Computer Engineering

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.

COMP1511  |  6 UOC
Programming Fundamentals

COMP1521  |  6 UOC
Computer Systems Fundamentals

COMP1531  |  6 UOC
Software Engineering Fundamentals

ELEC1111  |  6 UOC
Electrical and Telecommunications Engineering

ENGG1000  |  6 UOC
Introduction to Engineering Design and Innovation

One of the following:
MATH1131  |  6 UOC
Mathematics 1A

MATH1141  |  6 UOC
Higher Mathematics 1A

One of the following:
MATH1231  |  6 UOC
Mathematics 1B

MATH1241  |  6 UOC
Higher Mathematics 1B

One of the following:
Physics 1A

Higher Physics 1A

One of the following:

Physics 1B

Level 2 Core Courses

Students must take 42 UOC of the following courses.

Object-Oriented Design & Programming

Data Structures and Algorithms

Engineering Design and Professional Practice

Analogue Electronics

Circuits and Signals

Mathematics 2A

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.
Pre-2019 Handbook Editions

Access past handbook editions (2018 and prior)

Pre-2019 Handbook Editions
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Authorised by Deputy Vice-Chancellor (Academic)
CRICOS Provider Code 00098G
ABN: 57 195 873 179