Overview

**This stream is not accepting new enrolments**

Industrial Chemistry involves researching, developing and improving properties of products we use every day through the selection and design of the chemistry employed in industrial processing. It's about taking projects from inception as a research proposal, through product development and on to commercialisation and manufacture. You'll learn how to apply your knowledge engineering and chemistry to design chemical processes and products in environmental management, general industry and services like water delivery. You'll master the entire process, extrapolating small scale, laboratory chemistry into large, industrial scale production. To get work ready, you'll apply these skills through 60 days of approved industry training.
<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 Chemical 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.

- **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

One of the following:
- **CHEM1011** | 6 UOC  
  Chemistry 1A: Atoms, Molecules and Energy
CHEM1031 | 6 UOC  
Higher Chemistry 1A: Atoms, Molecules and Energy

One of the following:
CHEM1021 | 6 UOC  
Chemistry 1B: Elements, Compounds and Life

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

**Level 2 Core Courses**

Students must take 48 UOC of the following courses.

CEIC2000 | 6 UOC  
Material and Energy Systems

CEIC2001 | 6 UOC  
Fluid and Particle Mechanics

CEIC2002 | 6 UOC  
Heat and Mass Transfer

CEIC2005 | 6 UOC  
Chemical Reaction Engineering

CHEM2021 | 6 UOC  
Organic Chemistry: Mechanisms and Biomolecules

CHEM2041 | 6 UOC  
Analytical Chemistry: Essential Methods

MATH2089 | 6 UOC  
Numerical Methods and Statistics

One of the following:
MATH2019 | 6 UOC  
Engineering Mathematics 2E
**Level 3 Core Courses**

Students must take 30 UOC of the following courses.

**CEIC3006 | 6 UOC**  
Process Dynamics and Control

**CHEM2031 | 6 UOC**  
Inorganic Chemistry: The Elements

**CHEM3021 | 6 UOC**  
Organic Chemistry: Modern Synthetic Strategies

**POLY3000 | 6 UOC**  
Polymer Science

One of the following:

**CEIC3001 | 6 UOC**  
Advanced Thermodynamics and Separation

**INDC3001 | 6 UOC**  
Applied Industrial Chemistry

**Level 4 Core Courses**

Students must take 30 UOC of the following courses.

**CEIC4000 | 6 UOC**  
Environment and Sustainability

**CEIC4001 | 12 UOC**  
Process Design Project

**CEIC4002 | 6 UOC**  
Thesis A

**CEIC4003 | 6 UOC**
## Discipline Electives

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIC3005</td>
<td>6</td>
</tr>
<tr>
<td>CEIC6004</td>
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<tr>
<td>CEIC6005</td>
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<tr>
<td>CEIC8102</td>
<td>6</td>
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<td>CEIC8204</td>
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<td>CEIC8330</td>
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<td>CEIC8341</td>
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<tr>
<td>CEIC9002</td>
<td>12</td>
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<tr>
<td>CEIC9003</td>
<td>12</td>
</tr>
<tr>
<td>CHEN6701</td>
<td>6</td>
</tr>
</tbody>
</table>

**Process Plant Design**

**Advanced Polymers**

**Fuel and Energy**

**Advanced Process Control**

**Topics in Business Management in Chemical Engineering**

**Process Engineering in the Petroleum Industry**

**Membrane Processes**

**Advanced Thesis A**

**Advanced Thesis B**

**Advanced Reaction Engineering**
CHEN6703 | 6 UOC
Advanced Particle Systems Engineering

CHEN6706 | 6 UOC
Advanced Transport Phenomena

FOOD3010 | 6 UOC
Food Preservation

**Level 1 Prescribed Electives**

Students must take at least 6 UOC of the following courses.

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
<table>
<thead>
<tr>
<th>Course Code</th>
<th>UOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM1811</td>
<td>6</td>
</tr>
<tr>
<td>CHEM1821</td>
<td>6</td>
</tr>
<tr>
<td>COMP1521</td>
<td>6</td>
</tr>
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<td>COMP1531</td>
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<td>CVEN1300</td>
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<tr>
<td>CVEN1701</td>
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<tr>
<td>ELEC1111</td>
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<tr>
<td>ENGG1200</td>
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<tr>
<td>ENGG1400</td>
<td>6</td>
</tr>
<tr>
<td>GEOS1111</td>
<td>6</td>
</tr>
<tr>
<td>GMAT1110</td>
<td>6</td>
</tr>
<tr>
<td>MATH1081</td>
<td>6</td>
</tr>
</tbody>
</table>
Discrete Mathematics

MATS1101  |  6 UOC
Engineering Materials and Chemistry

MINE1010  |  6 UOC
Mineral Resources Engineering

MMAN1300  |  6 UOC
Engineering Mechanics

PHYS1231  |  6 UOC
Higher Physics 1B

PSYC1001  |  6 UOC
Psychology 1A

PTRL1001  |  6 UOC
Introduction to Petroleum Engineering and Geology

SOLA1070  |  6 UOC
Sustainable Energy

**Discipline Electives Information Rule**

Students who complete this program in single degree mode select a further 12 UOC Discipline Electives.

**Recommended Level 1 Prescribed Elective**

- CEIC1000 Product Engineering Design (6 UOC)

**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**

**Industrial Experience Requirements**

Students are required to complete a minimum of 60 days of Industrial Training. This requirement is attached to the course CEIC4000 - results are computed but not entered while the Industrial Training requirement is not met.

**Professional Recognition**

Successful completion of the BE (Hons) (Chemical Engineering) degree program is accepted by Engineers Australia and by the Royal Australian Chemical Institute as sufficient academic qualification for membership.

**Further Requirements**

Students are expected to possess a calculator having exponential capabilities, however, more advanced calculators and personal computers, will be found useful.

Students of both Chemical Engineering and Industrial Chemistry are advised to have a copy of Perry J H Ed. Chemical Engineers Handbook 6th Ed. McGraw-Hill. This book is used extensively for most courses and units.
Pre-2019 Handbook Editions

Access past handbook editions (2018 and prior)
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Authorised by Deputy Vice-Chancellor (Academic)
CRICOS Provider Code 00098G
ABN: 57 195 873 179