# MONASH University

# 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

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

### 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 | FIT1045 Algorithms and programming fundamentals in Python |
| | 2 | ENG1002 Engineering design: cleaner, safer, smarter | ENG1003 Engineering mobile apps | First Year engineering elective unit | FIT1008 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*:**

| Year | Sem | Units | | | |
|---|---|---|---|---|---|
| 1 | 1 | ENG1002 Engineering design: cleaner, safer, smarter | PHS1001 Foundation physics | ENG1090 Foundation mathematics | FIT1045 Algorithms and programming fundamentals in Python |
| | 2 | ENG1003 Engineering mobile apps | ENG1005 Engineering mathematics | ENG1060 Computing for engineers | FIT1008 Introduction to computer science |

1. If you require two foundation units, you will need to take the remaining core unit ENG1001 Engineering design: lighter, faster, stronger 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.
2. If you want 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:**

| Year | Sem | Units | | | |
|---|---|---|---|---|---|
| 1 | 1 | ENG1002 Engineering design: cleaner, safer, smarter | ENG1003 Engineering mobile apps | ENG1090 Foundation mathematics | FIT1045 Algorithms and programming fundamentals in Python |
| | 2 | ENG1001 Engineering design: lighter, faster, stronger | ENG1005 Engineering mathematics | ENG1060 Computing for engineers | FIT1008 Introduction to computer science |

Tip: You can swap the semesters of ENG1003 and FIT1008.

**If you need to enrol in foundation physics:**

| Year | Sem | Units | | | |
|---|---|---|---|---|---|
| 1 | 1 | ENG1002 Engineering design: cleaner, safer, smarter | ENG1003 Engineering mobile apps | PHS1001 Foundation physics | FIT1045 Algorithms and programming fundamentals in Python |
| | 2 | ENG1001 Engineering design: lighter, faster, stronger | ENG1005 Engineering mathematics | ENG1060 Computing for engineers | FIT1008 Introduction to computer science |

Tip: You can swap the semesters of ENG1003 and FIT1008.

Note:
· 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

### Specialisation - Electrical and Computer Systems Engineering and Advanced Computer Science

|  | Bachelor of Electrical and Computer Systems Engineering (Honours) | | Bachelor of Computer Science | | |
|---|---|---|---|---|---|
| **YEAR 1** Semester 1 | **Common first year** | | | FIT1045 Algorithms and programming fundamentals in Python | |
| **YEAR 1** Semester 2 | | | | FIT1008 Introduction to computer science | |
| **YEAR 2** Semester 1 | ENG2005 Advanced engineering mathematics | ECE2071 Computer organisation and programming | FIT1047 Introduction to computer systems, networks and security | MAT1830 Discrete mathematics for computer science | If two foundation units are required then overload is required for ENG1001 Engineering design: lighter, faster, stronger |
| **YEAR 2** Semester 2 | ECE2191 Probability models in engineering | ECE2072 Digital systems | FIT1049 IT professional practice | FIT elective | |
| **YEAR 3** Semester 1 | ECE3073 Computer systems | ECE2131 Electrical circuits | FIT2004 Algorithms and data structures | FIT2099 Object-oriented design and implementation | |
| **YEAR 3** Semester 2 | ECE2111 Signals and systems | ECE3121 Engineering electromagnetics Replace ECE3121 with ECE3122 in 2024 | FIT2014 Theory of computation | FIT2102 Programming paradigms | |
| **YEAR 4** Semester 1 | ECE3161 Analogue electronics | ECE3141 Information and networks | FIT3171 Databases | Level 3 computer science approved elective | |
| **YEAR 4** Semester 2 | ECE4132 Control system design | Level 4 or 5 ECE-coded core elective | FIT3155 Advanced data structures and algorithms | FIT3143 Parallel computing | |
| **YEAR 5** Semester 1 | ENG4701 Final year project A | ECE3051 Electrical energy systems | ECE4099 Professional practice | FIT3161 Computer science project 1 | ENG0001 Continuous Professional Development (0 credit points) |
| **YEAR 5** Semester 2 | ENG4702 Final year project B | ECE4191 Engineering integrated design | Level 4 or 5 ECE-coded core elective | FIT3162 Computer science project 2 | |

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

### Specialisation – Software Engineering and Advanced Computer Science

| | Bachelor of Software Engineering (Honours) | | Bachelor of Computer Science | | |
|---|---|---|---|---|---|
| **YEAR 1** Semester 1 | **Common first year** | | | FIT1045 Algorithms and programming fundamentals in Python | If two foundation units are required then overload is required for ENG1001 Engineering design: lighter, faster, stronger |
| **YEAR 1** Semester 2 | | | | FIT1008 Introduction to computer science | |
| **YEAR 2** Semester 1 | MAT1830 Discrete mathematics for computer science | Software engineering approved elective | FIT1047 Introduction to computer systems, networks and security | FIT elective | |
| **YEAR 2** Semester 2 | FIT2004 Algorithms and data structures | FIT2101 Software engineering process and management | FIT1049 IT professional practice | FIT elective | |
| **YEAR 3** Semester 1 | FIT3159 Computer architecture | FIT2099 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 | FIT2107 Software quality and testing | FIT2100 Operating systems | FIT2014 Theory of computation | FIT2102 Programming paradigms | |
| **YEAR 4** Semester 1 | FIT3170 Software engineering practice (12 points) | FIT3077 Software engineering: architecture and design | Level 3 computer science approved elective | Level 3 computer science approved elective | |
| **YEAR 4** Semester 2 | | FIT3171 Databases | FIT3155 Advanced data structures and algorithms | FIT3143 Parallel computing | |
| **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 | FIT3161 Computer science project 1 | ENG0001 Continuous Professional Development (0 credit points) |
| **YEAR 5** Semester 2 | | Replace with FIT4702 from 2023 | Level 4 or 5 software engineering core elective | FIT3162 Computer science project 2 | |

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