Specialisation

Mining Engineering

MINEAH | 168 Units of Credit
Overview

This stream extends over four years and students study full-time during the day for twenty-six weeks of each year (excluding examination and recess periods). Year 1 of the stream includes courses that cover the sciences to provide the foundation for many of the engineering courses offered in Year 2. Year 3 is largely devoted to fundamental courses in mining engineering while Year 4 provides advanced instruction in aspects essential for all mining engineers. Elective courses are offered in both Year 3 and Year 4 of the stream.

An important requirement in the fourth year is for students to undertake personal research or a study project in mining or minerals engineering for which they are required to submit a dissertation for examination. After graduation, mining engineers who choose to develop careers in operations management gain further practical experience to obtain a Mine Manager's Certificate of Competency, in either Coal or Metalliferous Mining. Formal arrangements are in place with the University of Newcastle for students who have completed a specified program to be admitted with advanced standing to Year 3 of the program at UNSW. Recognition of students from other institutions or graduates of other disciplines may also be considered for advanced standing to the stream.

Stream Structure

The stream structure shown indicates one sequence of courses that fulfils the requirements of the stream rules.

As the stream structure indicates, a number of course electives are offered each semester in Year 3 and Year 4. This allows the student to specialize in systems of mining either surface or underground or both; in advanced studies of core technical fields; or, opt for a broader professional perspective.

Part of the requirements for MINE4710 Mine Management is completion of 60 days of industrial training and submission of a report on the work undertaken.
**Faculty**
Faculty of Engineering

**School**
School of Minerals & Energy Resources 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 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGG2400</td>
<td>6</td>
</tr>
<tr>
<td>Mechanics of Solids 1</td>
<td></td>
</tr>
<tr>
<td>MATH2089</td>
<td>6</td>
</tr>
<tr>
<td>Numerical Methods and Statistics</td>
<td></td>
</tr>
<tr>
<td>MATS2005</td>
<td>6</td>
</tr>
<tr>
<td>Introduction to Fluid Flow and Heat Transfer</td>
<td></td>
</tr>
<tr>
<td>MINE2010</td>
<td>6</td>
</tr>
<tr>
<td>Mining Project Development</td>
<td></td>
</tr>
<tr>
<td>MINE2610</td>
<td>6</td>
</tr>
<tr>
<td>Mining Services</td>
<td></td>
</tr>
<tr>
<td>MINE2810</td>
<td>6</td>
</tr>
<tr>
<td>Minerals and Processing</td>
<td></td>
</tr>
</tbody>
</table>

One of the following:

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

# Level 3 Core Courses

Students must take 42 UOC of the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINE3220</td>
<td>6</td>
</tr>
<tr>
<td>Resource Estimation</td>
<td></td>
</tr>
<tr>
<td>MINE3230</td>
<td>6</td>
</tr>
<tr>
<td>Mine Planning</td>
<td></td>
</tr>
</tbody>
</table>
Level 4 Core Courses

Students must take 36 UOC of the following courses.

MINE4250 | 6 UOC
Hardrock Mine Design and Feasibility Project

MINE4260 | 6 UOC
Coal Mine Design and Feasibility Project

MINE4310 | 6 UOC
Mine Geotechnical Engineering

MINE4710 | 6 UOC
Mine Management

MINE4951 | 4 UOC
Research Thesis A

MINE4952 | 4 UOC
Research Thesis B
# 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>BABS1201</td>
<td>6</td>
</tr>
<tr>
<td>BIOM1010</td>
<td>6</td>
</tr>
<tr>
<td>BIOS1301</td>
<td>6</td>
</tr>
<tr>
<td>CEIC1000</td>
<td>6</td>
</tr>
<tr>
<td>CHEM1011</td>
<td>6</td>
</tr>
<tr>
<td>CHEM1021</td>
<td>6</td>
</tr>
<tr>
<td>CHEM1031</td>
<td>6</td>
</tr>
<tr>
<td>CHEM1041</td>
<td>6</td>
</tr>
<tr>
<td>CHEM1811</td>
<td>6</td>
</tr>
</tbody>
</table>

BABS1201: Molecules, Cells and Genes

BIOM1010: Engineering in Medicine and Biology

BIOS1301: Ecology, Sustainability and Environmental Science

CEIC1000: Sustainable Product Engineering and Design

CHEM1011: Chemistry 1A: Atoms, Molecules and Energy

CHEM1021: Chemistry 1B: Elements, Compounds and Life

CHEM1031: Higher Chemistry 1A: Atoms, Molecules and Energy

CHEM1041: Higher Chemistry 1B: Elements, Compounds and Life

CHEM1811: 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
Students must take 12 UOC of the following courses;

- MINE3000 - Research Elective (6 UOC)
- MINE3440 - Surface Mining Systems (6 UOC)
- MINE3450 - Underground Mining Systems (6 UOC)
- MINE4320 - Advanced Geotechnical Engineering (6 UOC)
- MINE4510 - Advanced Mine Ventilation (6 UOC)
- MINE4610 - Mining Asset Management and Services (6 UOC)
- MINE4910 - Mining in a Global Environment (6 UOC)
- PTRL2019 - Reservoir Engineering A (6 UOC)
- PTRL2114 - Petroleum Geophysics (6 UOC)
- PTRL2030 - Field Development Geology (6 UOC)

**Industrial Experience Requirement**

Students must each complete at least 60 days approved industrial training concurrent with enrolment in the program.
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

Recommended plans of study may be found here.
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