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

## Common first year

### If no foundation units are required:

<table>
<thead>
<tr>
<th>Year</th>
<th>Sem</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>ENG1011</strong> Engineering methods</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>ENG1005</strong> Engineering mathematics</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>ENG1014</strong> Engineering numerical analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>FIT1045</strong> Algorithms and programming fundamentals in Python</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Sem</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>ENG1012</strong> Engineering design</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>PHS1001</strong> Foundation physics *</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>ENG1090</strong> Foundation mathematics *</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>FIT1045</strong> Algorithms and programming fundamentals in Python</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Year</th>
<th>Sem</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>ENG1012</strong> Engineering design</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>ENG1013</strong> Engineering smart systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>ENG1090</strong> Foundation mathematics *</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>FIT1045</strong> Algorithms and programming fundamentals in Python</td>
</tr>
</tbody>
</table>

Tip: You can swap the semesters of ENG1013 and FIT1008.

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Sem</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>ENG1012</strong> Engineering design</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>ENG1013</strong> Engineering smart systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>PHS1001</strong> Foundation physics *</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>FIT1045</strong> Algorithms and programming fundamentals in Python</td>
</tr>
</tbody>
</table>

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.
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: 8 December 2022

E3010 Bachelor of Engineering (Honours) and Bachelor of Computer Science
Engineering specialisation - Electrical and computer systems engineering
IT specialisation - Advanced computer science

<table>
<thead>
<tr>
<th>Year 1 Semester 1</th>
<th>Bachelor of Electrical and Computer Systems Engineering (Honours)</th>
<th>Bachelor of Computer Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>February</td>
<td>Common first year</td>
<td>FIT1045 Algorithms and programming fundamentals in Python</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 2 Semester 1</th>
<th>ENG2005 Advanced engineering mathematics</th>
<th>ECE2071 Computer organisation and programming</th>
<th>FIT1047 Introduction to computer systems, networks and security</th>
<th>MAT1830 Discrete mathematics for computer science</th>
</tr>
</thead>
<tbody>
<tr>
<td>February</td>
<td></td>
<td></td>
<td></td>
<td>If two foundation units are required, then overload is required for ENG1011 Engineering methods</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 2 Semester 2</th>
<th>ECE2191 Probability models in engineering</th>
<th>ECE2072 Digital systems</th>
<th>FIT1049 IT professional practice</th>
<th>FIT elective</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 3 Semester 1</th>
<th>ECE3073 Computer systems</th>
<th>ECE2131 Electrical circuits</th>
<th>FIT2004 Algorithms and data structures</th>
<th>FIT2099 Object-oriented design and implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>February</td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 3 Semester 2</th>
<th>ECE2111 Signals and systems</th>
<th>ECE3121 Engineering electromagnetics</th>
<th>FIT2014 Theory of computation</th>
<th>FIT2102 Programming paradigms</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Year 4 Semester 1</th>
<th>ECE3161 Analogue electronics</th>
<th>ECE3141 Information and networks</th>
<th>FIT3171 Databases</th>
<th>Level 3 computer science approved elective</th>
</tr>
</thead>
<tbody>
<tr>
<td>February</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 4 Semester 2</th>
<th>ECE4132 Control system design</th>
<th>Level 4 or 5 ECE-coded core elective</th>
<th>FIT3155 Advanced data structures and algorithms</th>
<th>FIT3143 Parallel computing</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 5 Semester 1</th>
<th>ENG4701 Final year project A</th>
<th>ECE3051 Electrical energy systems</th>
<th>Level 4 or 5 ECE-coded core elective</th>
<th>FIT3161 Computer science project 1</th>
<th>ENG0001 Continuous Professional Development (0 credit points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>February</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 5 Semester 2</th>
<th>ENG4702 Final year project B</th>
<th>ECE4191 Engineering integrated design</th>
<th>ECE4099 Professional practice</th>
<th>FIT3162 Computer science project 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td></td>
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</table>

**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.
- 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.
# 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: 8 December 2022

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

**Engineering specialisation - Software engineering**  
**IT specialisation - Advanced computer science**

<table>
<thead>
<tr>
<th>Year 1 Semester 1 February</th>
<th>Bachelor of Software Engineering (Honours)</th>
<th>Bachelor of Computer Science</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Common first year</td>
<td>FIT1045 Algorithms and programming fundamentals in Python</td>
</tr>
</tbody>
</table>

| Year 1 Semester 2 July   | MAT1830 Discrete mathematics for computer science | FIT1047 Introduction to computer systems, networks and security | FIT elective |
|                         | FIT2004 Algorithms and data structures         | FIT1049 IT professional practice | FIT elective |

| Year 2 Semester 1 February | FIT2004 Algorithms and data structures | FIT2101 Software engineering process and management | FIT elective |
| Year 2 Semester 2 July     | FIT3150 Computer architecture             | FIT2099 Object oriented design and implementation | Any level 3 unit from list B of the advanced computer science specialisation |
| Year 3 Semester 1 February | FIT2107 Software quality and testing      | FIT2100 Operating systems                        | FIT2102 Programming paradigms |
| Year 3 Semester 2 July     | FIT3170 Software engineering practice (12 points) | FIT3077 Software engineering: architecture and design | Level 3 computer science approved elective |
|                           | FIT3171 Databases                         | FIT3155 Advanced data structures and algorithms | Level 3 computer science approved elective |
|                           | FIT4002 Software engineering industry experience studio project (12 points) | FIT4003 Software engineering research project Replace with FIT4701 from 2023 | FIT4165 Computer networks |
|                           |FIT3162 Computer science project 2         | FIT3161 Computer science project 1 Replace with FIT4702 from 2023 | ENGS0001 Continuous Professional Development (0 credit points) |

**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.
- 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](#).