

## Course progression map for 2022 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. Update version: 18 December 2023

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

#### Common first year

If no foundation units are required:					
Year	Sem	Units			
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> Algorithms and programming fundamentals in Python
	Sem 2 July	<a href="#">ENG1012</a> Engineering design	<a href="#">ENG1013</a> Engineering smart systems	<a href="#">First Year engineering technical elective</a>	<a href="#">FIT1008</a> Introduction to computer science

Tip: You can swap the semesters of your engineering elective and FIT1045.

If you need to enrol in foundation physics and maths*:					
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> Algorithms and programming fundamentals in Python
	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.

If you need to enrol in foundation maths:					
1	Sem 1 Feb	<a href="#">ENG1012</a> Engineering design	<a href="#">ENG1013</a> Engineering smart systems	<a href="#">ENG1090</a> Foundation mathematics *	<a href="#">FIT1045</a> Algorithms and programming fundamentals in Python
	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.

If you need to enrol in foundation physics:					
1	Sem 1 Feb	<a href="#">ENG1012</a> Engineering design	<a href="#">ENG1013</a> Engineering smart systems	<a href="#">PHS1001</a> Foundation physics *	<a href="#">FIT1045</a> Algorithms and programming fundamentals in Python
	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.

#### 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](#).
- For enrolment advice, please refer to the [Course advisers webpage](#).

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### 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> Algorithms and programming fundamentals in Python	
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 models in engineering	<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	ECE3121 Engineering electromagnetics <small>Replace ECE3121 with <a href="#">ECE3122</a> in 2024</small>	<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="#">ECE4099</a> Professional practice	<a href="#">FIT3162</a> Computer science project 2	

#### NOTE:

- **ECE2071 or ECE2072** - If you have completed either units 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](#).
- For enrolment advice, please refer to the [Course advisers webpage](#).

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### 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> Algorithms and programming fundamentals in Python	
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="#">FIT4003</a> Software engineering research project Replace with <a href="#">FIT4701</a> from 2023	<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		Replace with <a href="#">FIT4702</a> from 2023	Level 4 or 5 software engineering core elective	<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](#).
- For enrolment advice, please refer to the [Course advisers webpage](#).