 July	<a href="#">MAE2402</a> Thermodynamics and gas dynamics	<a href="#">MAE2404</a> Aerodynamics 1	<a href="#">MAE2505</a> Aerospace dynamics	Level 1, 2 or 3 elective or engineering technical elective
3	Sem 1 Feb	<a href="#">MAE3401</a> Aerodynamics 2	<a href="#">MAE3404</a> Flight vehicle dynamics	<a href="#">MEC3456</a> Engineering computational analysis	Engineering minor or level 3 or 4 aerospace engineering technical elective
	Sem 2 July	<a href="#">MAE3405</a> Aerospace propulsion	<a href="#">MAE3408</a> Aerospace control	<a href="#">MAE3411</a> Aerospace structural mechanics	Engineering minor or level 3 or 4 aerospace engineering technical elective
4	Sem 1 Feb	<a href="#">ENG4701</a> Final year project A	<a href="#">MAE4416</a> Orbital mechanics and spaceflight dynamics	<a href="#">Complete one Professional Practice domain unit</a>	Engineering minor or level 3, 4 or 5 aerospace engineering technical elective
	Sem 2 July	<a href="#">ENG4702</a> Final year project B	<a href="#">MAE4426</a> Finite element analysis and composite structures	<a href="#">MAE4410</a> Flight vehicle design	Engineering minor or level 3, 4 or 5 aerospace engineering technical elective

**Clayton students enrol in**  
[ENG0001](#) Continuous Professional Development  
 (0 credit points)

### NOTE:

- [MINORS AND TECHNICAL ELECTIVES LIST](#) is located on the Faculty's current student course information webpage.
- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
- If you have completed a unit in First Year (eg MAE2505) that is also a core in your specialisation or if you have completed a unit that is a prohibition to a core unit in your specialisation, you must replace the core with another unit chosen from the aerospace engineering technical electives list or from one of the [engineering minors](#). The replacement unit must be at the same level as the core unit or higher.
- If you completed a First Year engineering elective which happens to be a core unit in your specialisation, you must replace the core with a unit at the same level or higher from your specialisation technical electives list.
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- You are required to complete 420 hours of Continuous Professional Development (CPD) in order to graduate. For further information, refer to the [CPD webpage](#).
- For enrolment advice, please refer to the [Course Advisers webpage](#).

## E3001 Bachelor of Engineering (Honours)

## Specialisation – Biomedical engineering – *Biomedical devices stream*

Year	Period	Units				
1	Sem 1 Feb	Common First Year			<a href="#">BMS1021</a> Cells, tissues and organisms	
	Sem 2 July				Elective	
2	Sem 1 Feb	<a href="#">ENG2005</a> Advanced engineering mathematics	<a href="#">ECE2071</a> Computer organisation and programming	<a href="#">PHY2011</a> Neuroscience of communication, sensory and control systems	<a href="#">MCB2011</a> Molecular biology and the cell	
	Sem 2 July	<a href="#">ECE2111</a> Signals and systems	<a href="#">CHE2161</a> Mechanics of fluids	<a href="#">PHY2042</a> Human physiology: Cardiovascular, respiratory and renal systems	<a href="#">MCB2022</a> The dynamic cell	
3	Sem 1 Feb	<a href="#">ECE2131</a> Electrical circuits	<a href="#">MEC3601</a> Mechanics for biomedical engineering	<a href="#">MTE3204</a> Biomaterials 1	<a href="#">DEV2011</a> Early human development from cells to tissues	
	Sem 2 July	<a href="#">ECE4179</a> Neural networks and deep learning	<a href="#">ECE4087</a> Medical technology innovation	<a href="#">MEC3602</a> Biomedical microsystems	<a href="#">DEV2022</a> Human anatomy and development: Tissues and body systems	
4	Sem 1 Feb	<a href="#">ENG4701</a> Final year project A	<a href="#">MEC4601</a> Implantable devices	<a href="#">TRC3500</a> Sensors and artificial perception	<a href="#">ENG3111</a> Sensory and cognitive neuroscience	Clayton students enrol in <a href="#">ENG0001</a> Continuous Professional Development (0 credit points)
	Sem 2 July	<a href="#">ENG4702</a> Final year project B	<a href="#">ENG4105</a> Biomedical engineering integrated design	<a href="#">Complete one Professional Practice domain unit</a>	<a href="#">ECE4081</a> Medical instrumentation	

### NOTE:

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- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
- If you have completed a unit in First Year that is also a core in your specialisation or if you have completed a unit that is a prohibition to a core unit in your specialisation, you must replace the core with another unit chosen from the electrical and computer systems engineering or materials engineering or mechanical engineering technical electives list or from one of the [engineering minors](#). The replacement unit must be at the same level as the core unit or higher.
- Care should be taken to ensure units are maintained in sequence.
- Engineering minors are not available within the Biomedical engineering specialisation.
- You are required to complete 420 hours of Continuous Professional Development (CPD) in order to graduate. For further information, refer to the [CPD webpage](#).
- For enrolment advice, please refer to the [Course Advisers webpage](#).



## E3001 Bachelor of Engineering (Honours)

## Specialisation – Chemical engineering

Year	Period	Units			
1	Sem 1 Feb	Common First Year			
	Sem 2 July				
2	Sem 1 Feb	<a href="#">ENG2005</a> Advanced engineering mathematics	<a href="#">CHM1011</a> Chemistry 1 or <a href="#">CHM1051</a> Chemistry 1 advanced	<a href="#">CHE2164</a> Thermodynamics 1	Level 1, 2 or 3 elective or engineering technical elective
	Sem 2 July	<a href="#">CHE2162</a> Materials and energy balances	<a href="#">CHE2161</a> Mechanics of fluids	<a href="#">CHE2163</a> Heat and mass transfer	Level 1, 2 or 3 elective or engineering technical elective
3	Sem 1 Feb	<a href="#">CHE3161</a> Chemistry and chemical thermodynamics	<a href="#">CHE3165</a> Separation processes	<a href="#">CHE3167</a> Transport phenomena and numerical methods	Engineering minor or level 3 or 4 chemical engineering technical elective
	Sem 2 July	<a href="#">CHE3162</a> Process control	<a href="#">CHE3164</a> Reaction engineering	<a href="#">CHE3166</a> Process design	Engineering minor or level 3 or 4 chemical engineering technical elective
4	Sem 1 Feb	<a href="#">ENG4701</a> Final year project A	<a href="#">CHE4162</a> Particle technology	<a href="#">Complete one Professional Practice domain unit</a>	Engineering minor or level 3, 4 or 5 chemical engineering technical elective
	Sem 2 July	<a href="#">ENG4702</a> Final year project B	<a href="#">CHE4170</a> Design project (12 points)		Engineering minor or level 3, 4 or 5 chemical engineering technical elective

### NOTE:

- [MINORS AND TECHNICAL ELECTIVES LIST](#) is located on the Faculty's current student course information webpage
- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
- If you have completed a unit in First Year (eg CHM1011 or CHM1051) that is also a core in your specialisation, or if you have completed a unit that is a prohibition to a core unit in your specialisation, you must replace the core with another unit chosen from the chemical engineering technical electives list or from one of the [engineering minors](#). The replacement unit must be at the same level as the core unit or higher.
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- [CHE4164](#) and [CHE4165](#) are integrated industrial project units that are 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.
- **Industry 4.0:** You are encouraged to select ECE2071, ECE2131 and TRC3500 if you are seeking to broaden your skills needed for the jobs of the future.
- You are required to complete the [Continuous Professional Development](#) (if studying in Australia) or [Industrial training](#) (if studying in Malaysia) in order to graduate. For enrolment advice, please speak with a course adviser in your specialisation. Refer to the [Course Advisers webpage](#) if you are in Clayton.



## E3001 Bachelor of Engineering (Honours)

## Specialisation – Civil engineering

Year	Period	Units			
1	Sem 1 Feb	Common First Year			
	Sem 2 July				
2	Sem 1 Feb	<a href="#">CIV2206</a> Structural mechanics	<a href="#">CIV2282</a> Transport and traffic engineering	<a href="#">CIV2263</a> Water systems	Level 1, 2 or 3 elective or engineering technical elective
	Sem 2 July	<a href="#">ENG2005</a> Advanced engineering mathematics	<a href="#">CIV2242</a> Geomechanics 1	<a href="#">CIV2235</a> Structural materials	Level 1, 2 or 3 elective or engineering technical elective
3	Sem 1 Feb	<a href="#">Complete one Professional Practice domain unit</a>	<a href="#">CIV3294</a> Structural design	<a href="#">CIV3285</a> Engineering hydrology	Engineering minor or level 3 or 4 civil engineering technical elective
	Sem 2 July	<a href="#">CIV3283</a> Road engineering	<a href="#">CIV3221</a> Building structures and technology	<a href="#">CIV3247</a> Geomechanics 2	Engineering minor or level 3 or 4 civil engineering technical elective
4	Sem 1 Feb	<a href="#">ENG4701</a> Final year project A	<a href="#">CIV4249</a> Foundation engineering	<a href="#">CIV4280</a> Bridge design and assessment	Engineering minor or level 3, 4 or 5 civil engineering technical elective
	Sem 2 July	<a href="#">ENG4702</a> Final year project B	<a href="#">CIV4212</a> Civil and environmental engineering practice	<a href="#">CIV4288</a> Water treatment	Engineering minor or level 3, 4 or 5 civil engineering technical elective

**Malaysia students enrol in [ENG0002](#)**  
Industrial training (0 credit points)

**Clayton students enrol in [ENG0001](#)**  
Continuous Professional Development (0 credit points)

### NOTE:

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- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
- If you have completed a unit in First Year that is also a core in your specialisation, or if you have completed a unit that is a prohibition to a core unit in your specialisation, you must replace the core with another unit chosen from the civil engineering technical electives list or from one of the [engineering minors](#). The replacement unit must be at the same level as the core unit or higher.
- **Studying civil engineering specialisation in Malaysia:** You must complete ENG1021 to meet Engineering Accreditation Council Malaysia (EAC) requirement for accreditation.
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- You are required to complete the [Continuous Professional Development](#) (if studying in Australia) or [Industrial training](#) (if studying in Malaysia) in order to graduate. For enrolment advice, please speak with a course adviser in your specialisation. Refer to the [Course Advisers webpage](#) if you are in Clayton.



## E3001 Bachelor of Engineering (Honours)

## Specialisation – Electrical and computer systems engineering

Year	Period	Units				
1	Sem 1 Feb	Common First Year				
	Sem 2 July					
2	Sem 1 Feb	<a href="#">ECE2071</a> Computer organisation and programming	<a href="#">ECE2131</a> Electrical circuits	<a href="#">ENG2005</a> Advanced engineering mathematics	Level 1, 2 or 3 elective or engineering technical elective.	
	Sem 2 July	<a href="#">ECE2072</a> Digital systems	<a href="#">ECE2111</a> Signals and systems	<a href="#">ECE2191</a> Probability and AI for engineers	Level 1, 2 or 3 elective or engineering technical elective	
3	Sem 1 Feb	<a href="#">ECE3073</a> Computer systems	<a href="#">ECE3141</a> Information and networks	<a href="#">ECE3161</a> Analogue electronics	Engineering minor or level 3 or 4 ECSE technical elective	
	Sem 2 July	<a href="#">ECE4132</a> Control system design	<a href="#">ECE3121</a> Engineering electromagnetics	<a href="#">Level 4 or 5 ECE-coded core elective*</a>	Engineering minor or level 3 or 4 ECSE technical elective	Malaysia students enrol in <a href="#">ENG0002</a> Industrial training (0 credit points)
4	Sem 1 Feb	<a href="#">ENG4701</a> Final year project A	<a href="#">ECE3051</a> Electrical energy systems	<a href="#">Level 4 or 5 ECE-coded core elective</a>	Engineering minor or level 3, 4 or 5 ECSE technical elective	Clayton students enrol in <a href="#">ENG0001</a> Continuous Professional Development (0 credit points)
	Sem 2 July	<a href="#">ENG4702</a> Final year project B	<a href="#">ECE4191</a> Engineering integrated design	<a href="#">Complete one Professional Practice domain unit</a>	Engineering minor or level 3, 4 or 5 ECSE technical elective	

### NOTE:

- [MINORS AND TECHNICAL ELECTIVES LIST](#) is located on the Faculty's current student course information webpage
- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
- If you have completed a unit in First Year (eg ECE2072) that is also a core in your specialisation, or if you have completed a unit that is a prohibition to a core unit in your specialisation, you must replace the core with another unit chosen from the electrical and computer systems engineering technical electives list or from one of the [engineering minors](#). The replacement unit must be at the same level as the core unit or higher.
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- **Studying ECSE specialisation in Malaysia:** You must complete ECE4053 to meet Engineering Accreditation Council Malaysia (EAC) requirement for accreditation.
- You are required to complete the [Continuous Professional Development](#) (if studying in Australia) or [Industrial training](#) (if studying in Malaysia) in order to graduate.
- For enrolment advice, please speak with a course adviser in your specialisation. Refer to the [Course Advisers webpage](#) if you are in Clayton.



## E3001 Bachelor of Engineering (Honours)

## Specialisation – Environmental engineering

Year	Period	Units			
1	Sem 1 Feb	Common First Year			
	Sem 2 July				
2	Sem 1 Feb	<a href="#">ENE2021</a> Energy and the environment	<a href="#">CHE2164</a> Thermodynamics 1	<a href="#">CIV2263</a> Water systems	Level 1, 2 or 3 elective or engineering technical elective
	Sem 2 July	<a href="#">CHE2162</a> Material and energy balances	<a href="#">ENG2005</a> Advanced engineering mathematics	<a href="#">ENE2503</a> Material properties and recycling	Level 1, 2 or 3 elective or engineering technical elective
3	Sem 1 Feb	<a href="#">CIV3248</a> Groundwater and environmental geomechanics	<a href="#">CIV3285</a> Engineering hydrology	<a href="#">BTX3100</a> Sustainability regulation for business	Engineering minor or level 3 or 4 environmental engineering technical elective
	Sem 2 July	<a href="#">ENE3606</a> The air environment	<a href="#">ENE3032</a> Fate and transport of contaminants	<a href="#">ENE3031</a> Building sustainability	Engineering minor or level 3 or 4 environmental engineering technical elective
4	Sem 1 Feb	<a href="#">ENG4701</a> Final year project A	<a href="#">Complete one Professional Practice domain unit</a>	<a href="#">ENE4042</a> Environment impact and risk assessment	Engineering minor or level 3 or 4 environmental engineering technical elective
	Sem 2 July	<a href="#">ENG4702</a> Final year project B	<a href="#">CIV4212</a> Civil and environmental engineering practice	<a href="#">ENE4041</a> Soil remediation and solid waste management	Engineering minor or level 3 or 4 environmental engineering technical elective

Clayton students enrol in [ENG0001](#) Continuous Professional Development (0 credit points)

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- If you have completed a unit in First Year that is also a core in your specialisation, or if you have completed a unit that is a prohibition to a core unit in your specialisation, you must replace the core with another unit chosen from the environmental engineering technical electives list or from one of the [engineering minors](#). The replacement unit must be at the same level as the core unit or higher.
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- You are required to complete 420 hours of Continuous Professional Development (CPD) in order to graduate. For further information, refer to the [CPD webpage](#).
- For enrolment advice, please refer to the [Course Advisers webpage](#).



## E3001 Bachelor of Engineering (Honours)

## Specialisation – Materials engineering

Year	Period	Units			
1	Sem 1 Feb	Common First Year			
	Sem 2 July				
2	Sem 1 Feb	<a href="#">MTE2101</a> Atomic-scale structure of materials	<a href="#">MTE2102</a> Phase equilibria and phase transformations	<a href="#">MTE2103</a> Mechanical properties of materials	Level 1, 2 or 3 elective or engineering technical elective
	Sem 2 July	<a href="#">MTE2202</a> Functional materials 1	<a href="#">MTE2201</a> Polymers	<a href="#">ENG2005</a> Advanced engineering mathematics	Level 1, 2 or 3 elective or engineering technical elective
3	Sem 1 Feb	<a href="#">MTE3103</a> Materials life cycle	<a href="#">MTE3102</a> Plasticity of metals and alloys	<a href="#">MTE3101</a> Materials in a complex world 1: People, projects and data	Engineering minor or level 3 or 4 materials engineering technical elective
	Sem 2 July	<a href="#">MTE3202</a> Functional materials 2	<a href="#">MTE3203</a> Introduction to ceramics: Properties, processing and applications	<a href="#">MTE3201</a> Materials in a complex world 2: Characterisation, identification and selection	Engineering minor or level 3 or 4 materials engineering technical elective
4	Sem 1 Feb	<a href="#">ENG4701</a> Final year project A	<a href="#">MTE4102</a> Advanced materials processing and manufacturing	<a href="#">MTE4101</a> Integrated design project	Engineering minor or level 3, 4 or 5 materials engineering technical elective
	Sem 2 July	<a href="#">ENG4702</a> Final year project B	<a href="#">Level 4 or 5 MTE-coded materials engineering core elective</a>	<a href="#">Complete one Professional Practice domain unit</a>	Engineering minor or level 3, 4 or 5 materials engineering technical elective

Clayton students enrol in [ENG0001](#) Continuous Professional Development (0 credit points)

### NOTE:

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- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
- If you have completed a unit in First Year that is also a core in your specialisation, or if you have completed a unit that is a prohibition to a core unit in your specialisation, you must replace the core with another unit chosen from the materials engineering technical electives list or from one of the [engineering minors](#). The replacement unit must be at the same level as the core unit or higher.
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- You are required to complete 420 hours of Continuous Professional Development (CPD) in order to graduate. For further information, refer to the [CPD webpage](#).
- For enrolment advice, please refer to the [Course Advisers webpage](#).



## E3001 Bachelor of Engineering (Honours)

## Specialisation – Mechanical engineering

Year	Period	Units			
1	Sem 1 Feb	Common First Year			
	Sem 2 July				
2	Sem 1 Feb	<a href="#">MEC2403</a> Mechanics of materials	<a href="#">MEC2401</a> Dynamics 1	<a href="#">MEC2402</a> Design methods	Level 1, 2 or 3 elective or engineering technical elective
	Sem 2 July	<a href="#">ENG2005</a> Advanced engineering mathematics	<a href="#">MEC2404</a> Mechanics of fluids	<a href="#">MEC2405</a> Thermodynamics	Level 1, 2 or 3 elective or engineering technical elective
3	Sem 1 Feb	<a href="#">MEC3455</a> Solid mechanics	<a href="#">MEC3451</a> Fluid mechanics 2	<a href="#">MEC3456</a> Engineering computational analysis	Engineering minor or level 3 or 4 mechanical engineering technical elective
	Sem 2 July	<a href="#">MEC3453</a> Dynamics 2	<a href="#">MEC3416</a> Machine design	<a href="#">MEC3457</a> Systems and control	Engineering minor or level 3 or 4 mechanical engineering technical elective
4	Sem 1 Feb	<a href="#">ENG4701</a> Final year project A	<a href="#">Complete one Professional Practice domain unit</a>	<a href="#">MEC4408</a> Thermodynamics and heat transfer	Engineering minor or level 3, 4 or 5 mechanical engineering technical elective
	Sem 2 July	<a href="#">ENG4702</a> Final year project B	<a href="#">MEC4407</a> Design project	<a href="#">MEC4426</a> Computer-aided design	Engineering minor or level 3, 4 or 5 mechanical engineering technical elective

Malaysia students enrol in [ENG0002](#)  
Industrial training (0 credit points)

Clayton students enrol in [ENG0001](#)  
Continuous Professional Development  
(0 credit points)

### NOTE:

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- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
- If you have completed a unit in First Year (eg MEC2404) that is also a core in your specialisation, or if you have completed a unit that is a prohibition to a core unit in your specialisation, you must replace the core with another unit chosen from the mechanical engineering technical electives list or from one of the [engineering minors](#). The replacement unit must be at the same level as the core unit or higher.
- **Studying mechanical engineering specialisation in Malaysia:** You must complete MEC3459 to meet the Board of Engineers Malaysia (BEM) requirement for accreditation.
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- You are required to complete the [Continuous Professional Development](#) (if studying in Australia) or [Industrial training](#) (if studying in Malaysia) in order to graduate.
- For enrolment advice, please speak with a course adviser in your specialisation. Refer to the [Course Advisers webpage](#) if you are in Clayton.



## E3001 Bachelor of Engineering (Honours)

## Specialisation – Robotics and mechatronics engineering – *Artificial intelligence stream*

Year	Period	Units			
1	Sem 1 Feb	Common First Year			
	Sem 2 July				
2	Sem 1 Feb	<a href="#">ECE2131</a> Electrical circuits	<a href="#">MEC2402</a> Design methods	<a href="#">ECE2071</a> Computer organisation and programming	Level 1, 2 or 3 elective or engineering technical elective
	Sem 2 July	<a href="#">ENG2005</a> Advanced engineering mathematics	<a href="#">TRC2201</a> Mechanics	<a href="#">ECE2072</a> Digital systems	Level 1, 2 or 3 elective or engineering technical elective
3	Sem 1 Feb	<a href="#">ECE3161</a> Analogue electronics	<a href="#">TRC3200</a> Dynamical systems	<a href="#">TRC3500</a> Sensors and artificial perception	Engineering minor or level 3 or 4 robotics and mechatronics engineering technical elective
	Sem 2 July	<a href="#">TRC3600</a> Modelling and control	<a href="#">ECE4078</a> Intelligent robotics	<a href="#">ECE4179</a> Neural networks and deep learning	Engineering minor or level 3 or 4 robotics and mechatronics engineering technical elective
4	Sem 1 Feb	<a href="#">ENG4701</a> Final year project A	<a href="#">TRC4800</a> Robotics	<a href="#">ECE4076</a> Computer vision	Engineering minor or level 3, 4 or 5 robotics and mechatronics engineering technical elective
	Sem 2 July	<a href="#">ENG4702</a> Final year project B	<a href="#">Complete one Professional Practice domain unit</a>	<a href="#">ECE4191</a> Engineering integrated design	Engineering minor or level 3, 4 or 5 robotics and mechatronics engineering technical elective

**Malaysia students enrol in**  
[ENG0002](#) Industrial training (0 credit points)

**Clayton students enrol in** [ENG0001](#)  
Continuous Professional Development (0 credit points)

### NOTE:

- [MINORS AND TECHNICAL ELECTIVES LIST](#) is located on the Faculty's current student course information webpage
- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
- If you have completed a unit in First Year (eg ECE2072) that is also a core in your specialisation, or if you have completed a unit that is a prohibition to a core unit in your specialisation, you must replace the core with another unit chosen from the robotics and mechatronics engineering technical electives list or from one of the [engineering minors](#). The replacement unit must be at the same level as the core unit or higher.
- **Studying robotics and mechatronics engineering specialisation in Malaysia:** You must complete [(ECE3051 or MEC3416) and TRC4802] to meet Engineering Accreditation Council Malaysia (EAC) requirement for accreditation.
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- You are required to complete the [Continuous Professional Development](#) (if studying in Australia) or [Industrial training](#) (if studying in Malaysia) in order to graduate.
- For enrolment advice, please speak with a course adviser in your specialisation. Refer to the [Course Advisers webpage](#) if you are in Clayton.



## E3001 Bachelor of Engineering (Honours)

## Specialisation – Robotics and mechatronics engineering – *Automation stream*

Year	Period	Units				
1	Sem 1 Feb	Common First Year				
	Sem 2 July					
2	Sem 1 Feb	<a href="#">ECE2131</a> Electrical circuits	<a href="#">MEC2402</a> Design methods	<a href="#">ECE2071</a> Computer organisation and programming	Level 1, 2 or 3 elective or engineering technical elective	
	Sem 2 July	<a href="#">ENG2005</a> Advanced engineering mathematics	<a href="#">TRC2201</a> Mechanics	<a href="#">ECE2072</a> Digital systems	Level 1, 2 or 3 elective or engineering technical elective	
3	Sem 1 Feb	<a href="#">ECE3161</a> Analogue electronics	<a href="#">TRC3200</a> Dynamical systems	<a href="#">TRC3500</a> Sensors and artificial perception	Engineering minor or level 3 or 4 robotics and mechatronics engineering technical elective	
	Sem 2 July	<a href="#">TRC3600</a> Modelling and control	<a href="#">TRC4902</a> Mechatronics and manufacturing	<a href="#">TRC4802</a> Thermo-fluids and power systems	Engineering minor or level 3 or 4 robotics and mechatronics engineering technical elective	Malaysia students enrol in <a href="#">ENG0002</a> Industrial training (0 credit points)
4	Sem 1 Feb	<a href="#">ENG4701</a> Final year project A	<a href="#">TRC4800</a> Robotics	<a href="#">TRC4200</a> Engineering cyber-physical systems	Engineering minor or level 3, 4 or 5 robotics and mechatronics engineering technical elective	Clayton students enrol in <a href="#">ENG0001</a> Continuous Professional Development (0 credit points)
	Sem 2 July	<a href="#">ENG4702</a> Final year project B	<a href="#">Complete one Professional Practice domain unit</a>	<a href="#">TRC4407</a> Automation design project	Engineering minor or level 3, 4 or 5 robotics and mechatronics engineering technical elective	

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- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
- If you have completed a unit in First Year (eg ECE2072) that is also a core in your specialisation, or if you have completed a unit that is a prohibition to a core unit in your specialisation, you must replace the core with another unit chosen from the robotics and mechatronics engineering technical electives list or from one of the [engineering minors](#). The replacement unit must be at the same level as the core unit or higher.
- **Studying robotics and mechatronics engineering specialisation in Malaysia:** You must complete [(ECE3051 or MEC3416) and TRC4802] to meet Engineering Accreditation Council Malaysia (EAC) requirement for accreditation.
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- You are required to complete the [Continuous Professional Development](#) (if studying in Australia) or [Industrial training](#) (if studying in Malaysia) in order to graduate.
- For enrolment advice, please speak with a course adviser in your specialisation. Refer to the [Course Advisers webpage](#) if you are in Clayton.



## 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 should be used in conjunction with the requirements of the course as specified in the [Handbook](#). The map is subject to updates. Update version: 5 June 2023

### E3001 Bachelor of Engineering (Honours)

### Specialisation – Software engineering

Year	Period	Units			
1	Sem 1 Feb	Common First Year			
	Sem 2 July				
2	Sem 1 Feb	<a href="#">FIT2085</a> Introduction to computer science for engineers	<a href="#">MAT1830</a> Discrete mathematics for computer science	<a href="#">FIT2099</a> Object-oriented design and implementation	Level 1, 2 or 3 elective or engineering technical elective
	Sem 2 July	<a href="#">FIT2101</a> Software engineering process and management	<a href="#">FIT2004</a> Algorithms and data structures	<a href="#">FIT2107</a> Software quality and testing	Level 1, 2 or 3 elective or engineering technical elective
3	Sem 1 Feb	<a href="#">FIT3159</a> Computer architecture	<a href="#">FIT3077</a> Software engineering: Architecture and design	<a href="#">FIT3170</a> Software engineering practice (12 points)	Level 3 or 4 software engineering technical elective
	Sem 2 July	<a href="#">FIT2100</a> Operating systems	<a href="#">FIT3171</a> Databases		Level 3 or 4 software engineering technical elective
4	Sem 1 Feb	<a href="#">FIT4002</a> Software engineering industry experience studio project (12 points)	<a href="#">FIT4701</a> Final year project A	<a href="#">FIT4165</a> Computer networks	Level 3, 4 or 5 software engineering technical elective
	Sem 2 July		<a href="#">FIT4702</a> Final year project B	<a href="#">Level 4 or 5 software engineering core elective</a>	Level 3, 4 or 5 software engineering technical elective

Malaysia students enrol in [ENG0002](#) Industrial training (0 credit points)

Clayton students enrol in [ENG0001](#) Continuous Professional Development (0 credit points)

#### NOTE:

- [MINORS AND TECHNICAL ELECTIVES LIST](#) is located on the Faculty's current student course information webpage
- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
- If you have completed a unit in First Year (eg MAT1830 or FIT2085) that is also a core in your specialisation, or if you have completed a unit that is a prohibition to a core unit in your specialisation, you must replace the core with another unit chosen from the software engineering technical electives list. The replacement unit must be at the same level as the core unit or higher.
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- Engineering minors are not available within the Software engineering specialisation.
- Enrolled in the Industry Based Learning placement program – You will have a different progression map, with your placement in Semester 2 of third year. You will need to overload in one semester or complete a summer semester unit.
- You are required to complete the [Continuous Professional Development](#) (if studying in Australia) or [Industrial training](#) (if studying in Malaysia) in order to graduate. For enrolment advice, please speak with a course adviser in your specialisation. Refer to the [Course Advisers webpage](#) if you are in Clayton.



## 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 should be used in conjunction with the requirements of the course as specified in the [Handbook](#). The map is subject to updates. Update version: 5 June 2023

### E3001 Bachelor of Engineering (Honours)

### Specialisation – Software engineering – *Industry-based Learning*

Year	Period	Units			
1	Sem 1 Feb	Common First Year			
	Sem 2 July				
2	Sem 1 Feb	<a href="#">FIT2085</a> Introduction to computer science for engineers	<a href="#">MAT1830</a> Discrete mathematics for computer science	<a href="#">FIT2099</a> Object-oriented design and implementation	Level 1, 2 or 3 elective or engineering technical elective
	Sem 2 July	<a href="#">FIT2101</a> Software engineering process and management	<a href="#">FIT2004</a> Algorithms and data structures	<a href="#">FIT2107</a> Software quality and testing	<a href="#">FIT2100</a> Operating systems
3	Sem 1 Feb	<a href="#">FIT3159</a> Computer architecture	<a href="#">FIT3077</a> Software engineering: Architecture and design	<a href="#">FIT3171</a> Databases	Level 3 or 4 software engineering technical elective
	Sem 2 July	<a href="#">FIT4042</a> Industry based learning (18 points)			*See footnote
4	Sem 1 Feb	<a href="#">FIT3170</a> Software engineering practice (12 points)	<a href="#">FIT4701</a> Final year project A	<a href="#">FIT4165</a> Computer networks	Level 3 or 4 software engineering technical elective
	Sem 2 July		<a href="#">FIT4702</a> Final year project B	Level 3 or 4 software engineering technical elective	Level 3, 4 or 5 software engineering technical elective

#### NOTE:

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- Each unit requires 12 hours of work per week. A full-time study week totals 48 hours. If you are unable to commit 48 hours of study due to external commitments, please speak with a course advisor about options to study less units per semester or take some units in the summer semester.
- If you have completed a unit in First Year (eg MAT1830 or FIT2085) that is also a core in your specialisation, or if you have completed a unit that is a prohibition to a core unit in your specialisation, you must replace the core with another unit chosen from the software engineering technical electives list. The replacement unit must be at the same level as the core unit or higher.
- The placement of units may be rearranged to support sequencing for double degree courses but care should be taken to ensure sequenced units are maintained in sequence.
- Engineering minors are not available within the Software engineering specialisation.
- \* Depending on placement location when you undertake FIT4042, you will have to either overload a semester, undertake a summer unit or extend an additional semester in order to complete your course.
- You are required to complete the [Continuous Professional Development](#) (if studying in Australia) or [Industrial training](#) (if studying in Malaysia) in order to graduate.
- For enrolment advice, please speak with a course adviser in your specialisation. Refer to the [Course Advisers webpage](#) if you are in Clayton.