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.
<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>
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<tr>
<td><strong>Specialisation Type</strong></td>
<td>Honours</td>
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</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.

CEIC3005 | 6 UOC
Process Plant Design

CEIC6004 | 6 UOC
Advanced Polymers

CEIC6005 | 6 UOC
Fuel and Energy

CEIC8102 | 6 UOC
Advanced Process Control

CEIC8204 | 6 UOC
Topics in Business Management in Chemical Engineering

CEIC8330 | 6 UOC
Process Engineering in the Petroleum Industry

CEIC8341 | 6 UOC
Membrane Processes

CEIC9002 | 12 UOC
Advanced Thesis A

CEIC9003 | 12 UOC
Advanced Thesis B

CHEN6701 | 6 UOC
Advanced Reaction Engineering
**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
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**

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