Overview

Computer Engineering encompasses the structured and integrated design of the hardware and software components of computerised systems. Not only do personal computer systems, such as desktops and laptops fall into this category, but so do embedded systems for gaming, cars and PDAs, supercomputers used in climate modelling and gene analysis, and prosthetic systems such as ocular implants intended to improve quality of life. The challenge for the engineer is to design these systems with maximal impact, and to trade off competing factors using engineering, scientific and mathematical principles. This stream teaches the principles and techniques necessary to engineer high quality systems.

Computer Engineering is studied as a major stream in the BE(Hons). Day to day administration of this stream is conducted through the Computer Science and Engineering Student Office.

This page outlines the core rules for the Computer Engineering stream when taken as part of a single or dual award. The requirements total 168 units of credit, plus 60 days of industrial training. Refer to the program page for full details on the overall program requirements.

Further details on the stream requirements, electives, and advice regarding the order and placement of courses in the stream can be found at the: School website
<table>
<thead>
<tr>
<th><strong>Faculty</strong></th>
<th>Faculty of Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>School</strong></td>
<td>School of Computer Science and Engineering</td>
</tr>
<tr>
<td><strong>Study Level</strong></td>
<td>Undergraduate</td>
</tr>
<tr>
<td><strong>Minimum Units of Credit</strong></td>
<td>168</td>
</tr>
<tr>
<td><strong>Specialisation Type</strong></td>
<td>Honours</td>
</tr>
</tbody>
</table>
Available in Program(s)

Program(s) in which this honours is available

Bachelor of Engineering (Honours) - **BE (Hons)**

**3707 Engineering (Honours)**
Faculty: Faculty of Engineering  
Campus: Kensington  
Units of Credit: 192  
Typical Duration: 4 Years

Bachelor of Engineering (Honours) - **BE (Hons)**  
Master of Biomedical Engineering - **MBiomedE**

**3768 Engineering (Honours)/Biomedical Engineering**
Faculty: Faculty of Engineering  
Campus: Kensington  
Units of Credit: 240  
Typical Duration: 5 Years
**Specialisation Structure**

Students must complete 168 UOC.

**Level 1 Core Courses**

Students must take 54 UOC of the following courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>UOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP1511</td>
<td>6</td>
</tr>
<tr>
<td>Programming Fundamentals</td>
<td></td>
</tr>
<tr>
<td>COMP1521</td>
<td>6</td>
</tr>
<tr>
<td>Computer Systems Fundamentals</td>
<td></td>
</tr>
<tr>
<td>COMP1531</td>
<td>6</td>
</tr>
<tr>
<td>Software Engineering Fundamentals</td>
<td></td>
</tr>
<tr>
<td>ELEC1111</td>
<td>6</td>
</tr>
<tr>
<td>Electrical and Telecommunications Engineering</td>
<td></td>
</tr>
<tr>
<td>ENGG1000</td>
<td>6</td>
</tr>
<tr>
<td>Introduction to Engineering Design and Innovation</td>
<td></td>
</tr>
</tbody>
</table>

One of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>UOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH1131</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 1A</td>
<td></td>
</tr>
<tr>
<td>MATH1141</td>
<td>6</td>
</tr>
<tr>
<td>Higher Mathematics 1A</td>
<td></td>
</tr>
</tbody>
</table>

One of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>UOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH1131</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 1A</td>
<td></td>
</tr>
<tr>
<td>MATH1231</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 1B</td>
<td></td>
</tr>
<tr>
<td>MATH1241</td>
<td>6</td>
</tr>
<tr>
<td>Higher Mathematics 1B</td>
<td></td>
</tr>
</tbody>
</table>
PHYS1121 | 6 UOC  
Physics 1A

PHYS1131 | 6 UOC  
Higher Physics 1A

One of the following:
PHYS1221 | 6 UOC  
Physics 1B

PHYS1231 | 6 UOC  
Higher Physics 1B

**Level 2 Core Courses**

Students must take 42 UOC of the following courses.

COMP2511 | 6 UOC  
Object-Oriented Design & Programming

COMP2521 | 6 UOC  
Data Structures and Algorithms

DESN2000 | 6 UOC  
Engineering Design and Professional Practice

ELEC2133 | 6 UOC  
Analogue Electronics

ELEC2134 | 6 UOC  
Circuits and Signals

MATH2069 | 6 UOC  
Mathematics 2A

MATH2099 | 6 UOC  
Mathematics 2B
Level 3 Core Courses

Students must take 24 UOC of the following courses.

COMP3211  |  6 UOC
Computer Architecture

COMP3222  |  6 UOC
Digital Circuits and Systems

COMP3231  |  6 UOC
Operating Systems

COMP3601  |  6 UOC
Design Project A

Level 4 Core Courses

Students must take 24 UOC of the following courses.

COMP4601  |  6 UOC
Design Project B

COMP4920  |  6 UOC
Management and Ethics

COMP4951  |  4 UOC
Research Thesis A

COMP4952  |  4 UOC
Research Thesis B

COMP4953  |  4 UOC
Research Thesis C

Discipline Electives

Students must take at least 24 UOC of the following courses.
any level 3 Computer Science course

any level 4 Computer Science course

any level 6 Computer Science course

any level 9 Computer Science course

ENGG3060 | 3 UOC
Maker Games

Level 4 UOC Minimum

Students must complete a minimum of 36 UOC of Level 4 courses including core courses and at least 12 UOC of Level 4 Discipline Electives, including:

COMP4601 | 6 UOC
Design Project B

COMP4920 | 6 UOC
Management and Ethics

COMP4951 | 4 UOC
Research Thesis A

COMP4952 | 4 UOC
Research Thesis B

COMP4953 | 4 UOC
Research Thesis C

any level 4 course offered by School of Computer Science and Engineering

Enrolment Disclaimer

Unless advised otherwise by your program authority, you should follow the rules for
the handbook for the year you commenced your program. You are also responsible for ensuring you enrol in courses according to your program requirements. myUNSW enrolment checks that you have met enrolment requirements such as pre-requisites for individual courses but not that a course will count towards your program requirements.
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Access past handbook editions (2018 and prior)

Pre-2019 Handbook Editions