Double Degree

Engineering (Honours) / Science

3767  |  240 Units of Credit

Overview

Students may seek to undertake a five-year full-time dual degree program leading to the award of the degrees of Bachelor of Engineering (Honours) and Bachelor of Science (BE (Hons) BSc). The Faculty of Engineering administers the program, and delegates administration to the School which offers the Engineering discipline selected. Students should seek advice from the relevant School Office in the first instance, from the Faculty of Engineering, or from the Faculty of Science for the Science component.
| **Faculty** | Faculty of Engineering  
Faculty of Science |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Campus</strong></td>
<td>Kensington</td>
</tr>
<tr>
<td><strong>Study Level</strong></td>
<td>Undergraduate</td>
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<tr>
<td><strong>Typical duration</strong></td>
<td>5 Years</td>
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<tr>
<td><strong>Intake Period</strong></td>
<td>Term 1, Term 3</td>
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<td><strong>Academic Calendar</strong></td>
<td>3+ Calendar</td>
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<tr>
<td><strong>Minimum Units of Credit</strong></td>
<td>240</td>
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| **Award(s)** | Bachelor of Engineering (Honours) -  
BE (Hons)  
Bachelor of Science -  
BSc |
| **UAC Code** | 425850 |
| **CRICOS Code** | 008727G |
Learning Outcomes

3707 - Engineering (Honours)

1. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline.

   Scholars

2. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.

   Scholars

3. In-depth understanding of specialist bodies of knowledge within the engineering discipline.

   Scholars

4. Discernment of knowledge development and research directions within the engineering discipline.

   Scholars

5. Knowledge of engineering design practice and contextual factors impacting the engineering discipline.

   Global Citizens Scholars Professionals

6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.

   Professionals Scholars Global Citizens

7. Application of established engineering methods to complex engineering problem solving.

   Scholars Global Citizens Professionals

8. Fluent application of engineering techniques, tools and resources.

   Professionals Scholars


   Global Citizens Professionals Scholars

10. Application of systematic approaches to the conduct and management of engineering projects.

   Scholars Leaders Global Citizens Professionals

11. Ethical conduct and professional accountability.
12. Effective oral and written communication in professional and lay domains.

13. Creative, innovative and pro-active demeanour.

14. Professional use and management of information.

15. Orderly management of self, and professional conduct.

16. Effective team membership and team leadership.

3970 - Science

1. Ethical, social and professional understanding including the ability to critically reflect upon broad ethical principles and codes of conduct in order to behave consistently with a personal respect and commitment to ethical practice and social responsibility, multicultural, cultural and personal diversity.

2. Teamwork, collaborative and management skills including the ability to recognise opportunities and contribute positively to collaborative scientific research, and to demonstrate a capacity for self management, teamwork, leadership and decision making based on open-mindedness, objectivity and reasoned analysis in order to achieve common goals and further the learning of themselves and others.

3. Information literacy including the ability to make appropriate and effective use of information and information technology relevant to their discipline.

4. Effective and appropriate communication in both professional (intra and inter disciplinary) and social (local and international) contexts.

5. Research, enquiry and analytical thinking abilities including the ability to construct new concepts or create new understanding through the process of enquiry, critical analysis, problem solving and research.

6. Capability and motivation for intellectual development; including capacity for
creativity, critical evaluation, entrepreneurship and demonstrating a commitment to their own learning, motivated by curiosity and an appreciation of the value of learning.

Graduate Capabilities:

For more information on Graduate Capabilities, please click on this link.
Stand Alone Programs

Click on the link below to find out more about each individual program.

Program 3707
Engineering (Honours)

Program 3970
Science
Double Degree Structure

Students must complete 240 UOC.

Bachelor of Engineering (Honours) (168 UOC)
1. 168 UOC plus at least 60 days of approved Industrial Training experience
2. At least 48 UOC Disciplinary Knowledge and Enquiry-based Courses
3. 30-42 UOC Introductory Knowledge core courses
4. At least 12 UOC of elective courses
5. The balance of stream to consist of Foundation Disciplinary Knowledge Courses

Bachelor of Science (96 UOC)
1. An approved Bachelor of Science major; and
2. Science elective courses

Majors

3707 - Engineering (Honours)
Students must complete at least one of the specialisations below.

HONOURS:

AEROAH | 168 UOC
Aerospace Engineering

BINFAH | 168 UOC
Bioinformatics Engineering

CEICAH | 168 UOC
Chemical Engineering

CEICDH | 168 UOC
Chemical Product Engineering

COMPBH | 168 UOC
Computer Engineering
CVENAH | 168 UOC
Civil Engineering

CVENBH | 168 UOC
Environmental Engineering

ELECAH | 168 UOC
Electrical Engineering

GMATDH | 168 UOC
Surveying

GMATEH | 168 UOC
Geospatial Engineering

MANFBH | 168 UOC
Mechanical and Manufacturing Engineering

MECHAH | 168 UOC
Mechanical Engineering

MINEAH | 168 UOC
Mining Engineering

MTRNAH | 168 UOC
Mechatronic Engineering

PETRAH | 168 UOC
Petroleum Engineering

SENGAH | 168 UOC
Software Engineering

SOLAAH | 168 UOC
Photovoltaics and Solar Energy
Renewable Energy Engineering

Telecommunications

**Majors**

3970 - Science

Students must complete at least one Science major selected from the list below. Students should declare their major prior to commencing Stage 2 courses.

**Notes:**
1. Students in 4076 Science/Education can only choose from the following majors: Biology, Chemistry, Ecology, Geography, Mathematics for Education, Pathology, Physics, Physiology. All other majors in 3970 are not permitted.
2. Students are not permitted to take the Bioinformatics major BINFB1 when taking the degree in dual award mode with the Bachelor of Engineering (Bioinformatics) program.

**MAJOR:**

<table>
<thead>
<tr>
<th>Code</th>
<th>UOC</th>
<th>Major</th>
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<tbody>
<tr>
<td>ANATA1</td>
<td>72</td>
<td>Anatomy</td>
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<tr>
<td>BINFB1</td>
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<td>Bioinformatics</td>
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<tr>
<td>BIOCC1</td>
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<td>Genetics</td>
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<td>BIOCM1</td>
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<td>Molecular and Cell Biology</td>
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<td>BIOSG1</td>
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<td>BIOSJ1</td>
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<td>Biology</td>
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<td>BIOTA1</td>
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<td>Biotechnology</td>
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<td>CHEMA1</td>
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<td>Chemistry</td>
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<tr>
<td>FOODH1</td>
<td>72</td>
<td>Food Science</td>
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<tr>
<td>GEOGG1</td>
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<td>Geography</td>
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<td>GEOLS1</td>
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<td>MATHT1</td>
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<tr>
<td>MATSB1</td>
<td>78</td>
<td>Materials Science</td>
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</table>
Minors

3970 - Science

Students may choose to complete an optional minor in one of the following areas, using their Science and/or free electives. Please note that students in 4076 Science Education are NOT permitted to declare a minor.

MINOR:
<table>
<thead>
<tr>
<th>Code</th>
<th>UOC</th>
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<tr>
<td>ANATB2</td>
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<td>ARCYB2</td>
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<td>CHEMD2</td>
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<td>CLIMA2</td>
<td>42</td>
<td>Climate Science</td>
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<td>GEOLF2</td>
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<td>Geology</td>
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<td>MATHC2</td>
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<td>Mathematics</td>
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<tr>
<td>MSCIH2</td>
<td>36</td>
<td>Marine Science</td>
</tr>
<tr>
<td>PATHB2</td>
<td>42</td>
<td>Pathology</td>
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<tr>
<td>PHARB2</td>
<td>48</td>
<td>Pharmacology</td>
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</tbody>
</table>
PHSLB2 | 48 UOC
Physiology

PHYSC2 | 48 UOC
Physics

PSYCM2 | 36 UOC
Psychology

VISNB2 | 36 UOC
Vision Science

**Science Elective Courses**

3970 - Science

Students must take at least 12 UOC of the following courses.

any Anatomy course

any Aviation course

any Biotechnology & Biomolecular Sciences course

any Biological, Earth & Environmental Science course

any Biochemistry course

any Biological Science course

any Biotechnology course

any Chemistry course

any Climate Science course
any Computer Science course

any Food Technology course

any Geoscience course

any Mathematics course

any Materials Science and Engineering course

any Microbiology course

any Marine Science course

any Neuroscience course

any Optometry course

any Pathology course

any Pharmacology course

any Physiology course

any Physics course

any Psychology course

any Faculty of Science course

any Medical Science course
any Vision Science course

**Level 3 Maturity Requirements**

3707 - Engineering (Honours)

Students must have completed 42 UOC before taking any of the following courses.

any level 3 course

**Level 4 Maturity Requirements**

3707 - Engineering (Honours)

Students must have completed 102 UOC before taking any of the following courses.

any level 4 course

**Level 2 Maturity Requirements**

3970 - Science

Students must have completed 30 UOC before taking any of the following courses.

any level 2 course

**Level 3 Maturity Requirements**

3970 - Science

Students must have completed 72 UOC before taking any of the following courses.

any level 3 course

any level 6 course

**Minimum Science UOC**

3970 - Science

Students must complete a minimum of 96 UOC of the following courses.

any Anatomy course
any Computer Science course

any Food Technology course

any course offered by Faculty of Science

any Neuroscience course

any Pathology course

any Pharmacology course

any Physiology course

**Level 1 Science UOC**

3970 - Science

Students must complete a minimum of 24 UOC of the following courses.

any level 1 course offered by Faculty of Science

**Maximum Level 1 UOC**

3970 - Science

A maximum of 72 UOC of Level 1 courses can be taken, including any General Education or mainstream Level 1 course taken to fulfil either the General Education or the Free Elective requirement.

any level 1 course

**Industrial Experience Requirement**

3707 - Engineering (Honours)

Students must each complete at least 60 days approved industrial training concurrent with enrolment in the program.
Double Counting

3970 - Science

Students cannot complete a minor with the same name as their nominated major, and Level II and III courses cannot be double-counted between majors and minors. More than one minor may be completed subject to the limit on double-counting. Students must declare their minor(s) before their final term.

Please read the Double Degree Program rules as some specific rules apply to particular Double Degree combinations.

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.
Program Fees

At UNSW fees are generally charged at course level and therefore dependent upon individual enrolment and other factors such as student's residency status. For generic information on fees and additional expenses of UNSW programs, click on one of the following:

Domestic Students
Commonwealth Supported Students
International Students
Additional Information

All combinations of Engineering program and Science majors are possible within five years of full-time study. However, to complete these combinations, special exceptions are made when undertaking particular Science majors, as indicated below:

**Mathematics**

Students majoring in Mathematics in the Bachelor of Science will need to replace the second year Mathematics courses in their Engineering program with second year Mathematics courses required for the Mathematics major. For further information regarding this, students should see staff in the School of Mathematics and Statistics or the Science Student Centre, or view this document: Mathematics in BE BSc Programs.

**Biology, Ecology, Geography, Earth Science, and Marine and Coastal Science**

Students undertaking a major in Biology, Ecology, Geography, Earth Science, or Marine and Coastal Science as part of the Bachelor of Science, will be exempted from completing MATH1041 Statistics for Life and Social Sciences and BEES2041 Data Analysis for Life and Earth Sciences when MATH1131 Mathematics 1A, MATH1231 Mathematics 1B, and a relevant second year statistics course has been completed as part of the Bachelor of Engineering. For further information regarding this, please contact the Science Student Centre.

**Physics**

Students undertaking a major in Physics as part of the Bachelor of Science, may need to replace the second year Mathematics courses in the Bachelor of Engineering with second year Mathematics courses required for the Physical Science major. For further information regarding this, students should contact the School of Physics.

**Biotechnology and Neuroscience**

Students completing a major in Biotechnology or Neuroscience may need to use their first year Engineering elective to take a course for this major, otherwise, it will require 246 UoC to complete the requirements for the Engineering degree and
Science major. This could involve an extra semester of study, extra cost and may have visa implications for international students. Students wishing to major in Biotechnology or Neuroscience should seek advice from the Science Student Centre as soon as they start planning their enrolment.

**Bioinformatics**

Students are not permitted to declare a Bioinformatics major in the Bachelor of Science if they are completing the Bioinformatics stream as part of the Bachelor of Engineering (Honours).

**COMP Courses**

In all Engineering/Science dual degrees, COMP courses do not count towards the Science component and will not contribute to the minimum 96 UoC of required ‘Science’ courses.

**3767 UOC Requirements**

Where students complete the requirements for the Bachelor of Engineering and the Bachelor of Science in less than 240 units of credit, the remaining elective courses taken to bring the total to 240 units of credit must be taken from the Faculty of Engineering or the Faculty of Science

**Accreditation:**

This Engineering component of this dual degree has the same accreditation status as the Bachelor of Engineering (Hons). For details please see Program 3707
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