The Surveying stream is full time and extends over four years. This stream aims to prepare a graduate for a broad range of career opportunities in the various branches of Surveying and the numerous Spatial Information disciplines. To this end the stream covers general scientific and IT principles, as well as specialised Surveying and Spatial Information topics. Specialisation is provided for through the provision of elective courses offered in the third and fourth years of the program and the choice of a targeted final year thesis project often aligned with an external industry partner.

The degree of BE in Surveying is recognised by the Board of Surveying and Spatial Information of New South Wales as meeting the requirements for entry as a candidate to become a Registered Surveyor. The degree is also recognised by the Institution of Surveyors, New South Wales, the Spatial Sciences Institute and Engineers Australia, for admission as corporate members.

Suggestions for course sequences consistent with timetabling and availability can be found on the School website. The timing of the general education courses and elective courses may be modified to optimize the student's choice of courses. While some courses are given twice a year, many courses are given only once a year. In addition, courses may have prerequisites and exclusions. Thus students should plan their enrolments appropriately.

The day to day administration of the stream is conducted through the School of Civil & Environmental Engineering, to which inquiries should be directed.
<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 Civil and Environmental 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

<table>
<thead>
<tr>
<th>Bachelor of Engineering (Honours) - <strong>BE (Hons)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3707 Engineering (Honours)</strong></td>
</tr>
<tr>
<td>Faculty: Faculty of Engineering</td>
</tr>
<tr>
<td>Campus: Kensington</td>
</tr>
<tr>
<td>Units of Credit: 192</td>
</tr>
<tr>
<td>Typical Duration: 4 Years</td>
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</tbody>
</table>
Specialisation Structure

Students must complete 168 UOC.

Level 1 Core Courses

Students must take 36 UOC of the following courses.

**ENGG1000**  |  6 UOC
Introduction to Engineering Design and Innovation

**ENGG1811**  |  6 UOC
Computing for Engineers

**GMAT1110**  |  6 UOC
Surveying and Geospatial Engineering

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:

**PHYS1121**  |  6 UOC
Physics 1A

**PHYS1131**  |  6 UOC
Higher Physics 1A
Level 2 Core Courses

Students must take 48 UOC of the following courses.

CVEN2002 | 6 UOC
Civil and Environmental Engineering Computations

ENGG2500 | 6 UOC
Fluid Mechanics for Engineers

GMAT2120 | 6 UOC
Surveying and Geospatial Technology

GMAT2500 | 6 UOC
Surveying Computations A

GMAT2550 | 6 UOC
Surveying Computations B

GMAT2700 | 6 UOC
Foundations of Geodesy & Geospatial Ref Frames

One of the following:
CVEN2401 | 6 UOC
Sustainable Transport and Highway Engineering

CVEN3202 | 6 UOC
Soil Mechanics

One of the following:
MATH2018 | 6 UOC
Engineering Mathematics 2D

MATH2019 | 6 UOC
Engineering Mathematics 2E

Level 3 Core Courses

Students must take 48 UOC of the following courses.
CVEN3101 | 6 UOC
Engineering Operations and Control

CVEN3501 | 6 UOC
Water Resources Engineering

GMAT3100 | 6 UOC
Surveying Applications and Design

GMAT3150 | 6 UOC
Surveying Field Projects

GMAT3220 | 6 UOC
Geospatial Information Systems

GMAT3420 | 6 UOC
Cadastral Surveying and Land Law

GMAT3500 | 6 UOC
Remote Sensing and Photogrammetry

GMAT3700 | 6 UOC
Geodetic Positioning and Applications

**Level 4 Core Courses**

Students must take 18 UOC of the following courses.

CVEN4050 | 6 UOC
Thesis A

CVEN4051 | 6 UOC
Thesis B

CVEN4951 | 4 UOC
Research Thesis A
<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVEN4952</td>
<td>4</td>
<td>Research Thesis B</td>
</tr>
<tr>
<td>CVEN4953</td>
<td>4</td>
<td>Research Thesis C</td>
</tr>
<tr>
<td>GMAT4150</td>
<td>6</td>
<td>Field Projects 2</td>
</tr>
</tbody>
</table>

**Discipline Elective**

Students must take at least 6 UOC of the following courses. Students who wish to take any courses outside of this list need to get approval from the Program Authority.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVEN4800</td>
<td>6</td>
<td>Satellite Remote Sensing and Applications</td>
</tr>
<tr>
<td>ENGG3001</td>
<td>6</td>
<td>Fundamentals of Humanitarian Engineering</td>
</tr>
<tr>
<td>ENGG4060</td>
<td>6</td>
<td>Student Initiated Project</td>
</tr>
<tr>
<td>ENGG4102</td>
<td>6</td>
<td>Humanitarian Engineering Project</td>
</tr>
<tr>
<td>GEOS3911</td>
<td>6</td>
<td>Environmental Impact Assessment</td>
</tr>
<tr>
<td>GMAT4220</td>
<td>6</td>
<td>Geospatial Information Science</td>
</tr>
<tr>
<td>GMAT4400</td>
<td>6</td>
<td>Land Management Project</td>
</tr>
<tr>
<td>GMAT4450</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
Principles of GPS Positioning
GMAT4900  |  6 UOC

Principles of Remote Sensing
GMAT9600  |  6 UOC

Mining Project Development
MINE2010  |  6 UOC

**Level 1 Prescribed Electives**

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

ENGG1300 excludes CVEN1300, MINE1300, and MMAN1300.

CHEM1031 and CHEM1041 will only be available to students enrolled in a program which has a Chemistry major.

Molecules, Cells and Genes
BABS1201  |  6 UOC

Engineering in Medicine and Biology
BIOM1010  |  6 UOC

Ecology, Sustainability and Environmental Science
BIOS1301  |  6 UOC

Sustainable Product Engineering and Design
CEIC1000  |  6 UOC

Chemistry 1A: Atoms, Molecules and Energy
CHEM1011  |  6 UOC

Chemistry 1B: Elements, Compounds and Life
CHEM1021  |  6 UOC
<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM1031</td>
<td>6</td>
<td>Higher Chemistry 1A: Atoms, Molecules and Energy</td>
</tr>
<tr>
<td>CHEM1041</td>
<td>6</td>
<td>Higher Chemistry 1B: Elements, Compounds and Life</td>
</tr>
<tr>
<td>CHEM1811</td>
<td>6</td>
<td>Engineering Chemistry 1A</td>
</tr>
<tr>
<td>CHEM1821</td>
<td>6</td>
<td>Engineering Chemistry 1B</td>
</tr>
<tr>
<td>COMP1521</td>
<td>6</td>
<td>Computer Systems Fundamentals</td>
</tr>
<tr>
<td>COMP1531</td>
<td>6</td>
<td>Software Engineering Fundamentals</td>
</tr>
<tr>
<td>CVEN1701</td>
<td>6</td>
<td>Environmental Principles and Systems</td>
</tr>
<tr>
<td>ELEC1111</td>
<td>6</td>
<td>Electrical and Telecommunications Engineering</td>
</tr>
<tr>
<td>ENGG1100</td>
<td>6</td>
<td>Grand Challenges for Engineering</td>
</tr>
<tr>
<td>ENGG1200</td>
<td>6</td>
<td>Undergraduate Special Projects</td>
</tr>
<tr>
<td>ENGG1300</td>
<td>6</td>
<td>Engineering Mechanics</td>
</tr>
<tr>
<td>ENGG1400</td>
<td>6</td>
<td>Engineering Infrastructure Systems</td>
</tr>
</tbody>
</table>
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.
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