Specialisation

Bioinformatics Engineering

BINFAH

Bioinformatics 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 Bioinformatics 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: Bioinformatics
<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 60 UOC of the following courses.

BABS1201  6 UOC
Molecules, Cells and Genes

COMP1511  6 UOC
Programming Fundamentals

COMP1521  6 UOC
Computer Systems Fundamentals

COMP1531  6 UOC
Software Engineering Fundamentals

ENGG1000  6 UOC
Introduction to Engineering Design and Innovation

MATH1081  6 UOC
Discrete Mathematics

One of the following:
CHEM1011  6 UOC
Chemistry 1A: Atoms, Molecules and Energy

CHEM1031  6 UOC
Higher Chemistry 1A: Atoms, Molecules and Energy

One of the following:
PHYS1111  6 UOC
Fundamentals of Physics
<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS1121</td>
<td>6</td>
<td>Physics 1A</td>
</tr>
<tr>
<td>PHYS1131</td>
<td>6</td>
<td>Higher Physics 1A</td>
</tr>
<tr>
<td>MATH1131</td>
<td>6</td>
<td>Mathematics 1A</td>
</tr>
<tr>
<td>MATH1141</td>
<td>6</td>
<td>Higher Mathematics 1A</td>
</tr>
<tr>
<td>MATH1231</td>
<td>6</td>
<td>Mathematics 1B</td>
</tr>
<tr>
<td>MATH1241</td>
<td>6</td>
<td>Higher Mathematics 1B</td>
</tr>
</tbody>
</table>

**Level 2 Core Courses**

Students must take 42 UOC of the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF2101</td>
<td>6</td>
<td>Introduction to Bioinformatics</td>
</tr>
<tr>
<td>BI0C2201</td>
<td>6</td>
<td>Principles of Molecular Biology (Advanced)</td>
</tr>
<tr>
<td>COMP2041</td>
<td>6</td>
<td>Software Construction: Techniques and Tools</td>
</tr>
<tr>
<td>COMP2511</td>
<td>6</td>
<td>Object-Oriented Design &amp; Programming</td>
</tr>
<tr>
<td>COMP2521</td>
<td>6</td>
<td>Data Structures and Algorithms</td>
</tr>
</tbody>
</table>
One of the following:
MATH2801  | 6 UOC
Theory of Statistics

MATH2901  | 6 UOC
Higher Theory of Statistics

One of the following:
BABS2202  | 6 UOC
Molecular Cell Biology 1

BABS2204  | 6 UOC
Genetics

BABS2264  | 6 UOC
Genetics (Advanced Level)

BIOC2101  | 6 UOC
Principles of Biochemistry (Advanced)

MICR2011  | 6 UOC
Microbiology 1

Level 3 Core Courses

Students must take 30 UOC of the following courses.

BABS3121  | 6 UOC
Molecular Biology of Nucleic Acids

BINF3010  | 6 UOC
Applied Bioinformatics

BINF6111  | 6 UOC
Genome Informatics Engineering Design Workshop

COMP3121  | 6 UOC
Level 4 Core Courses

Students must take 24 UOC of the following courses.

- BINF6112 | 6 UOC
  Computational Biology Engineering Design Workshop

- 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 12 UOC of the following:
Level 3 or higher COMP courses.
Level 3 BABS, BIOC or MICR courses

any level 3 Biotechnology & Biomolecular Sciences course

any level 3 Biochemistry course

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 | 6 UOC
Maker Games

any level 3 Microbiology course

**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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