Civil Engineering is responsible for projects that enhance the overall quality of life. Civil engineers design, construct, manage, operate and maintain the infrastructure that supports modern society including buildings, bridges, roads and highways, tunnels, airfields, dams, ports and harbours, railways, new mines, water supply and sewerage schemes, irrigation systems and flood mitigation works. The profession is very broad and affords opportunities for involvement in many specialist activities.

In the final year of the Civil Engineering program students may choose electives in structural engineering, geotechnical engineering, transport engineering, water engineering or engineering construction and management. This program can be taken on a four-year full-time basis, or on a part-time basis subject to the approval of the Head of School. Intending part-time students are advised that all courses are offered only in the daytime.

A detailed program structure can be found on the School website, which includes suggested scheduling of courses by semester. 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.
<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

ENGG1300  |  6 UOC
Engineering Mechanics

ENGG1811  |  6 UOC
Computing for Engineers

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 42 UOC of the following courses.

**CVEN2002 | 6 UOC**
Civil and Environmental Engineering Computations

**CVEN2101 | 6 UOC**
Engineering Construction

**CVEN2303 | 6 UOC**
Structural Analysis and Modelling

**CVEN2401 | 6 UOC**
Sustainable Transport and Highway Engineering

**ENGG2400 | 6 UOC**
Mechanics of Solids 1

**ENGG2500 | 6 UOC**
Fluid Mechanics for Engineers

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

**CVEN3202 | 6 UOC**
Soil Mechanics
Applied Geotechnics and Engineering Geology

Steel Structures

Concrete Structures

Water Resources Engineering

Water and Wastewater Engineering

One of the following:
Civil and Environmental Engineering Practice

Fundamentals of Humanitarian Engineering

**Thesis Courses**

Students must take at least 12 UOC, up to a maximum of 24 UOC of the following courses.

Note: School approval is required to take the alternative thesis options CVEN4951/4952/4953 or CVEN4032/4033

Higher Honours Thesis A

Higher Honours Thesis B
**Discipline Electives**

Students must take at least 6 UOC, up to a maximum of 18 UOC of the following courses.

Note: Students who take CVEN4951 Research Thesis A must take CVEN4701 Planning Sustainable Infrastructure, CVEN4002 Design Practice A or CVEN4003 Design Practice B as one of their discipline electives.

**CODE2170 | 6 UOC**
Building Information Modelling

**CVEN4002 | 6 UOC**
Design Practice A

**CVEN4003 | 6 UOC**
Design Practice B

**CVEN4101 | 6 UOC**
Problem Solving for Engineers

**CVEN4102 | 6 UOC**
Operations and Projects

**CVEN4103 | 6 UOC**
<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVEN4104</td>
<td>6</td>
<td>Engineering Contracts</td>
</tr>
<tr>
<td>CVEN4201</td>
<td>6</td>
<td>Sustainability in Construction</td>
</tr>
<tr>
<td>CVEN4202</td>
<td>6</td>
<td>Rock and Slope Engineering</td>
</tr>
<tr>
<td>CVEN4203</td>
<td>6</td>
<td>Advanced Topics in Geotechnical Engineering</td>
</tr>
<tr>
<td>CVEN4204</td>
<td>6</td>
<td>Geomechanics</td>
</tr>
<tr>
<td>CVEN4300</td>
<td>6</td>
<td>Ground Improvement and Monitoring Techniques</td>
</tr>
<tr>
<td>CVEN4301</td>
<td>6</td>
<td>Structures Practicum</td>
</tr>
<tr>
<td>CVEN4308</td>
<td>6</td>
<td>Advanced Concrete Structures</td>
</tr>
<tr>
<td>CVEN4309</td>
<td>6</td>
<td>Structural Dynamics</td>
</tr>
<tr>
<td>CVEN4310</td>
<td>6</td>
<td>Sustainable Timber Engineering</td>
</tr>
<tr>
<td>CVEN4402</td>
<td>6</td>
<td>Deformation Monitoring Surveys</td>
</tr>
</tbody>
</table>
CVEN4404 | 6 UOC  
Fundamentals of Traffic Engineering

CVEN4503 | 6 UOC  
Groundwater Resource Investigation

CVEN4504 | 6 UOC  
Advanced Water and Wastewater Treatment

CVEN4701 | 6 UOC  
Planning Sustainable Infrastructure

CVEN4703 | 6 UOC  
Advanced Water Quality Principles

CVEN4705 | 6 UOC  
Environmental Sustainability - Methods, Tools, Management

CVEN4800 | 6 UOC  
Satellite Remote Sensing and Applications

CVEN9405 | 6 UOC  
Urban Transport Planning Practice

CVEN9415 | 6 UOC  
Transport Systems Part 2

CVEN9612 | 6 UOC  
Catchment and Water Resources Modelling

CVEN9620 | 6 UOC  
Channels, Rivers and Estuaries

CVEN9640 | 6 UOC  
Coastal Engineering
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVEN9809</td>
<td>6 UOC</td>
</tr>
<tr>
<td>Reinforced Concrete Design</td>
<td></td>
</tr>
<tr>
<td>CVEN9818</td>
<td>6 UOC</td>
</tr>
<tr>
<td>Bridge Engineering</td>
<td></td>
</tr>
<tr>
<td>CVEN9820</td>
<td>6 UOC</td>
</tr>
<tr>
<td>Computational Structural Mechanics</td>
<td></td>
</tr>
<tr>
<td>CVEN9822</td>
<td>6 UOC</td>
</tr>
<tr>
<td>Steel and Composite Structures</td>
<td></td>
</tr>
<tr>
<td>CVEN9824</td>
<td>6 UOC</td>
</tr>
<tr>
<td>Advanced Materials Technology</td>
<td></td>
</tr>
<tr>
<td>CVEN9881</td>
<td>6 UOC</td>
</tr>
<tr>
<td>Hazardous Waste Management</td>
<td></td>
</tr>
<tr>
<td>CVEN9884</td>
<td>6 UOC</td>
</tr>
<tr>
<td>Environmental Chemical and Microbial Processes</td>
<td></td>
</tr>
<tr>
<td>ENGG3001</td>
<td>6 UOC</td>
</tr>
<tr>
<td>Fundamentals of Humanitarian Engineering</td>
<td></td>
</tr>
<tr>
<td>ENGG4060</td>
<td>6 UOC</td>
</tr>
<tr>
<td>Student Initiated Project</td>
<td></td>
</tr>
<tr>
<td>ENGG4102</td>
<td>6 UOC</td>
</tr>
<tr>
<td>Humanitarian Engineering Project</td>
<td></td>
</tr>
<tr>
<td>GMAT3220</td>
<td>6 UOC</td>
</tr>
<tr>
<td>Geospatial Information Systems</td>
<td></td>
</tr>
<tr>
<td>GSOE9740</td>
<td>6 UOC</td>
</tr>
</tbody>
</table>
Level 1 Prescribed Electives

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

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

BABS1201  | 6 UOC
Molecules, Cells and Genes

BIOM1010  | 6 UOC
Engineering in Medicine and Biology

BIOS1301  | 6 UOC
Ecology, Sustainability and Environmental Science

CEIC1000  | 6 UOC
Sustainable Product Engineering and Design

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

CHEM1021  | 6 UOC
Chemistry 1B: Elements, Compounds and Life

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

CHEM1041  | 6 UOC
Higher Chemistry 1B: Elements, Compounds and Life

CHEM1811  | 6 UOC
Engineering Chemistry 1A

CHEM1821  | 6 UOC
<table>
<thead>
<tr>
<th>Code</th>
<th>UOC</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGG1100</td>
<td>6</td>
<td>Grand Challenges for Engineering</td>
</tr>
<tr>
<td>ELEC1111</td>
<td>6</td>
<td>Electrical and Telecommunications Engineering</td>
</tr>
<tr>
<td>GMAT1110</td>
<td>6</td>
<td>Surveying and Geospatial Engineering</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>ENGG1300</td>
<td>6</td>
<td>Engineering Mechanics</td>
</tr>
<tr>
<td>ENGG1400</td>
<td>6</td>
<td>Engineering Infrastructure Systems</td>
</tr>
<tr>
<td>GEOS1111</td>
<td>6</td>
<td>Fundamentals of Geology</td>
</tr>
<tr>
<td>MATH1081</td>
<td>6</td>
<td>Discrete Mathematics</td>
</tr>
</tbody>
</table>
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

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.
Additional Information

Day to day administration of the stream is conducted through the School of Civil & Environmental Engineering to which enquiries should be directed.
Pre-2019 Handbook Editions

Access past handbook editions (2018 and prior)

Pre-2019 Handbook Editions