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

Bachelor of Engineering (Honours) - BE (Hons)

3707 Engineering (Honours)

Faculty: Faculty of Engineering
Campus: Kensington
Units of Credit: 192
Typical Duration: 4 Years
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
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.

- **CVEN4800** | 6 UOC
  Satellite Remote Sensing and Applications

- **ENGG3001** | 6 UOC
  Fundamentals of Humanitarian Engineering

- **ENGG4060** | 6 UOC
  Student Initiated Project

- **ENGG4102** | 6 UOC
  Humanitarian Engineering Project

- **GEOS3911** | 6 UOC
  Environmental Impact Assessment

- **GMAT4220** | 6 UOC
  Geospatial Information Science

- **GMAT4400** | 6 UOC
  Land Management Project
### 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>GMAT4900</td>
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<td>Principles of GPS Positioning</td>
</tr>
<tr>
<td>GMAT9600</td>
<td>6</td>
<td>Principles of Remote Sensing</td>
</tr>
<tr>
<td>MINE2010</td>
<td>6</td>
<td>Mining Project Development</td>
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<tr>
<td>BABS1201</td>
<td>6</td>
<td>Molecules, Cells and Genes</td>
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<tr>
<td>BIOM1010</td>
<td>6</td>
<td>Engineering in Medicine and Biology</td>
</tr>
<tr>
<td>BIOS1301</td>
<td>6</td>
<td>Ecology, Sustainability and Environmental Science</td>
</tr>
<tr>
<td>CEIC1000</td>
<td>6</td>
<td>Sustainable Product Engineering and Design</td>
</tr>
<tr>
<td>CHEM1011</td>
<td>6</td>
<td>Chemistry 1A: Atoms, Molecules and Energy</td>
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<tr>
<td>CHEM1021</td>
<td>6</td>
<td>Chemistry 1B: Elements, Compounds and Life</td>
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<tr>
<td>CHEM1031</td>
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<tr>
<td>Higher Chemistry 1A: Atoms, Molecules and Energy</td>
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<tr>
<td>CHEM1041</td>
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<td>CHEM1811</td>
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<tr>
<td>Engineering Chemistry 1A</td>
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<td>CHEM1821</td>
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<tr>
<td>Engineering Chemistry 1B</td>
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<tr>
<td>COMP1521</td>
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<tr>
<td>Computer Systems Fundamentals</td>
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<td>COMP1531</td>
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<td>Software Engineering Fundamentals</td>
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<td>CVEN1701</td>
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<td>Environmental Principles and Systems</td>
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<td>ELEC1111</td>
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<td>Electrical and Telecommunications Engineering</td>
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<tr>
<td>ENGG1100</td>
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<td>Grand Challenges for Engineering</td>
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<td>ENGG1200</td>
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<td>Undergraduate Special Projects</td>
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<td>ENGG1300</td>
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<tr>
<td>Engineering Mechanics</td>
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<td>ENGG1400</td>
<td>6</td>
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<tr>
<td>Engineering Infrastructure Systems</td>
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</tbody>
</table>
**GEOS1111 | 6 UOC**  
Fundamentals of Geology

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

**MATH1081 | 6 UOC**  
Discrete Mathematics

**MATS1101 | 6 UOC**  
Engineering Materials and Chemistry

**MINE1010 | 6 UOC**  
Mineral Resources Engineering

**PHYS1231 | 6 UOC**  
Higher Physics 1B

**PSYC1001 | 6 UOC**  
Psychology 1A

**SOLA1070 | 6 UOC**  
Sustainable Energy

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