Environmental Engineering

CVENBH

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.
<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 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
Chemistry 1A: Atoms, Molecules and Energy

Engineering Chemistry 1A

**Level 2 Core Courses**

Students must take 36 UOC of the following courses.

CEIC2009 | 6 UOC
Material and Energy Balances in the Chemical Process Industry

CVEN2002 | 6 UOC
Civil and Environmental Engineering Computations

CVEN2402 | 6 UOC
Transport Engineering and Environmental Sustainability

CVEN2701 | 6 UOC
Water and Atmospheric Chemistry

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

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 CVEN4032/033.

CVEN4032 | 12 UOC  
Higher Honours Thesis A

CVEN4033 | 12 UOC  
Higher Honours Thesis B

CVEN4050 | 6 UOC  
Thesis A

CVEN4051 | 6 UOC  
Thesis B

CVEN4951 | 4 UOC  
Research Thesis A

CVEN4952 | 4 UOC  
Research Thesis B

CVEN4953 | 4 UOC  
Research Thesis C

**Discipline Electives**

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

CVEN4002 | 6 UOC  
Design Practice A

CVEN4003 | 6 UOC  
Design Practice B

CVEN4101 | 6 UOC  
Problem Solving for Engineers

CVEN4102 | 6 UOC
<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
<th>Course Title</th>
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</thead>
<tbody>
<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.

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
Engineering Chemistry 1B

COMP1521 6 UOC
Computer Systems Fundamentals

COMP1531 6 UOC
Software Engineering Fundamentals

CVEN1701 6 UOC
Environmental Principles and Systems

ELEC1111 6 UOC
Electrical and Telecommunications Engineering

ENGG1100 6 UOC
Grand Challenges for Engineering

ENGG1200 6 UOC
Undergraduate Special Projects

ENGG1300 6 UOC
Engineering Mechanics

ENGG1400 6 UOC
Engineering Infrastructure Systems

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

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