Petroleum Engineering is a specialised engineering discipline which prepares graduates for careers in the oil and gas industries. Its related operations apply physical, mathematical and engineering principles to identify and solve problems associated with exploration, exploitation, drilling, production and all the related economic and management problems associated with the recovery of hydrocarbons and alternative sources of energy from deep beneath the earth's surface.
**Faculty**
Faculty of Engineering

**School**
School of Minerals & Energy Resources Engineering

**Study Level**
Undergraduate

**Minimum Units of Credit**
168

**Specialisation Type**
Honours
Learning Outcomes

1. Ethical conduct and professional accountability.
   - Professionals
   - Global Citizens

2. Professional use and management of information.
   - Scholars
   - Leaders

3. Effective team membership and team leadership.
   - Professionals
   - Global Citizens
   - Scholars
   - Leaders

4. Creative, innovative and pro-active demeanour.
   - Scholars
   - Leaders
   - Professionals

5. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline.
   - Scholars

6. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.
   - Scholars

7. In-depth understanding of specialist bodies of knowledge within the engineering discipline.
   - Scholars

8. Discernment of knowledge development and research directions within the engineering discipline.
   - Scholars

9. Knowledge of engineering design practice and contextual factors impacting the engineering discipline.
   - Professionals
   - Global Citizens
   - Scholars

10. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.
    - Scholars
    - Professionals
    - Global Citizens

11. Application of established engineering methods to complex engineering problem solving.
    - Professionals
    - Global Citizens
    - Scholars

12. Fluent application of engineering techniques, tools and resources.
Graduate Capabilities:

For more information on Graduate Capabilities, please click on this link.
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

**MATS1101** 6 UOC
Engineering Materials and Chemistry

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.

- **CEIC2001 | 6 UOC**  
  Fluid and Particle Mechanics

- **PTRL2010 | 6 UOC**  
  Business Practices in the Petroleum Industry

- **PTRL2019 | 6 UOC**  
  Reservoir Engineering A

- **PTRL2020 | 6 UOC**  
  Petrophysics

- **PTRL2030 | 6 UOC**  
  Field Development Geology

- **PTRL2114 | 6 UOC**  
  Petroleum Geophysics

One of the following:
- **MATH2018 | 6 UOC**  
  Engineering Mathematics 2D

- **MATH2019 | 6 UOC**  
  Engineering Mathematics 2E

Level 3 Core Courses

Students must take 42 UOC of the following courses.

- **PTRL3001 | 6 UOC**  
  Reservoir Engineering B

- **PTRL3015 | 6 UOC**  
  Well Drilling Equipment and Operations
Level 4 Core Courses

Students must take 36 UOC of the following courses Note: School approval is required to undertake the alternative thesis options PTRL4040 and PTRL4041

PTRL4012 | 6 UOC
Enhanced Oil and Gas Recovery

PTRL4017 | 6 UOC
Well Technology

PTRL4020 | 6 UOC
Natural Gas Engineering

PTRL4021 | 6 UOC
Petroleum Production Engineering

Level 4 Project / Thesis

Students must take 12 UOC of either PTRL4010 (6 UOC) and PTRL4011 (6UOC), or PTRL4951 (4 UOC) and PTRL4952 (4 UOC) and PTRL4953 (4 UOC). Note: School approval is required to undertake the alternative thesis options
Level 1 Prescribed Electives

Students must take 12 UOC of the following courses. NOTE: - CHEM1031 and CHEM1041 are only available to students enrolled in a Program with a major in Chemistry - GEOS1101 is the recommended first year elective for this specialisation

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

**DISCIPLINE ELECTIVES (SINGLE DEGREE MODE)**

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

AVIA3013 | 6 UOC
Workplace Safety

CEIC2000 | 6 UOC
Material and Energy Systems
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<tr>
<th>Code</th>
<th>UOC</th>
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<tbody>
<tr>
<td>CEIC2002</td>
<td>6</td>
<td>Heat and Mass Transfer</td>
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<td>CEIC2004</td>
<td>6</td>
<td>Industrial Chemistry for Chemical Engineers</td>
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<tr>
<td>CEIC2009</td>
<td>6</td>
<td>Material and Energy Balances in the Chemical Process Industry</td>
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<tr>
<td>CHEM2011</td>
<td>6</td>
<td>Physical Chemistry: Molecules, Energy and Change</td>
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<td>CHEM2021</td>
<td>6</td>
<td>Organic Chemistry: Mechanisms and Biomolecules</td>
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<tr>
<td>CHEM2031</td>
<td>6</td>
<td>Inorganic Chemistry: The Elements</td>
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<tr>
<td>CHEM2041</td>
<td>6</td>
<td>Analytical Chemistry: Essential Methods</td>
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<td>COMP1511</td>
<td>6</td>
<td>Programming Fundamentals</td>
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<td>COMP1927</td>
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<td>Computing 2</td>
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<td>COMP4920</td>
<td>6</td>
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<td>CVEN2501</td>
<td>6</td>
<td>Principles of Water Engineering</td>
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<td>CVEN3502</td>
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<td>ECON1101</td>
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<td>ECON1102</td>
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<td>ECON1107</td>
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<td>ELEC4122</td>
<td>6</td>
<td>Strategic Leadership and Ethics</td>
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<td>ELEC4445</td>
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<td>Entrepreneurial Engineering</td>
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<td>ENGG0360</td>
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<td>Communicating in Engineering</td>
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<td>FINS1613</td>
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<td>Business Finance</td>
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<td>GEOS1701</td>
<td>6</td>
<td>Environmental Systems, Processes and Issues</td>
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<td>GEOS2241</td>
<td>6</td>
<td>Peak Carbon: Climate Change and Energy Policy</td>
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<tr>
<td>GEOS2711</td>
<td>6</td>
<td>Australian Climate and Vegetation</td>
</tr>
<tr>
<td>GEOS2721</td>
<td>6</td>
<td>Australian Surface Environments and Landforms</td>
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</tbody>
</table>
GEOS2821 | 6 UOC
Introduction to GIS and Remote Sensing

GEOS3141 | 6 UOC
Mineral and Energy Resources

GEOS3733 | 6 UOC
Environmental Geophysics

GEOS3761 | 6 UOC
Environmental Change

GSOE9712 | 6 UOC
Engineering Statistics and Experiment Design

MARK1012 | 6 UOC
Marketing Fundamentals

MATH2089 | 6 UOC
Numerical Methods and Statistics

MATH2301 | 6 UOC
Mathematical Computing

MATS2001 | 6 UOC
Physical Properties of Materials

MATS2008 | 6 UOC
Thermodynamics and Phase Equilibria

MGMT1001 | 6 UOC
Managing Organisations and People

MGMT2724 | 6 UOC
Health and Safety at Work
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)

Pre-2019 Handbook Editions