MONASH University

# Course progression map for 2019 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. Last update: 14 November 2022

## E3011 Bachelor of Engineering (Honours) and Bachelor of Information Technology

### 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 | FIT1047 Introduction to computer systems networks and security |
| | 2 | ENG1002 Engineering design: cleaner, safer, smarter | ENG1003 Engineering mobile apps | First year engineering elective unit | FIT1048 Fundamentals of C++ or FIT1045 Algorithms and programming fundamentals in Python or FIT1051 Programming fundamentals in Java |

Tip: You can swap the semesters of your engineering elective and FIT1047.

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

| | | | | | |
|---|---|---|---|---|---|
| 1 | 1 | ENG1002 Engineering design: cleaner, safer, smarter | PHS1001 Foundation physics | ENG1090 Foundation mathematics | FIT1047 Introduction to computer systems networks and security |
| | 2 | ENG1003 Engineering mobile apps | ENG1005 Engineering mathematics | ENG1060 Computing for engineers | FIT1048 Fundamentals of C++ or FIT1045 Algorithms and programming fundamentals in Python or FIT1051 Programming fundamentals in Java |

* Double degree students requiring two foundation units 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.

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

| | | | | | |
|---|---|---|---|---|---|
| 1 | 1 | ENG1002 Engineering design: cleaner, safer, smarter | ENG1003 Engineering mobile apps | ENG1090 Foundation mathematics | FIT1047 Introduction to computer systems networks and security |
| | 2 | ENG1001 Engineering design: lighter, faster, stronger | ENG1005 Engineering mathematics | ENG1060 Computing for engineers | FIT1048 Fundamentals of C++ or FIT1045 Algorithms and programming fundamentals in Python or FIT1051 Programming fundamentals in Java |

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

| | | | | | |
|---|---|---|---|---|---|
| 1 | 1 | ENG1002 Engineering design: cleaner, safer, smarter | ENG1003 Engineering mobile apps | PHS1001 Foundation physics | FIT1047 Introduction to computer systems networks and security |
| | 2 | ENG1001 Engineering design: lighter, faster, stronger | ENG1005 Engineering mathematics | ENG1060 Computing for engineers | FIT1048 Fundamentals of C++ or FIT1045 Algorithms and programming fundamentals in Python or FIT1051 Programming fundamentals in Java |

Note:

- All students 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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## E3011 Bachelor of Engineering (Honours) and Bachelor of Information Technology

### Engineering specialisation - Electrical and computer systems engineering; IT major – Computer networks and security

| | Bachelor of Electrical and Computer Systems Engineering (Honours) | | Bachelor of Information Technology | | |
|---|---|---|---|---|---|
| **YEAR 1** Sem 1 | **Common First Year** | | | FIT1047 Introduction to computer systems networks and security | |
| **YEAR 1** Sem 2 | | | | FIT1048 Fundamentals of C++ or FIT1045 Algorithms and programming fundamentals in Python or FIT1051 Programming fundamentals in Java | |
| **YEAR 2** Sem 1 | ENG2005 Advanced engineering mathematics | ECE2071 Computer organisation and programming | FIT2094 Databases | FIT2093 Introduction to cyber security | If two foundation units are required then overload is required for PHS1001 Foundation physics |
| **YEAR 2** Sem 2 | ECE2191 Probability models in engineering | ECE2072 Digital systems | FIT1049 IT professional practice | FIT2100 Operating systems | |
| **YEAR 3** Sem 1 | ECE3073 Computer systems | ECE2131 Electrical circuits | FIT elective | FIT2001 Systems development or FIT2099 Object-oriented design and implementation | |
| **YEAR 3** Sem 2 | ECE2111 Signals and systems | ECE3121 Engineering electromagnetics | FIT2002 IT project management | FIT elective | |
| **YEAR 4** Sem 1 | ECE3161 Analogue electronics | ECE3141 Information and networks | FIT3173 Software security | FIT3165 Computer networks | |
| **YEAR 4** Sem 2 | ECE4132 Control system design | Level 4 or 5 ECE-coded core elective | FIT3031 Network security | FIT2081 Mobile applications development or FIT3142 Distributed computing | |
| **YEAR 5** Sem 1 | ECE4094 Project A Replace with ENG4701 from 2022 | ECE3051 Electrical energy systems | ECE4099 Professional practice | FIT3047 IE Studio Project 1 | ENG001 Continuous Professional Development (0 credit points) |
| **YEAR 5** Sem 2 | ECE4095 Project B Replace with ENG4702 from 2022 | ECE3091 Engineering design Replace with ECE4191 from 2022 | Level 4 or 5 ECE-coded core elective | FIT3048 IE Studio Project 2 | |

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## E3011 Bachelor of Engineering (Honours) and Bachelor of Information Technology

### Engineering specialisation - Software engineering; IT major – Computer Networks and Security

| | Bachelor of Software Engineering (Honours) | | Bachelor of Information Technology | | |
|---|---|---|---|---|---|
| **YEAR 1** Sem 1 | **Common First Year** | | | FIT1047 Introduction to computer systems, networks and security | |
| **YEAR 1** Sem 2 | | | | FIT1048 Fundamentals of C++ or FIT1045 Algorithms and programming fundamentals in Python or FIT1051 Programming fundamentals in Java | |
| **YEAR 2** Sem 1 | MAT1830 Discrete mathematics for computer science | FIT2085 Introduction to computer science | FIT2094 Databases | FIT2093 Introduction to cyber security | If two foundation units are required then overload is required for PHS1001 Foundation physics |
| **YEAR 2** Sem 2 | FIT2004 Algorithms and data structures | FIT2101 Software engineering process and management | FIT1049 IT professional practice | FIT elective | |
| **YEAR 3** Sem 1 | FIT3159 Computer architecture | FIT2099 Object oriented design and implementation | FIT elective | FIT2001 Systems development | |
| **YEAR 3** Sem 2 | FIT2107 Software quality and testing | FIT2100 Operating systems | FIT2002 IT project management | FIT elective | |
| **YEAR 4** Sem 1 | FIT3170 Software engineering practice (12 points) | FIT3077 Software engineering: architecture and design | FIT3173 Software security | FIT2081 Mobile applications development | |
| **YEAR 4** Sem 2 | | Level 3 or 4 software engineering approved elective | FIT3031 Network security | FIT3142 Distributed computing | |
| **YEAR 5** Sem 1 | FIT4002 Software engineering industry experience studio project (12 points) | FIT4003 Software engineering research project<br>Replace with FIT4701 from 2023 | FIT4165 Computer networks | FIT3047 IE Studio Project 1 | ENG001 Continuous Professional Development (0 credit points) |
| **YEAR 5** Sem 2 | | Replace with FIT4702 from 2023 | Level 4 or 5 software engineering core elective | FIT3048 IE Studio Project 2 | |

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