



UNSW Engineering

# Bachelor of Engineering (Honours) (Chemical Product Engineering)

## What do chemical product engineers do?

Chemical product engineers identify customer needs and create innovative products that meet those needs. They create new materials, processes, and technologies in industries producing pharmaceuticals, cosmetics, biomedical devices, and advanced materials. As a product engineer, you can develop products people use in everyday life, designing new shampoos, paints, or foods to be sustainable, environmentally friendly, affordable, and high performance.

Chemical Product Engineering is based on a new frontier for chemical engineers, with a strong emphasis on product design and development. Its potential uses are practically unlimited in industrial and scientific fields. As a product engineer your success is measured by the ability to develop innovative solutions, affordably apply new discoveries in chemistry and chemical engineering, and deliver novel products for the future.

## What will your study involve?

This degree focuses on product design and development in a collaborative and innovative culture. You'll build on study of chemistry, physics, engineering, and economics to create commercial products in fields spanning the pharmaceuticals, cosmetics, agricultural and food industries. The degree ensures that graduates can meet rapidly changing customer demands for new materials, products, and ingredients in the global marketplace.

## UNSW Chemical Product Engineering

- UNSW Chemical Engineering is ranked 2nd in Australia (Academic Ranking of World Universities (ARWU), 2023).
- Close links with key industrial, commercial and professional organisations providing unique student led projects and industry-based training.
- Hands on lab-based courses in state-of-the-art labs using real process equipment.
- Product design Thesis projects developing actual product prototypes along with viable commercial intellectual property strategies.

## Program details

**Lowest Selection Rank (2025):** 92

**Duration:** Four-year embedded honours degree

**Study areas:** Chemical Product Design, Chemical Reaction and Separation Engineering, Organic and Inorganic Chemistry, Advanced Thermodynamics, Polymer Science, Sustainability, Entrepreneurship and Innovation Management and Patenting.

**Assumed knowledge:** Mathematics Extension 1, Physics, Chemistry

## Portfolio Entry

UNSW offers the Faculty of Engineering Admission Scheme (FEAS) which is a pathway for students interested in studying undergraduate engineering to support their academic results, find out more at [unsw.to/feas](https://unsw.to/feas)

## Accreditation

Your Bachelor of Engineering (honours) degree is recognised globally, it's accredited with Engineers Australia, and is also acknowledged by the Washington Accord, which lets you work in over 20 countries across the globe upon graduation.

## Career options

This broad degree opens doors to many different industries including energy, materials science, fine chemicals, pharmaceuticals, health, cosmetics, household care, food, the environment and electronics.

With a strong foundation in chemical process engineering, the product design element of this degree will give you a valuable employability edge. The ability to design and take a product to market is a highly sought after skill among employers.

# Example Study Plan



Year 1		Year 2		Year 3		Year 4	
Term 1	<b>DESN1000</b> Introduction to Engineering Design and Innovation	Term 1	<b>CEIC2000</b> Materials and Energy Systems	Term 1	<b>MATH2018</b> Engineering Mathematics 2D	Term 1	<b>CEIC4007</b> Product Design Project Thesis A
	<b>CHEM1811</b> Engineering Chemistry 1A		<b>CEIC2001</b> Fluid and Particle Mechanics		<b>CHEM3021</b> Organic Chemistry: Modern Synthetic Strategies		<b>CEIC6711</b> Complex Fluids Microstructure & Rheology
	<b>MATH1131</b> Mathematics 1A <b>OR</b> <b>MATH1141</b> Higher Mathematics 1A		<b>MATH2089</b> Numerical Methods and Statistics		<b>General Education Course</b>		<b>Discipline Elective Course</b>
Term 2	<b>ENGG1811</b> Computing for Engineers	Term 2	<b>CEIC2002</b> Heat and Mass Transfer	Term 2	<b>CEIC8104</b> Topics in Polymer Technology	Term 2	<b>CEIC4008</b> Product Design Project Thesis B
	<b>CHEM1821</b> Engineering Chemistry 1B		<b>CEIC2005</b> Chemical Reaction Engineering		<b>General Education Course</b>		<b>CEIC8204</b> Entrepreneurship & the Innovation Cycle
	<b>MATH1231</b> Mathematics 1B <b>OR</b> <b>MATH1241</b> Higher Mathematics 1B		<b>CHEM2021</b> Organic Chemistry: Mechanisms & Biomolecules		<b>Free Elective Course</b>		<b>Discipline Elective Course</b>
Term 3	<b>CEIC1000</b> Sustainable Product Engineering and Design	Term 3	<b>CHEM2031</b> Inorganic Chemistry: The Elements	<b>Industrial Training</b>		Term 3	<b>CEIC4000</b> Environment and Sustainability
	<b>CHEM2041</b> Analytical Chemistry: Essential Methods		<b>DESN2000</b> Engineering Design and Professional Practice				<b>Discipline Elective Course</b>
	<b>PHYS1121</b> Physics 1A <b>OR</b> <b>PHYS1131</b> Higher Physics 1A		<b>CEIC3001</b> Advanced Thermodynamics and Separation				

## NOTES

You'll be required to complete 60 days of Industrial Training throughout your degree.

This degree example is indicative only and subject to change at any time without prior notice.  
For the latest degree information visit the relevant UNSW Handbook page at [www.handbook.unsw.edu.au](http://www.handbook.unsw.edu.au).

UNSW's new 'flex-semester' calendar is scheduled to start in 2028.  
For more information see <https://www.unsw.edu.au/academic-calendar-project>.



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Degree  
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