Advanced Science (Honours) / Engineering (Honours)

3762

The Faculty of Science and the Faculty of Engineering offer a dual degree program which qualifies students for two degrees after the equivalent of six years of successful full-time study leading to the award of the degrees Bachelor of Advanced Science (Honours) and Bachelor of Engineering (Honours).

The Faculty of Science administers the program, and delegates administration of the Bachelor of Engineering (Honours) requirements to the School which offers the Engineering discipline selected. Students should seek advice from the Faculty of Science regarding their Advanced Science (Honours) program, and the relevant Engineering School Office, or the Faculty of Engineering, regarding their Engineering program.
<table>
<thead>
<tr>
<th><strong>Faculty</strong></th>
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<tbody>
<tr>
<td>Faculty of Science</td>
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<tr>
<td>Faculty of Engineering</td>
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<table>
<thead>
<tr>
<th><strong>Campus</strong></th>
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<tr>
<td>Kensington</td>
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<table>
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<tr>
<th><strong>Study Level</strong></th>
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<tr>
<td>Undergraduate</td>
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<table>
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<tr>
<th><strong>Typical duration</strong></th>
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<tbody>
<tr>
<td>6 Years</td>
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<thead>
<tr>
<th><strong>Academic Calendar</strong></th>
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<tr>
<td>3+ Calendar</td>
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<table>
<thead>
<tr>
<th><strong>Minimum Units of Credit</strong></th>
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<tbody>
<tr>
<td>288</td>
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<table>
<thead>
<tr>
<th><strong>Award(s)</strong></th>
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<tbody>
<tr>
<td>Bachelor of Advanced Science (Honours) - BAdvSci(Hons)</td>
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<tr>
<td>Bachelor of Engineering (Honours) - BE (Hons)</td>
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<table>
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<th><strong>UAC Code</strong></th>
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<th><strong>CRICOS Code</strong></th>
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</table>
Learning Outcomes

3962 - Advanced Science (Honours)

1. Effective and appropriate communication in both professional (intra and interdisciplinary) and social (local and international) contexts.

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. Appreciation and respect of the social, cultural and global context of science with an ability to communicate across cultures and to develop an international professional network.

5. Independently identify and formulate solutions to complex problems with intelligence, initiative and judgement in scholarship that demonstrates advanced knowledge and critical thinking of the underlying principles and concepts in one or more disciplines, and knowledge of research principles and methods.

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

7. Research, enquiry and high level analytical thinking abilities including the ability to construct new concepts or create new understanding through the process of enquiry, critical analysis and problem solving, including constructing a research project, that demonstrates technical skills in research and design.

8. 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.

Global Citizens  Professionals

**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 3962**
**Advanced Science (Honours)**

**Program 3707**
**Engineering (Honours)**
Double Degree Structure

Students must complete 288 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. 30-42UOC 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 Advanced Science (Honours) (144 UOC)
1. An approved Bachelor of Advanced Science (Honours) major; and
2. SCIF1131;
3. 48 units of credit Honours Year; and
4. Science elective courses

Note: Because of an overlap of 24 units of credit of Science courses in the core for both degrees, the total units of credit required for completion is 288 UoC, rather than 312 UoC.

Majors

3962 - Advanced Science (Honours)

Students must complete at least one Science major selected from the list below.

When offered in a particular major, students must take higher versions of any Level 2 or 3 courses. Any variation to this must be approved by the Associate Dean (Academic Programs) or nominee.

MAJOR:

ANATA1  |  72 UOC
Anatomy

BINFB1  |  96 UOC
Bioinformatics

BIOCG1  |  90 UOC
Genetics
<table>
<thead>
<tr>
<th>Code</th>
<th>UOC</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>MATSB1</td>
<td>78</td>
<td>Advanced Physical Oceanography</td>
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<tr>
<td>MICRE1</td>
<td>84</td>
<td>Materials Science</td>
</tr>
<tr>
<td>MSCIM1</td>
<td>78</td>
<td>Microbiology</td>
</tr>
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<td>NEURA1</td>
<td>84</td>
<td>Neuroscience</td>
</tr>
<tr>
<td>PATHB1</td>
<td>66</td>
<td>Pathology</td>
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<td>PHARB1</td>
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<td>Pharmacology</td>
</tr>
<tr>
<td>PHSLB1</td>
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<td>Physiology</td>
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<tr>
<td>PHYSC1</td>
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<td>Advanced Physics</td>
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<td>PSYCA1</td>
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<td>Psychology</td>
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<tr>
<td>VISNA1</td>
<td>72</td>
<td>Vision Science</td>
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</table>

**Honours Specialisations**

3962 - Advanced Science (Honours)
Students must complete at least one Science Honours stream selected from the list below.

**HONOURS:**

- **ARCYBH | 48 UOC**  
  Palaeoscience

- **BABSBH | 48 UOC**  
  Bioinformatics

- **BIOCFH | 48 UOC**  
  Molecular and Cell Biology

- **BIOCGH | 48 UOC**  
  Genetics

- **BIOSKH | 48 UOC**  
  Biology

- **BIOSLH | 48 UOC**  
  Ecology

- **BIOTBH | 48 UOC**  
  Biotechnology

- **CHEMFH | 48 UOC**  
  Chemistry

- **CLIMDH | 48 UOC**  
  Climate Science

- **GEOGTH | 48 UOC**  
  Geography

- **GEOLMH | 48 UOC**  
  Geology
<table>
<thead>
<tr>
<th>Code</th>
<th>UOC</th>
<th>Program</th>
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<tr>
<td>MATHAH</td>
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<td>Applied Mathematics</td>
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<td>MATHNH</td>
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<td>Physical Oceanography</td>
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<td>MATHPH</td>
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<td>Pure Mathematics</td>
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<tr>
<td>MATHTH</td>
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<td>Statistics</td>
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<td>MATSCH</td>
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<td>MICRFH</td>
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<td>Microbiology</td>
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<td>MSCIJH</td>
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<td>Marine Science</td>
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<td>NEURBH</td>
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<td>Neuroscience</td>
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<td>PHYSGH</td>
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<td>PSYCAH</td>
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<td>SOMSAH</td>
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<td>Medical Science</td>
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<td>SOMSBH</td>
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</tbody>
</table>
Physiology
SOMSCH | 48 UOC
Pharmacology
SOMSDH | 48 UOC
Pathology
SOMSEH | 48 UOC
Anatomy
VISNBH | 48 UOC
Vision Science

Minors

3962 - Advanced Science (Honours)

Students may choose to complete an optional minor in one of the following areas, using their Science and/or free electives

MINOR:

ANATB2 | 36 UOC
Anatomy

ARCYB2 | 36 UOC
Palaeosciences

BIOCD2 | 42 UOC
Molecular Biology

BIOSD2 | 42 UOC
Biology

CHEMD2 | 48 UOC
Chemistry
CLIMA2 | 42 UOC
Climate Science

GEOLF2 | 36 UOC
Geology

MATHC2 | 36 UOC
Mathematics

MATHD2 | 36 UOC
Statistics

MSCIH2 | 36 UOC
Marine Science

PATHB2 | 42 UOC
Pathology

PHARB2 | 48 UOC
Pharmacology

PHSLB2 | 48 UOC
Physiology

PHYSC2 | 48 UOC
Physics

PSYCM2 | 36 UOC
Psychology

VISNB2 | 36 UOC
Vision Science

Majors
3707 - Engineering (Honours)

Students must complete at least one of the specialisations below.

**HONOURS:**

<table>
<thead>
<tr>
<th>Code</th>
<th>UOC</th>
<th>Specialisation</th>
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<tbody>
<tr>
<td>AEROAH</td>
<td>168</td>
<td>Aerospace Engineering</td>
</tr>
<tr>
<td>BINFAH</td>
<td>168</td>
<td>Bioinformatics Engineering</td>
</tr>
<tr>
<td>CEICAH</td>
<td>168</td>
<td>Chemical Engineering</td>
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<tr>
<td>CEICDH</td>
<td>168</td>
<td>Chemical Product Engineering</td>
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<tr>
<td>COMPBH</td>
<td>168</td>
<td>Computer Engineering</td>
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<tr>
<td>CVENAH</td>
<td>168</td>
<td>Civil Engineering</td>
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<td>CVENBH</td>
<td>168</td>
<td>Environmental Engineering</td>
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<td>ELECAH</td>
<td>168</td>
<td>Electrical Engineering</td>
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<tr>
<td>GMATDH</td>
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<td>Surveying</td>
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<td>GMATEH</td>
<td>168</td>
<td>Geospatial Engineering</td>
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<tr>
<td>MANFBH</td>
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</table>
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

SOLABH | 168 UOC
Renewable Energy Engineering

TELEAH | 168 UOC
Telecommunications

**Core Courses**

3962 - Advanced Science (Honours)

Students must take 6 UOC of the following courses

Note: Students in the Vision Science major should take VISN1101 Seeing the World Perspectives from Vision Science instead. Students in Engineering Dual Programs should take ENGG1000 Introduction to Engineering Design and Innovation.

SCIF1131 | 6 UOC
Introductory Skills for Science
**Level 2 Maturity Requirements**

3962 - Advanced Science (Honours)

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

*any level 2 course*

**Level 3 Maturity Requirements**

3962 - Advanced Science (Honours)

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

*any level 3 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*

**Maximum Level 1 UOC**

3962 - Advanced Science (Honours)

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*

**Minimum Level 1 Science UOC**
3962 - Advanced Science (Honours)

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

any level 1 Anatomy course

any level 1 Computer Science course

any level 1 Food Technology course

any level 1 course offered by Faculty of Science

any level 1 Neuroscience course

any level 1 Pathology course

any level 1 Pharmacology course

any level 1 Physiology course

any level 1 Medical Science course

**Minimum Science UOC**

3962 - Advanced Science (Honours)

Students must take 'science' courses so that the major plus SCIF1131, plus Honours year plus 'science' courses total 144 units of credit.

any Anatomy course

any Computer Science course

any Food Technology course

any course offered by Faculty of Science
Students must complete a minimum of 30 UOC of the following courses.

Course Substitution
3762 - Advanced Science (Honours) / Engineering (Honours)

Students must take 6 UOC of the following courses
ENGG1000 - Introduction to Engineering Design and Innovation (6 UOC) - (replaces SCIF1131)

**Industrial Experience Requirement**

3707 - Engineering (Honours)

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

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

**Enrolment Disclaimer**

You are 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. Do not assume that because you have enrolled in a course that the course will be credited towards your program.
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
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