



THE UNIVERSITY OF
MELBOURNE

Melbourne School
of Engineering



CHEMICAL ENGINEERING CAREER PATHWAYS

➤ For more information, visit
eng.unimelb.edu.au

CHEMICAL ENGINEERING AT MELBOURNE

Chemical engineering offers diverse career options in a range of areas including chemical processing, environmental management, food and beverage manufacture, minerals and mining, oil and gas refining, petrochemicals and pharmaceuticals.

The Melbourne School of Engineering is the leading provider of engineering and IT education in Australia,* and ranked 30th in the world for Chemical Engineering#.

Our professional master of engineering program is the first graduate program in Australia to offer accreditation from Engineers Australia and EUR-ACE®, enabling graduates to practice as engineers in Australia, Europe, the US, Singapore, Japan, and more.

The Master of Engineering (Chemical) provides depth, breadth and flexibility to a curriculum taught by world-class educators, access to industry based learning opportunities, and a generous program of scholarships.

Our chemical engineering programs include:

- » [Master of Engineering \(Chemical\)](#)
- » [Master of Engineering \(Chemical with Business\)](#)
- » [Master of Philosophy \(Engineering\)](#)
- » [Doctor of Philosophy \(Engineering\)](#)



Specialisations

As a chemical engineer, you could specialise in diverse fields including:

- » **Bioprocessing:** pharmaceuticals and the food and drink industries.
- » **Chemical Processing:** fertiliser industry, including pesticides and herbicides, caustic soda, glass, explosives and specialty chemicals.
- » **Combustion:** large industrial furnaces like those for steel manufacture or for power generation from coal or gas.
- » **Environmental:** waste and water treatment, environmental regulations, bioremediation and recycling.
- » **Minerals:** major minerals processing industries such as alumina/ aluminium, steel, copper, lead, uranium and gold.
- » **Petrochemicals:** conversion of oil and gas into plastics, synthetic rubber and similar end uses.
- » **Petroleum:** production of oil, gas and LPG from onshore and offshore fields.
- » **Process Control:** instrumentation and control systems which enable a manufacturing process to run smoothly, safely and efficiently.
- » **Project Delivery:** construction of a processing plant, converting the design into an efficient, safe operating plant.†

*No. 1 in Australia; No.28 in the world. QS World University Rankings by Subject 2017. †QS World University Rankings by Subject 2017. ‡Australian Government Job Guide.

Develop crucial soft skills for industry success

During her Master of Engineering (Chemical), Alisha D'Souza undertook several internships with oil and gas firm Shell, where she now works as a Production Engineer. Alisha oversees the process of extracting natural gas from the ground and processing it to make it safe for use in the home.

“What I really took from my engineering degree apart from the technical skills, were the soft skills that you need to succeed in industry – collaboration, working with people in a team and leadership skills, and these work really well for me now in my job with Shell Australia.”

Alisha D'Souza
Production Engineer
Shell Australia



Job Outlook

Engineering professionals are in demand, not only in Australia, but across the globe. With a rapidly growing population, the need for engineers will become more critical than ever to ensure our cities have adequate transport, power, water, telecommunications and healthcare.

Students are advised to begin building their employability skills whilst at University, to give themselves the best start to their careers. Visit the University Careers Service to find out more: careers.unimelb.edu.au

For more information about the job outlook for this sector, please visit the Australian Government's Employment Projections and Job Outlook website: joboutlook.gov.au

For information about salaries, see: graduateopportunities.com

Sectors & Employers

CHEMICAL ENGINEERING SECTORS & INDUSTRIES		EXAMPLES OF EMPLOYERS		
Bioremediation	Minerals and Energy	Alcoa	Fonterra	Arrium Limited
Chemical Manufacturing	Petrochemicals	BHP Billiton	GHD	OZ Minerals
Consulting	Petroleum	BP Australia	Halliburton	Qenos
Food and Beverage Production	Pharmaceutical	CSL Limited	HRL Technology	Rio Tinto
Government Departments, Agencies and Municipal Authorities	Research and Development	Defence Science and Technology	Melbourne Water	Schlumberger
Industrial	Tertiary	ExxonMobil	Newmont	Shell
	Waste and Water Treatment	Fluor	Nufarm	Visy
			Orica Limited	WorleyParsons

Career Progression

GRADUATE	3-5 YEARS EXPERIENCE		10 YEARS
Graduate Chemical Engineer	Chemical Engineer	Fuels Engineer	Principal Chemical Engineer
Graduate Environmental Chemical Engineer	Chemical Food Process Engineer	Inventory Analyst	Process Controls Superintendent
Graduate Biochemical Engineer	Chemical Process Engineer	Line Manager	Process Superintendent
Graduate Process Engineer	Chemical Engineer – Bioremediation	Plastics Engineer	Production Manager
Chemical Research Engineer	Chemical Engineer – Mining	Project/Design Engineer	Project Manager
	Chemical Engineer – Petroleum/Petrochemicals	Process Modelling Chemical Engineer	Senior Chemical Engineer
	Chemical Engineer – Pharmaceuticals	Process Supervisor	Senior Environmental Chemical Engineer
	Chemical Engineer – Waste/Water Management	Process Support Technologist	Senior Chemical Process Engineer
	Chemical/Process Engineer – Food Industry	Refinery Process Engineer	
	Chemical/Process Engineer – Hydrocarbons	Technical Innovation Specialist – Mining and Resources	
	Environmental Chemical Engineer		



Alternative Careers

An engineering degree at the University of Melbourne gives you a solid technical and design foundation combined with strong analytical, problem solving and communication skills valued across a range of industries. Other areas our graduates have moved into include:

- » Management consulting
- » Finance, economics and banking
- » Business analysis
- » Project management
- » Technical sales, marketing and communications
- » Intellectual property management
- » Technical writing
- » Government and policy

Careers in Research

If you are passionate about a field of electrical engineering and would like to advance your research skills, enrolling in a graduate research degree could be a great option for you. Graduate research enhances your ability to problem solve, think autonomously and creatively, and analyse. Careers in research are diverse and may include:

- » academic positions at universities;
- » policy-making or research positions at public sector organisations;
- » private sector research and development projects;
- » self-employed consulting positions on technical or policy issues in your area of expertise.

Employability Services and Industry Links

Students undertaking our programs have access to a range of employability services, and benefit from a curriculum that offers excellent opportunities to connect with industry through:

- » an elective internship subject
- » student projects partnered with industry
- » guest lectures led by industry leaders and experts
- » site visits hosted by key organisations
- » industry networking events
- » career panels featuring industry representatives
- » career question drop-in service
- » an online jobs and internships portal



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