The School of Civil and Environmental Engineering offers a four year honours degree stream leading to a Bachelor of Engineering (Hons) in Environmental Engineering professionally accredited by Engineers Australia. Flexibility and choice are maintained throughout the entire structure by providing many elective courses.

Environmental engineers are concerned with the environmental impact of engineering activities. They apply their broad knowledge of engineering and environmental processes in identifying environmental problems and in developing effective solutions to them. They also coordinate the activities of specialist groups such as biologists, ecologists and geologists within major projects. The discipline of environmental engineering embraces parts of civil engineering, with emphasis on management, systems design, water, geotechnical and transport engineering, together with aspects of chemical engineering, applied and biological sciences and environmental studies.

This stream 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 stream 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.
**Faculty**
Faculty of Engineering

**School**
School of Civil and Environmental Engineering

**Study Level**
Undergraduate

**Minimum Units of Credit**
168

**Specialisation Type**
Honours
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 42 UOC of the following courses.

BIOS1301 | 6 UOC
Ecology, Sustainability and Environmental Science

ENGG1000 | 6 UOC
Introduction to Engineering Design and Innovation

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 36 UOC of the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIC2009</td>
<td>6</td>
<td>Material and Energy Balances in the Chemical Process Industry</td>
</tr>
<tr>
<td>CVEN2002</td>
<td>6</td>
<td>Civil and Environmental Engineering Computations</td>
</tr>
<tr>
<td>CVEN2402</td>
<td>6</td>
<td>Transport Engineering and Environmental Sustainability</td>
</tr>
<tr>
<td>CVEN2701</td>
<td>6</td>
<td>Water and Atmospheric Chemistry</td>
</tr>
<tr>
<td>ENGG2500</td>
<td>6</td>
<td>Fluid Mechanics for Engineers</td>
</tr>
</tbody>
</table>

One of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH2018</td>
<td>6</td>
<td>Engineering Mathematics 2D</td>
</tr>
<tr>
<td>MATH2019</td>
<td>6</td>
<td>Engineering Mathematics 2E</td>
</tr>
</tbody>
</table>

# Level 3 Core Courses

Students must take 48 UOC of the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVEN3101</td>
<td>6</td>
<td>Engineering Operations and Control</td>
</tr>
</tbody>
</table>
CVEN3202 | 6 UOC
Soil Mechanics

CVEN3203 | 6 UOC
Applied Geotechnics and Engineering Geology

CVEN3501 | 6 UOC
Water Resources Engineering

CVEN3502 | 6 UOC
Water and Wastewater Engineering

CVEN3701 | 6 UOC
Environmental Frameworks, Law and Economics

CVEN3702 | 6 UOC
Solid Wastes and Contaminant Transport

One of the following:
CVEN3031 | 6 UOC
Civil and Environmental Engineering Practice

ENGG3001 | 6 UOC
Fundamentals of Humanitarian Engineering

**Level 4 Core Courses**

Students must take 6 UOC of the following courses.

CVEN4701 | 6 UOC
Planning Sustainable Infrastructure

**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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVEN4032</td>
<td>12</td>
<td>Higher Honours Thesis A</td>
</tr>
<tr>
<td>CVEN4033</td>
<td>12</td>
<td>Higher Honours Thesis B</td>
</tr>
<tr>
<td>CVEN4050</td>
<td>6</td>
<td>Thesis A</td>
</tr>
<tr>
<td>CVEN4051</td>
<td>6</td>
<td>Thesis B</td>
</tr>
<tr>
<td>CVEN4951</td>
<td>4</td>
<td>Research Thesis A</td>
</tr>
<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>
</tbody>
</table>

**Discipline Electives**

Students can take up to a maximum of 12 UOC of the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVEN4002</td>
<td>6</td>
<td>Design Practice A</td>
</tr>
<tr>
<td>CVEN4003</td>
<td>6</td>
<td>Design Practice B</td>
</tr>
<tr>
<td>CVEN4101</td>
<td>6</td>
<td>Problem Solving for Engineers</td>
</tr>
<tr>
<td>CVEN4102</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Units</td>
<td>Course Title</td>
</tr>
<tr>
<td>-------------</td>
<td>-------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>CVEN4103</td>
<td>6</td>
<td>Operations and Projects</td>
</tr>
<tr>
<td>CVEN4104</td>
<td>6</td>
<td>Engineering Contracts</td>
</tr>
<tr>
<td>CVEN4104</td>
<td>6</td>
<td>Sustainability in Construction</td>
</tr>
<tr>
<td>CVEN4201</td>
<td>6</td>
<td>Rock and Slope Engineering</td>
</tr>
<tr>
<td>CVEN4202</td>
<td>6</td>
<td>Advanced Topics in Geotechnical Engineering</td>
</tr>
<tr>
<td>CVEN4203</td>
<td>6</td>
<td>Geomechanics</td>
</tr>
<tr>
<td>CVEN4204</td>
<td>6</td>
<td>Ground Improvement and Monitoring Techniques</td>
</tr>
<tr>
<td>CVEN4300</td>
<td>6</td>
<td>Structures Practicum</td>
</tr>
<tr>
<td>CVEN4402</td>
<td>6</td>
<td>Transport Systems - Part 1: Network Analysis</td>
</tr>
<tr>
<td>CVEN4404</td>
<td>6</td>
<td>Fundamentals of Traffic Engineering</td>
</tr>
<tr>
<td>CVEN4503</td>
<td>6</td>
<td>Groundwater Resource Investigation</td>
</tr>
<tr>
<td>CVEN4507</td>
<td>6</td>
<td>Advanced Water Engineering</td>
</tr>
</tbody>
</table>
CVEN4701 | 6 UOC
Planning Sustainable Infrastructure

CVEN4703 | 6 UOC
Advanced Water Quality Principles

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

CVEN9881 | 6 UOC
Hazardous Waste Management

CVEN9884 | 6 UOC
Environmental Chemical and Microbial Processes

ENGG3001 | 6 UOC
Fundamentals of Humanitarian Engineering

GMAT9600 | 6 UOC
Principles of Remote Sensing
**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 Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BABS1201</td>
<td>6</td>
<td>Molecules, Cells and Genes</td>
</tr>
<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>
</tr>
<tr>
<td>CHEM1021</td>
<td>6</td>
<td>Chemistry 1B: Elements, Compounds and Life</td>
</tr>
<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></td>
</tr>
</tbody>
</table>
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

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