

## 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 does not substitute for the list of required units as described in the course 'Requirements' section of the [Handbook](#). Please note that the map is subject to updates. Updated 16 January 2024

### E3010 Bachelor of Engineering (Honours) and Bachelor of Computer Science Common First Year

You do not have VCE Units 3 & 4 Specialist Maths >30 study score <u>and</u> VCE Units 3 & 4 Physics >25 study score: You must enrol in Foundation mathematics (ENG1090) <u>and</u> Foundation physics (PHS1001)					
Year	Sem	Units			
1	Sem 1 Feb	<a href="#">ENG1012</a> Engineering design	<a href="#">PHS1001</a> Foundation physics * <i>Corequisite: ENG1090 *</i>	<a href="#">ENG1090</a> Foundation mathematics *	<a href="#">FIT1045</a> Introduction to programming
	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>	<a href="#">FIT1008</a> Introduction to computer science
You must complete ENG1013 Engineering smart systems in Year 1 and take ENG1011 Engineering methods in Year 2 (Semester 1) as an overload. This will increase the total credit points needed for the double degree by 6 points You cannot swap the semesters of any of the units.					

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 *	<a href="#">FIT1045</a> Introduction to programming
	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>	<a href="#">FIT1008</a> Introduction to computer science
Tip: You can swap the semesters of ENG1013 and FIT1008.					

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="#">ENG1012</a> Engineering design	<a href="#">ENG1013</a> Engineering smart systems	<a href="#">PHS1001</a> Foundation physics * <i>Corequisite: ENG1090 *</i>	<a href="#">FIT1045</a> Introduction to programming
	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="#">FIT1008</a> Introduction to computer science
Tip: You can swap the semesters of ENG1013 and FIT1008.					

You have completed VCE Units 3 & 4 Physics >25 study score <u>and</u> VCE Units 3 and 4 Specialist Maths >30 study score: No foundation units are required					
1	Sem 1 Feb	<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="#">FIT1045</a> Introduction to programming
	Sem 2 July	<a href="#">ENG1012</a> Engineering design	<a href="#">ENG1013</a> Engineering smart systems	<a href="#">First Year engineering breadth study</a>	<a href="#">FIT1008</a> Introduction to computer science
Tip: You can swap the semesters of your engineering elective and FIT1045.					

#### NOTE:

- \* Foundation units: You 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](#).
- 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 refer to the [Course advisers webpage](#).

## E3010 Bachelor of Engineering (Honours) and Bachelor of Computer Science

Engineering specialisation - Electrical and computer systems engineering

IT specialisation - Advanced computer science

	Bachelor of Electrical and Computer Systems Engineering (Honours)		Bachelor of Computer Science		
Year 1 Semester 1 February	Common First Year			<a href="#">FIT1045</a> Introduction to programming	
Year 1 Semester 2 July				<a href="#">FIT1008</a> Introduction to computer science	
Year 2 Semester 1 February	<a href="#">ENG2005</a> Advanced engineering mathematics	<a href="#">ECE2071</a> Computer organisation and programming	<a href="#">FIT1047</a> Introduction to computer systems, networks and security	<a href="#">MAT1830</a> Discrete mathematics for computer science	If two foundation units are required, then overload is required for <a href="#">ENG1011</a> Engineering methods
Year 2 Semester 2 July	<a href="#">ECE2191</a> Probability and AI for engineers	<a href="#">ECE2072</a> Digital systems	<a href="#">FIT1049</a> IT professional practice	FIT elective	
Year 3 Semester 1 February	<a href="#">ECE3073</a> Computer systems	<a href="#">ECE2131</a> Electrical circuits	<a href="#">FIT2004</a> Algorithms and data structures	<a href="#">FIT2099</a> Object-oriented design and implementation	
Year 3 Semester 2 July	<a href="#">ECE2111</a> Signals and systems	<a href="#">ECE3121</a> Engineering electromagnetics	<a href="#">FIT2014</a> Theory of computation	<a href="#">FIT2102</a> Programming paradigms	
Year 4 Semester 1 February	<a href="#">ECE3161</a> Analogue electronics	<a href="#">ECE3141</a> Information and networks	<a href="#">FIT3171</a> Databases	Level 3 computer science approved elective	
Year 4 Semester 2 July	<a href="#">ECE4132</a> Control system design	<a href="#">Level 4 or 5 ECE-coded core elective</a>	<a href="#">FIT3155</a> Advanced data structures and algorithms	<a href="#">FIT3143</a> Parallel computing	
Year 5 Semester 1 February	<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>	<a href="#">FIT3161</a> Computer science project 1	<a href="#">ENG0001</a> Continuous Professional Development (0 credit points)
Year 5 Semester 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>	<a href="#">FIT3162</a> Computer science project 2	

### NOTE:

- **ECE2072** - If you have completed the unit as a First Year elective, you must replace the core with another unit from the electrical and computer systems engineering technical electives list or from one of the [engineering minors](#). The replacement unit must be of the same level as the core unit or higher.
- Engineering minors are not available in the Engineering double degree courses.
- You are required to complete at least 420 hours of Continuous Professional Development (CPD) in order to graduate. For further information refer to the [CPD 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.
- For enrolment advice, please refer to the [Course advisers webpage](#).

## E3010 Bachelor of Engineering (Honours) and Bachelor of Computer Science

Engineering specialisation – Robotics and mechatronics engineering (*Artificial intelligence stream*)  
IT specialisation - Advanced computer science

	Bachelor of Robotics and Mechatronics Engineering (Honours)		Bachelor of Computer Science		
Year 1 Semester 1 February	Common First Year			<a href="#">FIT1045</a> Introduction to programming	
Year 1 Semester 2 July				<a href="#">FIT1008</a> Introduction to computer science	
Year 2 Semester 1 February	<a href="#">ECE2071</a> Computer organisation and programming	<a href="#">ECE2131</a> Electrical circuits	<a href="#">FIT1047</a> Introduction to computer systems, networks and security	<a href="#">MAT1830</a> Discrete mathematics for computer science	If two foundation units are required, then overload is required for <a href="#">ENG1011</a> Engineering methods
Year 2 Semester 2 July	<a href="#">ECE2072</a> Digital systems	<a href="#">ENG2005</a> Advanced engineering mathematics	<a href="#">FIT1049</a> IT professional practice	FIT elective	
Year 3 Semester 1 February	<a href="#">ECE3161</a> Analogue electronics	<a href="#">MEC2402</a> Design methods	<a href="#">FIT2004</a> Algorithms and data structures	<a href="#">FIT2099</a> Object-oriented design and implementation	
Year 3 Semester 2 July	<a href="#">TRC3600</a> Modelling and control	<a href="#">TRC2201</a> Mechanics	<a href="#">FIT2014</a> Theory of computation	<a href="#">FIT2102</a> Programming paradigms	
Year 4 Semester 1 February	<a href="#">TRC3500</a> Sensors and artificial perception	<a href="#">TRC3200</a> Dynamical systems	<a href="#">FIT3171</a> Databases	Level 3 computer science approved elective	
Year 4 Semester 2 July	<a href="#">ECE4179</a> Neural networks and deep learning	<a href="#">ECE4078</a> Intelligent robotics	<a href="#">FIT3155</a> Advanced data structures and algorithms	<a href="#">FIT3143</a> Parallel computing	
Year 5 Semester 1 February	<a href="#">ENG4701</a> Final year project A	<a href="#">TRC4800</a> Robotics	<a href="#">ECE4076</a> Computer vision	<a href="#">FIT3161</a> Computer science project 1	<a href="#">ENG0001</a> Continuous Professional Development (0 credit points)
Year 5 Semester 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>	<a href="#">FIT3162</a> Computer science project 2	

### NOTE:

- 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 slot 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.
  - 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](#) 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.

## E3010 Bachelor of Engineering (Honours) and Bachelor of Computer Science

Engineering specialisation – Robotics and mechatronics engineering (*Automation stream*)

IT specialisation - Advanced computer science

	Bachelor of Robotics and Mechatronics Engineering (Honours)		Bachelor of Computer Science		
Year 1 Semester 1 February	Common First Year			<a href="#">FIT1045</a> Introduction to programming	
Year 1 Semester 2 July				<a href="#">FIT1008</a> Introduction to computer science	
Year 2 Semester 1 February	<a href="#">ECE2071</a> Computer organisation and programming	<a href="#">ECE2131</a> Electrical circuits	<a href="#">FIT1047</a> Introduction to computer systems, networks and security	<a href="#">MAT1830</a> Discrete mathematics for computer science	If two foundation units are required, then overload is required for <a href="#">ENG1011</a> Engineering methods
Year 2 Semester 2 July	<a href="#">ECE2072</a> Digital systems	<a href="#">ENG2005</a> Advanced engineering mathematics	<a href="#">FIT1049</a> IT professional practice	FIT elective	
Year 3 Semester 1 February	<a href="#">ECE3161</a> Analogue electronics	<a href="#">MEC2402</a> Design methods	<a href="#">FIT2004</a> Algorithms and data structures	<a href="#">FIT2099</a> Object-oriented design and implementation	
Year 3 Semester 2 July	<a href="#">TRC3600</a> Modelling and control	<a href="#">TRC2201</a> Mechanics	<a href="#">FIT2014</a> Theory of computation	<a href="#">FIT2102</a> Programming paradigms	
Year 4 Semester 1 February	<a href="#">TRC3500</a> Sensors and artificial perception	<a href="#">TRC3200</a> Dynamical systems	<a href="#">FIT3171</a> Databases	Level 3 computer science approved elective	
Year 4 Semester 2 July	<a href="#">TRC4902</a> Mechatronics and manufacturing	<a href="#">TRC4802</a> Thermo-fluids and power systems	<a href="#">FIT3155</a> Advanced data structures and algorithms	<a href="#">FIT3143</a> Parallel computing	
Year 5 Semester 1 February	<a href="#">ENG4701</a> Final year project A	<a href="#">TRC4800</a> Robotics	<a href="#">TRC4200</a> Engineering cyber-physical systems	<a href="#">FIT3161</a> Computer science project 1	<a href="#">ENG0001</a> Continuous Professional Development (0 credit points)
Year 5 Semester 2 July	<a href="#">ENG4702</a> Final year project B	<a href="#">TRC4407</a> Automation design project	<a href="#">Complete one Professional Practice domain unit</a>	<a href="#">FIT3162</a> Computer science project 2	

### NOTE:

- 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 slot 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.
- 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](#) 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.

## E3010 Bachelor of Engineering (Honours) and Bachelor of Computer Science

Engineering specialisation - Software engineering

IT specialisation - Advanced computer science

	Bachelor of Software Engineering (Honours)		Bachelor of Computer Science		
Year 1 Semester 1 February	Common First Year			<a href="#">FIT1045</a> Introduction to programming	
Year 1 Semester 2 July				<a href="#">FIT1008</a> Introduction to computer science	
Year 2 Semester 1 February	<a href="#">MAT1830</a> Discrete mathematics for computer science	<a href="#">Software engineering technical elective</a>	<a href="#">FIT1047</a> Introduction to computer systems, networks and security	FIT elective	If two foundation units are required then overload is required for <a href="#">ENG1011</a> Engineering methods
Year 2 Semester 2 July	<a href="#">FIT2004</a> Algorithms and data structures	<a href="#">FIT2101</a> Software engineering process and management	<a href="#">FIT1049</a> IT professional practice	FIT elective	
Year 3 Semester 1 February	<a href="#">FIT3159</a> Computer architecture	<a href="#">FIT2099</a> Object oriented design and implementation	Level 2 FIT elective	Any level 3 unit from list B of the advanced computer science specialisation	
Year 3 Semester 2 July	<a href="#">FIT2107</a> Software quality and testing	<a href="#">FIT2100</a> Operating systems	<a href="#">FIT2014</a> Theory of computation	<a href="#">FIT2102</a> Programming paradigms	
Year 4 Semester 1 February	<a href="#">FIT3170</a> Software engineering practice (12 points)	<a href="#">FIT3077</a> Software engineering: architecture and design	Level 3 computer science approved elective	Level 3 computer science approved elective	
Year 4 Semester 2 July		<a href="#">FIT3171</a> Databases	<a href="#">FIT3155</a> Advanced data structures and algorithms	<a href="#">FIT3143</a> Parallel computing	
Year 5 Semester 1 February	<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	<a href="#">FIT3161</a> Computer science project 1	<a href="#">ENG0001</a> Continuous Professional Development (0 credit points)
Year 5 Semester 2 July		<a href="#">FIT4702</a> Final year project B	<a href="#">Level 4 or 5 software engineering core elective</a>	<a href="#">FIT3162</a> Computer science project 2	

### NOTE:

- **MAT1830 or FIT2085** - If you have completed either unit as a First Year technical elective, you must replace the core with another unit from the software engineering technical electives list. The replacement unit must be of the same level as the core unit or higher.
- Engineering minors are not available in the Engineering double degree courses.
- You are required to complete at least 420 hours of Continuous Professional Development (CPD) in order to graduate. For further information refer to the [CPD 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.
- For enrolment advice, please refer to the [Course advisers webpage](#).