Industrial Chemistry

CEICBH

**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.
**Faculty**  
Faculty of Engineering

**School**  
School of Chemical 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.

**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

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>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEIC3005</td>
<td>6</td>
<td>Process Plant Design</td>
</tr>
<tr>
<td>CEIC6004</td>
<td>6</td>
<td>Advanced Polymers</td>
</tr>
<tr>
<td>CEIC6005</td>
<td>6</td>
<td>Fuel and Energy</td>
</tr>
<tr>
<td>CEIC8102</td>
<td>6</td>
<td>Advanced Process Control</td>
</tr>
<tr>
<td>CEIC8204</td>
<td>6</td>
<td>Topics in Business Management in Chemical Engineering</td>
</tr>
<tr>
<td>CEIC8330</td>
<td>6</td>
<td>Process Engineering in the Petroleum Industry</td>
</tr>
<tr>
<td>CEIC8341</td>
<td>6</td>
<td>Membrane Processes</td>
</tr>
<tr>
<td>CEIC9002</td>
<td>12</td>
<td>Advanced Thesis A</td>
</tr>
<tr>
<td>CEIC9003</td>
<td>12</td>
<td>Advanced Thesis B</td>
</tr>
<tr>
<td>CHEN6701</td>
<td>6</td>
<td>Advanced Reaction Engineering</td>
</tr>
</tbody>
</table>
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
CHEM1811  |  6 UOC  
Engineering Chemistry 1A

CHEM1821  |  6 UOC  
Engineering Chemistry 1B

COMP1521  |  6 UOC  
Computer Systems Fundamentals

COMP1531  |  6 UOC  
Software Engineering Fundamentals

CVEN1300  |  6 UOC  
Engineering Mechanics for Civil Engineers

CVEN1701  |  6 UOC  
Environmental Principles and Systems

ELEC1111  |  6 UOC  
Electrical and Telecommunications Engineering

ENGG1200  |  6 UOC  
Undergraduate Special Projects

ENGG1400  |  6 UOC  
Engineering Infrastructure Systems

GEOS1111  |  6 UOC  
Fundamentals of Geology

GMAT1110  |  6 UOC  
Surveying and Geospatial Engineering

MATH1081  |  6 UOC
<table>
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<tr>
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</tr>
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<tbody>
<tr>
<td>MATS1101</td>
<td>6</td>
<td>Discrete Mathematics</td>
</tr>
<tr>
<td>MINE1010</td>
<td>6</td>
<td>Engineering Materials and Chemistry</td>
</tr>
<tr>
<td>MMAN1300</td>
<td>6</td>
<td>Mineral Resources Engineering</td>
</tr>
<tr>
<td>PHYS1231</td>
<td>6</td>
<td>Higher Physics 1B</td>
</tr>
<tr>
<td>PSYC1001</td>
<td>6</td>
<td>Psychology 1A</td>
</tr>
<tr>
<td>PTRL1001</td>
<td>6</td>
<td>Introduction to Petroleum Engineering and Geology</td>
</tr>
<tr>
<td>SOLA1070</td>
<td>6</td>
<td>Sustainable Energy</td>
</tr>
</tbody>
</table>

**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**

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**

**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)

Pre-2019 Handbook Editions
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Authorised by Deputy Vice-Chancellor (Academic)
CRICOS Provider Code 00098G
ABN: 57 195 873 179