2025

SMUCE

2025 Career Guide

YOUR LINK WITH INDUSTRY

SMUCE

Note from the *Head of Department*

SMUCE plays an important role in the Department of Chemical and Biological Engineering. They maintain a bridge between students and academics with regular and candid feedback on our teaching so we collectively benefit and ensure the desired learning outcomes for the students. As we emerge from COVID-induced disturbance and more face-to-face learning, SMUCE will continue to play an even more important role in fostering interaction among students and between the students and academics.

SMUCE undertakes many activities, as anyone can glean from its website. Career Guide is one output from them, a significant publication that relates students with opportunities presented by our industries, governments and academics. These opportunities are varied - work, internship, research, and mentoring, to name a few. I congratulate the SMUCE leadership for producing this publication and look forward to continued collaboration with SMUCE for our shared positive future. Best wishes for 2024.

Professor Sankar Bhattacharya

Head of Department, Department of Chemical and Biological Engineering

Note from the *Authors*

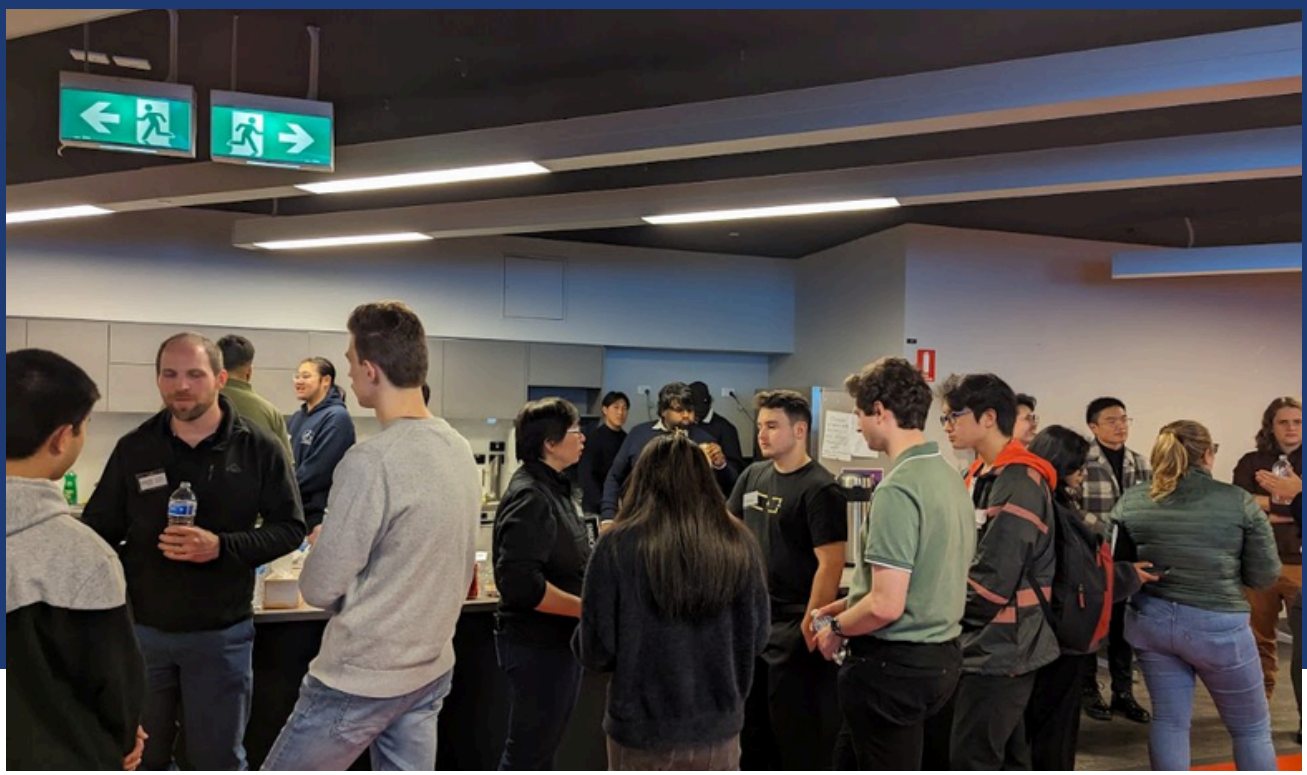
Welcome to the Society of Monash University Chemical Engineers (SMUCE) 2025 Careers Guide.

We are thrilled to present this careers guide, created to support the next generation of chemical engineers towards their professional career. This guide brings together a range of academic and industry perspectives and experiences to offer practical advice and meaningful insights into the many opportunities within the field.

Chemical engineering is a dynamic and multifaceted discipline, offering a wide range of career opportunities. From driving progress in renewable energy and environmental sustainability to advancing innovations in pharmaceutical products, chemical engineers play a vital role in shaping the future. This guide has been designed to help you navigate the wide variety of career paths available, understand the skills and qualifications required and take the meaningful steps toward achieving your professional goals.

Throughout this guide, you will find company guides, expert advice and personal reflections to highlight the opportunities and challenges you may face. We hope this year's guide helps you approach your future in chemical engineering with all the tools you need to succeed.

— Rainer Wang, Adam Loh & Sedhsidhchhadaphea Khunjuline



About SMUCE.

The Society of Monash University Chemical Engineers (SMUCE) is a student-run society aiming to bridge the gap between the classrooms and the world outside the university. It serves as a link between students, academics and industry.

Through our hugely popular Industry Seminar Series we strive to expose our fellow students to the chemical engineering world by regularly inviting industry members to visit. We also work closely with the Department of Chemical Engineering and Monash Employment and Careers Development to increase student awareness of the professional opportunities and to build upon the skills necessary to aid them in their professional undertakings.

Socially, SMUCE organises a number of events to facilitate networking opportunities between students, different year levels and academic staff. Such events include barbecues, game competition nights and our annual Cocktail Night.

Scan to see more events!

The Sponsors.

Platinum

We make, import, blend and deliver fuels, lubricants, solvents and bitumen through our extensive national and international supply chains.

The Australian economy relies on the products we supply, our experience in operating supply chains safely and reliably, and our commitment to helping Australian motorists, businesses and industries.

We're proudly Australian, extremely proud of our history and excited to be an important part of Australia's future.

Gold

Lisam is a global provider of smart EHS compliance and practical sustainability solutions fully integrated with Chemicals Management. Lisam delivers EHS solutions for Incident Management, Audits & Inspections, Sustainability Sources Management and Chemical Inventory Management, as well as Product Stewardship solutions for Substance Volume Tracking and SDS Authoring, Distribution and Management. We know our stuff, keep our promises, and openly guide our business with core values of Respect, Integrity, Service Excellence, Value and Happiness.

Wood is a global leader in consulting and engineering, delivering critical solutions across energy and materials markets. We provide consulting, projects and operations solutions in 60 countries, employing around 35,000 people.

The Institute of Chemical Engineering (IChemE) is a global professional community with head offices in the UK and Australia. IChemE focuses on building and supporting a network of Chemical Engineers in the world. IChemE aspires to be a peer-group leader with its vision to be recognised as a significantly valued organisation with contributions in the chemical, processing and biochemical industries.

We work to provide the fuels and chemicals that make modern life possible and support human progress. For us, providing the energy our global economy requires while also offering lower- emission solutions shouldn't be an either/or choice; we like to think of it as an "and" equation, and that's an equation we're built to help solve.

The Sponsors.

KC8 Capture Technologies Ltd (formerly UNO Technology) is dedicated to reducing global greenhouse gas emissions through Carbon Capture Utilisation and Storage (CCUS). Recognizing the need for diverse emission reduction methods, KC8 focuses on advancing CCUS technology to lower costs and accelerate its adoption as a key tool in combating climate change, aligning with global efforts like those of the IPCC.

We provide energy that the world needs to heat and cool homes, keep lights on and support industry. Our focus in operations remains on safety, reliability, efficiency and environmental performance. Founded in Australia with a spirit of innovation and determination, Woodside has begun a new chapter as a global energy company. Building a better future, together.

As Australia's national body for engineering, we're the voice and champion of our 120,000-plus members. Providing them with the resources, connections and growth they need to do ethical, competent and high-value work in our communities.

Supporters

AusIMM is the peak body and trusted voice for professionals working in the resources sector. We advance careers, inspire leadership, uphold standards and connect communities.

AusIMM was founded in 1893 and operates under Royal Charter. We have a global community of more than 15,000 members from 100 countries and a wide-ranging network of Communities of Interest (COIs), along with influential partnerships with industry, government, education institutions and kindred bodies.

We are one of the world's largest globally diversified natural resource companies. Through the scale and diversity of our industrial and marketing businesses, we responsibly supply the commodities that are fundamental to the building blocks of life.

Contents.

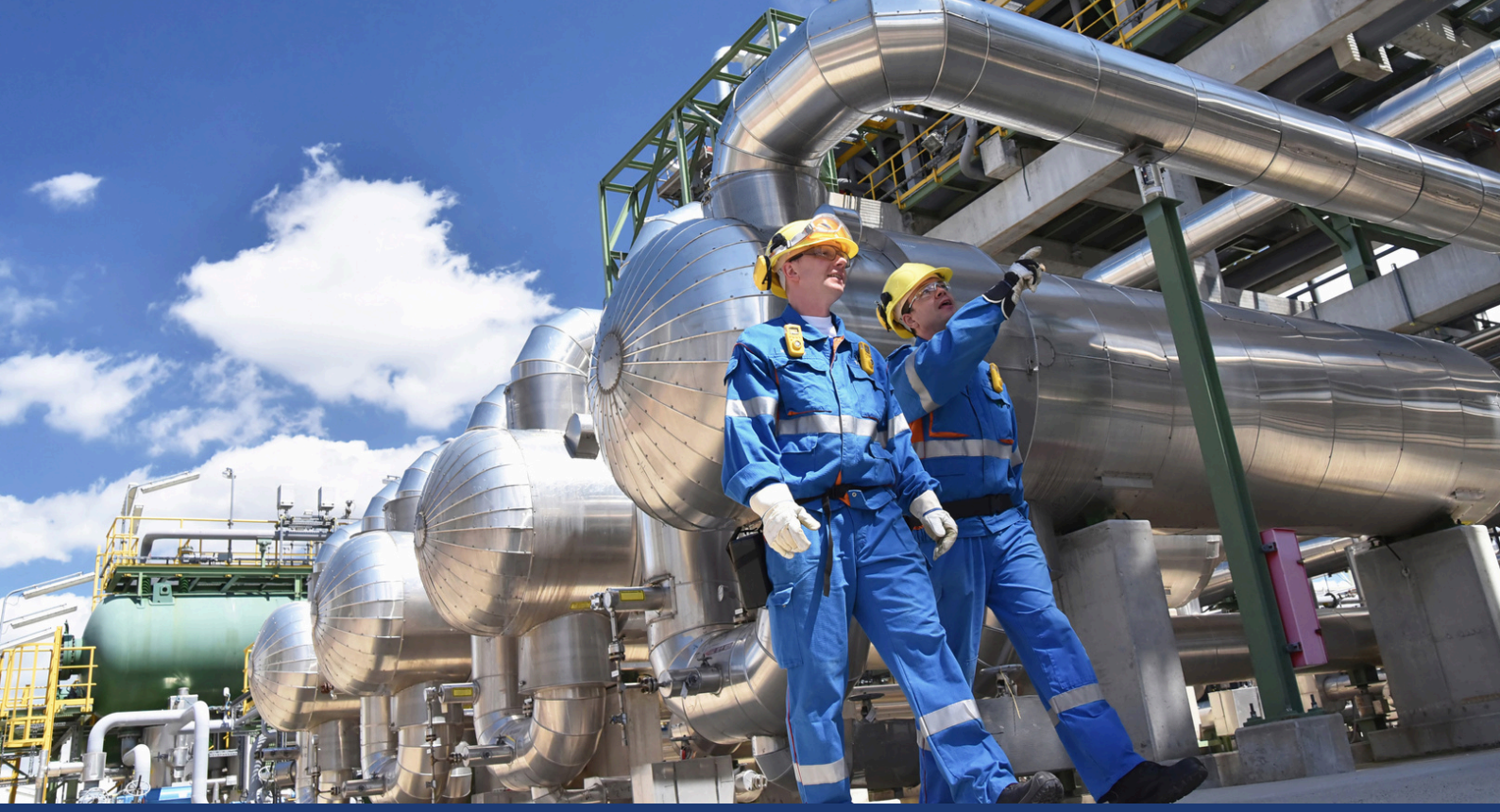
01 All About Chemical Engineering

01.1 WHAT IS CHEMICAL ENGINEERING?

Chemical engineering is a discipline influencing numerous areas of technology. In broad terms, chemical engineers conceive and design processes to produce, transform, and transport materials — beginning with experimentation in the laboratory followed by the implementation of the technology in full-scale production.

Chemical engineering is centered on the large-scale production and manufacturing of goods through chemical processes. It encompasses the design of equipment, systems, and procedures for refining raw materials, as well as for mixing, reacting, and processing chemicals. The fuel in our vehicles, the makeup on our faces, and the medicine we consume are all products of chemical engineering.

Chemical engineers translate lab-scale processes into safe, efficient industrial operations. Their work relies on core principles of chemistry, physics, and mathematics—alongside growing applications in biology.
Key skills include designing, testing, scaling up, and optimizing processes. To do this effectively, chemical engineers must understand key "unit operations" such as distillation, mixing, evaporation, crystallization, and biological conversions that drive production.



01.2 WHAT DO CHEMICAL ENGINEERS DO?

Chemical engineers apply the principles of chemistry, physics, and engineering to design and optimize processes for producing a wide range of products, from fuels and chemicals to food, pharmaceuticals, and advanced materials. They are involved in every stage of production, from the initial design of equipment and processes to ongoing improvements that enhance efficiency, safety, and sustainability.

In their roles, chemical engineers often use computer-aided design (CAD) software and advanced simulation tools to develop and refine manufacturing systems. Much of their work takes place in large-scale industrial settings, where they focus on improving product quality, minimizing costs, and ensuring safe operations for both workers and end-users.

Beyond manufacturing, chemical engineers frequently collaborate on research and development projects across sectors such as biotechnology, environmental science, and business services, contributing their expertise to drive innovation and solve complex real-world problems. [1]

Chemical engineers are involved in developing and improving manufacturing processes. Their typical responsibilities include:

- Conducting research to create more efficient production methods
- Designing equipment and plant layouts
- Establishing safety procedures for handling hazardous materials
- Testing and monitoring processes to ensure quality
- Troubleshooting production issues
- Ensuring compliance with safety and environmental regulations
- Estimating production costs for planning and management

01.3 Jobs in Chemical Engineering

Chemical engineers work as process engineers, focusing on the optimization of design, operation, and control of chemical processes, as well as the design and selection of equipment. They may specialize in various fields, including biotechnology, nanotechnology, mineral processing, ceramics, fluid dynamics, environmental science, thermodynamics, and material science. The following job salary figures are referenced from official job websites such as Seek, Indeed, and SalaryExpert, and are presented in Australian Dollars (AUD$).

01

PROCESS AND OPERATIONS ENGINEERING

National Average Salary : $120,000 per year

Chemical engineers take this role in industries such as oil and gas, chemicals, food and beverage, and mining. They are responsible for scaling up production, improving system efficiency and ensuring safety and reliability in day-to-day operations. They typically work as process engineers, production engineers, or plant engineers, handling simulations, process controls, and data analysis to optimize system performance.

02

RESEARCH AND DEVELOPMENT

National Average Salary : $109,519 per year

Chemical engineers that pursue research and development explore new technologies, formulations, and materials. They work in laboratory settings or pilot plants, often contributing to the development of advanced polymers and pharmaceutical formulations. Common roles include R&D engineers, formulation chemists, and pilot plant engineers, all contributing to long-term innovation in industries like pharmaceuticals, consumer goods, and energy.

03

PHARMACEUTICALS AND BIOTECHNOLOGY

National Average Salary : $127,857 per year

This sector involves large scale manufacturing of therapeutic drugs and vaccines. Chemical engineers work as bioprocess engineers, validation engineers or pharmaceutical production engineers, ensuring consistency, product quality and compliance with regulatory standards. They often collaborate with biologists, pharmacists and regulatory specialists.

04

MATERIALS AND PRODUCT ENGINEERING

National Average Salary : $130,000 per year

Engineers in this sector design and develop materials like polymers, ceramics, composites or coatings for industries ranging from aerospace to electronics. Roles such as materials engineers, polymer specialists, and product developmental engineers focus on tailoring material properties for strength, flexibility, or durability. Thermodynamics and material behavior are central to their work.

05

ENVIRONMENTAL AND WATER ENGINEERING

National Average Salary : $95,000 per year

This area deals with pollution reduction, waste treatment, and water purification. Engineers design and improve systems that reduce environmental impact, often working as water treatment engineers, environmental process engineers, or emissions control specialists. Their work supports sustainable development and compliance with environmental regulations.

06

DATA MODELLING AND SIMULATIONS

National Average Salary : $122,149 per year

As industry becomes more data-driven, chemical engineers increasingly use tools like Aspen Plus, MATLAB, and CFD software to model and optimize complex systems. They work in roles such as simulation engineers, CFD engineers, or data analysts focused on process performance, system design, or predictive maintenance.

07

CONSULTING AND PROJECT DELIVERY

National Average Salary : $120,000 per year

In consulting, chemical engineers advise clients on feasibility, risk, design, and compliance across a range of projects. They work as process consultants, project engineers, or risk analysts, often combining technical insight with communication and business acumen. These roles are common in large consulting firms or EPCM contractors.

02 Professional Development

DRAFTING YOUR RESUME

Your resume is your essential document that highlights all your experiences, achievements and qualifications to help set you apart. Alongside your education and work history, other skills can be appended, all of which will be assessed by an employer alongside a complementary cover letter. Due to how important a resume is in helping you advance your career, it is vital that you understand how to compose one that provides all relevant information in a concise and structured manner, to demonstrate why you would excel in that particular role.

Good, concise formatting is essential. Employers can sometimes face up to hundreds of applications for a single job, and need to scan over applications quickly. As a result, your resume needs to communicate information clearly and concisely, so that key details are not lost in visual clutter while also having a stand-out resume - your formatting can be the difference between appearing professional or standard.

Some possible formatting options include:

- **Colour choice:** Have a distinct colour scheme, however do not get too caught up in trying to be too colourful, as this may deter employers from examining your resume closer
- **Section sizing:** Have the most relevant parts be the largest, like your work experience and a professional summary, while delegating parts like your skills and certifications to a smaller part on your document.
- **Font:** Aim to minimise the number of fonts on your resume to reduce visual clutter. To draw attention to specific sections, utilise bold or italics - in this case less is more.

Content and phrasing are also extremely important to consider when drafting a resume. The manner in which you write can dramatically change an employer's perception of you, and writing in a formal and professional tone can help your chances at impressing an interviewer. Ensure that you know how to include keywords and phrases relevant to the position, as these can be more easily located by employers and benefit your chances. In essence, your resume should be brief as it is merely a list of your career experience, so avoid being too verbose in descriptions of previous jobs, education and skills, to enable the person reading your resume to get the clearest idea of you possible.

Some tips:

- Include your contact information in a visible place, like the top of your resume, to make it easier for employers to get back to you on application progress.
- Do not include unnecessary information like your date of birth or photos, as this can take away space from more pertinent information, and add to visual clutter.
- Write a professional summary that is around 100 words that acts as your elevator pitch, and can give a concise idea of who you are as a candidate.
- Avoid cliches like "Team player" or "A hard worker", as they are used by many other applicants, and can take away space from other areas. Try to emphasise more specific skills, like time management, or state times where you were able to demonstrate those skills.
- If you're unsure on how to begin, Monash has a **resume checker** and **module** that contains many recommendations when writing a resume, as well as some samples to review for some possible inspirations for templates.

DRAFTING YOUR COVER LETTER

While some people may consider a cover letter to be an optional submission, it is a document that can dramatically increase your chances of achieving an interview or even your desired position. A cover letter serves to underscore how you are the ideal candidate in more detail than you could provide on your resume. Within your writing, you should introduce yourself, what attracted you to the job, and how you feel you would be a better choice over other applicants. Skills that may have been attributed to a single dot point on your resume can be discussed in much more detail, provided you are able to link them to how they would contribute to the role specifically. Including keywords and phrases will be as helpful as it was in your resume, as employers will be able to pick up on their own criteria much more easily.

Some tips:

- Keep it concise (max one page), as you do not want to bloat your application with too many details - conciseness is key.
- Do some research on the company and find out their mission statement, what their goals are, etc. to more deeply resonate with the employer when writing about why you were interested in applying.
- Strike the right balance between enthusiasm and restraint - an overly eager tone can convey desperation, while writing too clinically can make you seem uninterested in the position.
- Get a peer to proofread your cover letter - other people can find ways to improve your appeal that you may not be able to on your own.
- If unsure on how to start writing a cover letter, ***Monash has a cover letter module*** that can help you draft your document, and to review some sample cover letters as inspiration.

HOW TO LINKEDIN

LinkedIn allows you to connect with other professionals and can help advance your career. Having a complete Linkedin profile is a great tool to share your experience, skills and education with fellow engineers.

To get started:

01
Photo

- Add a professional photo which has good lighting and high resolution. You should be the only person in the photo and it should display an appropriate attitude. This gives out the first impression to viewers.

02
Summary

- A concise summary is a great way to hook recruiters.
- Make sure to specify your industry and location.
- Use keywords and highlight your main skills but avoid overused words such as ‘strategic’, ‘responsible’ and ‘passionate’. A good strategy is to instead cover a story which represents how you displayed those traits. Showing life outside of work and discussing hobbies, and passions reinforces your professional strengths so don't be afraid to be authentic.
- Write how you would speak and check if it sounds appropriate by reading it out loud.
- The summary should act as a quick introduction which highlights your successes that are covered in the profile. This includes key experiences, education, skills, and your present role.
- Focus on the aesthetics. A long paragraph may be unappealing to recruiters. Instead, create white space, be coherent, and use bullet points or numbered lists if needed.

03

Experience

- This covers events where you have displayed essential skills and abilities needed.
- Make sure you're interesting and similar to the summary, cut out jargon words and be coherent and concise.
- Logos of the company or organisation add visual appeal.
- The description should be short and should cover the main three areas:
    - ***Context***

      Provides quick background information about the experience.
    - ***Actions***

      Covers what you did, the skills you used, and sometimes what you learnt.
    - ***Results***

      Describe what you achieved through the experience.

04

Education

- Add your school and university names.
- Logos of these institutes give visual credibility.

05

Connections

- Start off by connecting with your contacts
- It can be intimidating at first but confidence improves with practice.
- Attending networking events and using practice prompts to ask people for their Linkedin is a great way to increase connections. Make sure to introduce yourself, what you do and ask them questions as well to build a connection.

06

Other Resources

- During orientation events, Monash Engineering usually hosts workshops that cover how to use Linkedin and have a free professional photoshoot for a Linkedin profile.
- There is a Monash module specifically to teach how to use Linkedin that can be accessed through Career Connect Monash. The ***Monash Career Connect*** website itself is also a great tool.

02.2 Student Futures.

INDUSTRY INNOVATION PROGRAM (IIP)

Monash University's ***Industry Innovation Program*** offers students opportunities to immerse themself in real-world problem-solving within the chemical engineering discipline. Through collaboration with industry partners, students are encouraged to apply their academic knowledge to solve practical problems, delivering innovative solutions to real commercial needs.

Gain Industry Experience

One of the most appealing aspects of the Industry Innovation Program (IIP) is the opportunity to work alongside industry professionals on real, company-specific problems. This collaborative and structured environment offers a realistic workplace simulation, helping you build confidence and resilience. Students can join a 3, 6, or 12-month program while studying on campus, and international students can participate during the summer break.

Access to the Monash Smart Manufacturing Hub

As part of the IIP, you'll have access to the Monash Smart Manufacturing Hub (MSMH)—a dynamic environment that fosters innovation and collaboration. Here, you can work alongside fellow students and industry experts to explore new ideas and gain valuable insights. The hub is equipped with state-of-the-art machinery, giving you hands-on experience with advanced industrial tools and technologies.

Mentorship and Guidance

As part of the IIP, you'll be supported by a Monash academic supervisor and industry professionals. They'll guide you through the complexities of real-world challenges, offering valuable insights and practical advice. With their support, you'll enhance your learning experience and make meaningful contributions to the success of your project.

Professional Networking

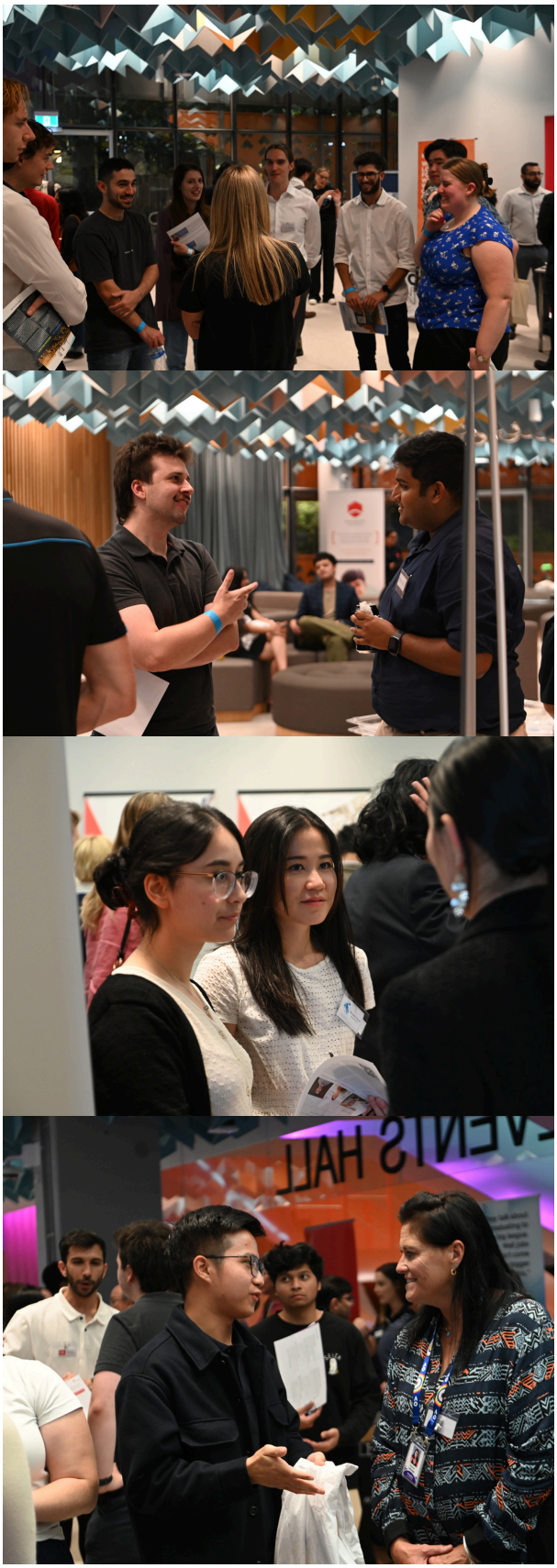
Collaborating with industry professionals gives you the opportunity to build a valuable network of contacts—opening doors to future internships, job opportunities, or partnerships. These connections, combined with your hands-on project experience, become powerful tools that help shape your career path after graduation.

Completing your CPD hours

If you are studying chemical engineering, the IIP is a great way to fill up those CPD hours. All of the time you spend working on your IIP project will be counted as CPD hours, and in most cases, completing the IIP will be enough to fulfil your required CPD hours.

EMPLOYABILITY SKILLS PROGRAM (ESP)

The ***Employability Skills Program (ESP)*** is designed to help students build essential career and professional skills, giving them a competitive edge during job applications. It specifically prepares students for the Industry Placement and the Co-op Professional Practice unit by equipping them with practical knowledge and tools sought after by employers. ESP is offered as an enrollable zero-credit unit, and upon successful completion, it will be recorded on your academic transcript as a Satisfactory Faculty Requirement (SFR).



Strengthening your application

Learn how to craft compelling CVs and cover letters tailored to engineering roles. Gain insider tips on how to stand out during the application process and understand what employers look for in successful candidates.

Gain useful work-ready skills

Develop practical, transferable skills, including professional communication, interview techniques, personal branding, and business etiquette—tools that will help you succeed not just in landing a role, but in thriving once you're there.

Expand your industry network

Engage with industry professionals during mock interviews and interactive sessions. Build connections, gain valuable insights into recruitment expectations, and grow your professional network to support your future career.

02.3 PROFESSIONAL PRACTICE UNITS

INDUSTRY EXPERIENCE (IE) - ENG4803

Monash's ***Industry Experience*** is a 6-credit-point unit that involves students completing a minimum of 144 hours in an unpaid industry placement. The engineering student will have the opportunity to immerse themselves in real-world engineering projects and workplace environments. Students will need to apply through the IE application process.

This unit was added in 2024 and is offered to students doing a Work Integrated Learning (WIL) placement. It also meets benchmarks set by professional bodies such as Engineers Australia and Engineering Accreditation Council Malaysia, helping you become well- rounded professional engineers.

The unit emphasises on the importance of professional experience in your engineering studies. It therefore allows you to meet learning outcomes of the unit by using the first hand experiences gained in industry during your placements.

Hands-on application of theories

Monash's Industry Experience allows students to apply theoretical knowledge learned during class time to professional projects. This programme will reinforce students' theoretical knowledge while sharpening their technical, critical thinking, and problem-solving skills, making them better prepared and more competitive when applying for jobs.

Development of professional skills

The Industry Experience programme also fosters the development of professional skills beyond the classroom setting. Working on real-world projects alongside industry professionals will improve essential soft skills such as teamwork, leadership, and initiative.

Furthermore, participants will gain valuable insights into workplace dynamics and the importance of effective communication, which are crucial for success in any career. This hands-on experience will boost students confidence in navigating professional environments.

Networking and career development

Working alongside industry professionals will allow students to improve their networking skills and acquire helpful information about their chosen fields. Establishing connections during their studies can lead to mentorship opportunities and potential job placements after graduation. These relationships can also provide students with a competitive edge in the job market, as personal recommendations often carry significant weight. Additionally, engaging with professionals can inspire students to pursue specific career paths and refine their goals.

CO-OPERATIVE EDUCATION PROGRAM (CO-OP)- ENG4804

Monash University's ***Co-operative Education Programme (Co-op)*** offers engineering students a valuable opportunity to gain practical, paid work experience alongside their academic studies. The programme is highly flexible, with full-time or part-time internships that can range from three to twelve months, allowing students to tailor their experience to their study schedules.

Added in 2024, this unit is offered to students undertaking a co-operative education internship. It meets benchmarks set by professional bodies such as Engineers Australia and Engineering Accreditation Council Malaysia, helping you become well- rounded professional engineers.

The unit involves meeting learning outcomes by using direct experience gained during internships allowing students to combine their engineering learnings and professional experiences.

Real-world experiences

A key benefit of the co-op programme is the exposure it provides to real-world engineering environments. Students can apply the theoretical knowledge gained in their coursework directly to industry projects, bridging the gap between classroom learning and professional practice. This hands-on experience not only sharpens technical skills but also fosters critical thinking and problem-solving abilities, ensuring students are well-prepared for the demands of the engineering workforce.

Career Exploration

The co-op programme allows students to experience different areas of engineering practice, helping them discover where their interests and strengths lie. By working on various projects and connecting with industry professionals, students gain valuable insights that guide their long-term career decisions.

Workforce readiness

This programme is designed to equip students with the skills and confidence needed to succeed in the workplace. Through real-world experience, they build practical expertise and expand their professional networks. Completed internships are officially recorded on their academic transcripts, demonstrating a strong commitment to career development.

Flexible internship options

Students can undertake internships during the summer or an academic semester, pausing tuition fees while gaining hands-on experience. These paid placements not only support professional growth but also provide financial benefits, allowing students to focus fully on their work without the burden of tuition costs during this period.

Opportunities for International Students

While international students are limited to summer internships, they still gain meaningful industry exposure. Additionally, the hours completed can count towards Continuous Professional Development (CPD) requirements, further enhancing their professional profiles and readiness for future opportunities.

Monash University's Co-op Education Programme is a valuable opportunity for engineering students to bridge the gap between academic study and industry practice. Through these internships, students develop essential skills, gain clarity about their career paths, and build meaningful professional networks. By joining the Co-op programme, you'll gain practical experience, explore diverse career options, and set a strong foundation for a successful engineering career.

ENG4801 PROFESSIONAL PRACTICE (CURRICULUM EMBEDDED)

This unit was added in 2024 and it prepares you to apply your academic knowledge in engineering workplaces. It meets the benchmarks set by professional bodies such as Engineers Australia and Engineering Accreditation Council Malaysia, and therefore helps you become well- rounded professional engineers.

The unit emphasises on the importance of the always changing nature of engineering workplaces. There is a huge focus on transferable skills such as problem solving, ethical decision making, communication and teamwork. It brings in real world issues and plans such as the United Nations Sustainable Development Goals which allow engineers to understand the importance of practicing these skills.

ENG4802 PROFESSIONAL PRACTICE (STUDENT TEAMS)

This unit was added in 2024 and is only offered to students who are currently members of an Engineering or IT student team. This unit allows students to apply their team based practice towards meeting their academic outcomes. Similar to ENG4801, this unit meets benchmarks set by professional bodies such as Engineers Australia and Engineering Accreditation Council Malaysia, helping you become well- rounded professional engineers.

The unit emphasises on the importance of bridging the gap between engineering studies and real world challenges faced in industry. Using your student team's experience is a great way to achieve this while simultaneously meeting the learning outcomes of the unit.

FINAL YEAR PROJECT (ENG4701 AND ENG4702)

The final year project (FYP) is a 12-credit project that lasts 1 year and is separated into 2 6-credit units, ENG4701 and ENG4702. During the FYP, the students will have the opportunity to gain real-world experience, allowing them to gain a competitive edge when looking for jobs. Students can choose their project from various industry-focused options. There are currently four different types of final year projects that Monash offers.

This final year's project option focuses on the research and consultation aspects. Students can either choose an existing project proposed by leading faculty researchers and be part of a team or propose their own project to the researcher. Through this experience, students will have the chance to apply theories to tackle real-world challenges.

Students interested in this option can review existing projects via:
https://fyp.eng.monash.edu/student-portal.

Final Year Project from the ENG4804 unit

Students will have the opportunity to leverage their knowledge from their internship during ENG4804 and integrate it into their final year's project. Students must obtain faculty approval to incorporate the ENG4804 project into their FYP credit. It is recommended that students register their references on the Monash FYP portal in case this project is not accepted. The form to request approval can be found on Monash's final-year project site.

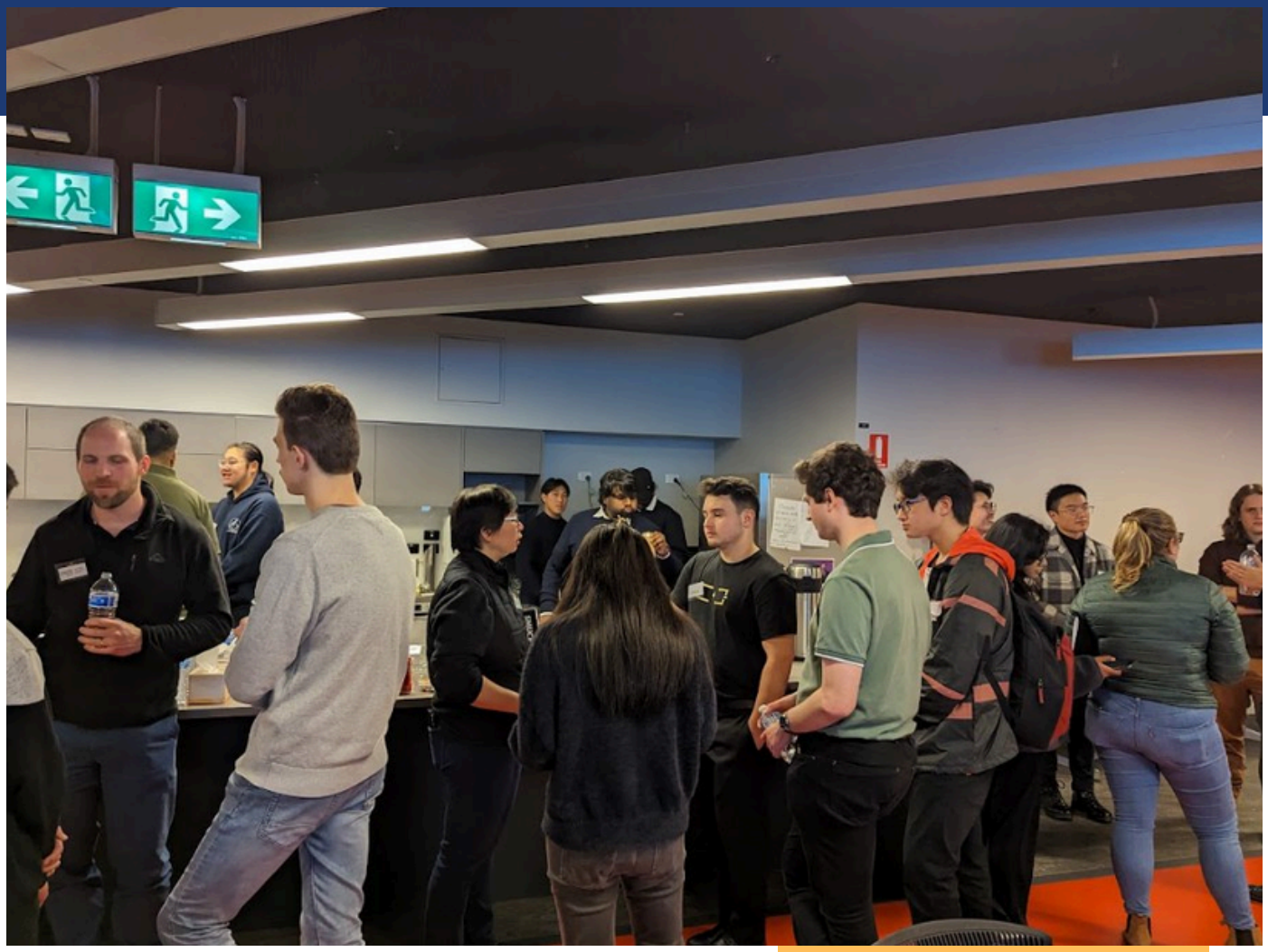
Final Year Project from IIP

Students have the opportunity to integrate the Industry Innovation Programme (IIP) into their final year project. During this programme, students will receive support through a scholarship. To begin, students must apply for any advertised IIP on UniHub. If selected for an IIP, they will then need to register their project as their Final Year Project (FYP) using a form available on Monash's final-year project site.

Final Year Project from self-sourced industry project

Students can also incorporate their self-sourced industry project as their FYP. The students must be paid during employment for the self-sourced industry project to be approved as FYP. Students are suggested to fill out the approval 8 weeks in advance, as project and industry contract need to be approved by Monash. The aforementioned form can be found on Monash's final-year project site.

03 Post-graduation Opportunities in INDUSTRIES



03.1 Pharmaceuticals

Involves application of chemical processes to develop and manufacture pharmaceuticals that are safe and efficient. Pharmaceutical properties of chemicals are improved and developed so they can be adapted to a large production scale while meeting regulatory standards and compliances. Job roles can involve purifying active pharmaceutical ingredients, creating new delivery systems or improving existing manufacturing techniques which improve quality and reduce costs.

CSL (CSL) is a biotechnology company involved in developing high quality medicines and vaccines to protect public health and save patient lives. This includes medicines to treat hemophilia and vaccinations to prevent illnesses such as influenza. CSL Behring, CSL Seqirus and CSL Vifor are CSL's three businesses which provide products in more than 100 countries and employ over 3200 people.

Postgraduate programs or internships available: Yes (The CSL graduate program and The CSL Internship program)

GSK (GSK AU) is a biopharma company which aims to not just treat but prevent diseases by using science, technology and talent. Main research and development focuses on Oncology, HIV, Infectious diseases and Respiratory, immunology and inflammation related illnesses. GSK has had strategic partnerships with collaborators such as University of Oxford and Kings College London to meet their goals.

Postgraduate programs or internships available: Yes (GSK internship program and development programs for PhD and post doctoral students)

Novo Nordisk (Novo Nordisk) aims to develop and deliver accessible medicines for people with chronic diseases including diabetes, obesity and endocrine diseases. With a major focus on accessibility, chemical engineering skills are needed to improve manufacturing processes which ensure production meets demand rate and breakthrough treatments can be scaled up fast.

Postgraduate programs or internships available: Yes (Global graduate program for Master's students and Internship programs Bachelor or Master's programmes)

Pfizer (Pfizer) is a leading biopharmaceutical company with core values and behaviours of courage, excellence, equity and joy. Pfizer has been involved in development of medicines and vaccines which prevent and treat diseases and improve health and wellbeing of people around the world through collaborations with healthcare providers, patient communities and academia. A chemical engineer's career at Pfizer can be in Research and development or manufacturing.

Postgraduate programs or internships available: Yes (Engineering Graduate programs and more but limited opportunities for students who haven't graduated yet)

03.2 Mining

The mining industry is responsible for extracting valuable minerals and metals from the earth, which are essential for various sectors such as construction, manufacturing, and technology. Chemical engineers in the mining industry develop and optimise processes for mineral extraction and refining. They design and implement methods to efficiently separate valuable minerals from ores, improve the efficiency and safety of chemical processing operations, and manage waste products to minimize environmental impact. Their expertise in chemical reactions, process design, and materials science is essential for enhancing the efficiency, sustainability, and profitability of mining operations.

BHP is a leading producer of iron ore, copper and metallurgical coal and operates in Western Australia, South Australia, Queensland and New South Wales in Australia. BHP runs global projects in countries such as Canada, Chile, Peru, United States and Brazil with the aim of making resources accessible to people and building a better world. This includes energy transition and using copper for renewable energy, nickel for electric vehicles and potash to support sustainable farming.

Postgraduate programs or internships available: Yes (BHP Australian Graduate and Intern Programs in Engineering, Science, Technology, Health sciences and Business)

Glencore (Glencore Australia) produces and exports essential commodities such as coal, cobalt, copper, nickel, zinc, and lead. The company prioritises sustainability through focus on safety, health, environment and community development. Glencore currently has around 150,000 employees and is a major company in the Australian mining industry.

Postgraduate programs or internships available: Yes (Glencore Graduate, Apprentice and Vacation programs are available)

MMG (MMG) is a global producer of base metals including copper and zinc and operates across multiple countries including Botswana, and the Democratic Republic of Congo and Peru. The company is committed to maintaining international standards, and respecting people, land and culture on which they operate. Its current focus is towards a low carbon future and creating wealth for its stakeholders.

Postgraduate programs or internships available: Yes (MMG Graduate Early Career Program, Training and Mentorship program and Vacation Employment Programs are available.)

PLS (PLS) is a global producer of lithium materials with batteries being a major part of its market. PLS owns and operates the world's largest, independent hard rock lithium operation in Australia and the Colina Project in Brazil. The company is working towards meeting the increasing demand for clean energy technologies including electric vehicles and energy storage.

Postgraduate programs or internships available: Yes (PLS Graduate program but limited options for those who haven't graduated yet.)

Wave international (Wave International) keeps a 'Commercial Engineering' approach to solve the world's natural resource related challenges. They have multiple industry focuses including greenfield, operational resource sites, energy and infrastructure with 25 years of experience. Some current projects include 'San Jose Lithium Project', 'Yangibana Rare Earths Project' and the 'St Elmo Mine'.

Postgraduate programs or internships available: Yes (Graduate and Undergraduate programs available.)

03.3 Food and Beverage

The food and beverage industry includes the production, processing, packaging, and distribution of food and drink products.It is a diverse and dynamic sector driven by consumer demand, regulatory standards, and technological advancements which ranges from raw ingredients to ready-to-eat meals and beverages. Chemical engineers develop and optimize processes for safe and efficient production of food and beverages. This involves designing equipment and systems for mixing, heating, cooling, fermenting, and packaging products. Their expertise ensures that production processes are efficient, cost-effective, and environmentally friendly while maintaining product quality and safety.

Asahi Beverages (Asahi Beverages) is one of the leading beverage companies in Australia and New Zealand. The company markets alcohol and non alcohol drinks and is a part of the Asahi Group Holdings which is one of Japan's leading beverage companies. It currently employs around 4200 people across ANZ and has over 50 local manufacturing and distribution centres.

Postgraduate programs or internships available: Yes (Asahi grad program)

Bega Group (Bega Group) includes household brands such as Vegemite, Yoplait, Farmers Union, Zooper Dooper and Pura. The company's vision involves focusing on great food, great people, great aspirations and working for the greater good. As an engineer, Bega Group's commitment to sustainability and the principle of circularity will be a priority.

Postgraduate programs or internships available: Yes (The Rise Bega Graduate Program)

Fonterra (Fonterra) is one of the largest dairy manufacturers in the world and New Zealand's largest exporter of dairy products. Fonterra has up to 20,000 employees around the world and is committed to incorporating sustainable processes into all services they provide. Industries for engineers can include the Energy centre, process and packaging and science and research development.

Postgraduate programs or internships available: Yes (Programs available for final year undergraduate students or those within 2 years of graduating)

Bulla (Bulla Dairy Foods) is one of Australia's oldest family dairy companies. The descendants of the company's founders still play an active role in carrying on their legacy. With current focus on international expansion, the company prioritises constantly obtaining, engaging and acting on consumer insights to create product ranges that cater specifically to international consumers.

Postgraduate programs or internships available: limited information.

Nestle (Nestlé Australia) aims to provide good food in a sustainable manner to customers and the company currently has around 270,000 employees, more than 2000 brands in 188 countries to help ensure this. Careers in engineering will include not just food production but having a huge focus on environmental responsibility, delivering solutions in areas of plastic recycling, renewable energies, zero carbon emissions and water reuse.

Postgraduate programs or internships available: Yes (The NextGen Nestle Graduate program and more)

03.4 Oil and Gas

The oil and gas industry involves the exploration, extraction, refining, transportation, and marketing of petroleum and natural gas products. This industry is important for providing energy and raw materials for various sectors, including transportation, manufacturing, and chemicals. Chemical engineers in the oil and gas industry are integral to optimising the extraction and processing of hydrocarbons. They design and manage processes for refining crude oil into valuable products like gasoline, diesel, and petrochemicals. Additionally, they develop methods for enhancing the efficiency and safety of drilling operations, as well as for minimising environmental impact through improved waste management and emission controls. Chemical engineers also work on developing and implementing new technologies for enhanced oil recovery and alternative energy sources, ensuring the industry's sustainability and adaptability to changing energy needs.

BP (BP Australia) in Australia plays a key role in meeting the region's growing energy needs while reducing emissions. As part of the global BP group, it shares international expertise and innovation with local partners and communities. With about 5,200 employees and contractors, BP operates nationwide, with main offices in Perth and Melbourne.

Postgraduate programs or internships available: Yes (Engineering Graduate programme)

Chevron traces its roots back to the founding of Pacific Coast Oil Co. in 1879. Throughout its history, it has evolved in name but remained committed to its core values of innovation, perseverance, and progress. Today, the company focuses on delivering energy that supports modern life while developing solutions for a lower carbon future. Through advanced technology and global collaboration, it aims to drive meaningful change and support the well-being of local communities worldwide.

Postgraduate programs or internships available: (Internships available but limited in Engineering field.)

ExxonMobil (ExxonMobil) operates in over 60 countries, providing the fuels and chemicals essential to modern life while also developing lower-emission solutions. With over 140 years of experience, the company embraces a dual approach to meet global energy needs and support a lower-carbon future. Its diverse team of 62,000 employees from more than 160 nationalities is dedicated to safely advancing the energy transition and addressing society's evolving demands.

Postgraduate programs or internships available: Yes (some internships available)

Wood (Wood PLC) is a global consulting and engineering leader in the energy and materials sectors, known for delivering sustainable solutions to critical challenges. With expertise across consulting, projects, and operations, Wood has contributed technology to 10% of the world's existing hydrogen plants. The company is driven by a commitment to create a more sustainable future for clients, communities, and generations to come. Its strength lies in its remarkable people, whose skills, innovation, and dedication set the company apart.

Postgraduate programs or internships available: Yes (placements for students and programs for graduate students available.)

Shell Australia (Shell Australia) is part of a global energy and petrochemical group operating in over 70 countries. It plays a key role in Australia's energy supply, particularly through its significant LNG portfolio, which includes Shell QGC, Prelude FLNG, and joint ventures in Gorgon, North West Shelf, and Arrow Energy. Beyond gas, Shell is expanding into low- and zero-carbon energy through ventures like Shell Energy, Select Carbon, the Gangarri solar project, Powershop Australia, and investments in wind and battery storage projects. The company focuses on using advanced technologies to support a sustainable energy future.

Postgraduate programs or internships available: Yes (Shell Graduate program and accessed internships)

Woodside (Woodside Energy) provides reliable and affordable energy to customers including the established business of supplying liquified natural gas (LNG). Energy transition is Woodside's current priority to ensure the world gets affordable, reliable and low carbon emitting energy. With 35 years of experience, the company prioritises safety, reliability, efficiency and environmental performance.

Postgraduate programs or internships available: Yes (Summer vacation programs and Graduate program)

Viva Energy (Viva Energy Australia) supplies around a quarter of Australia's fuel, supporting everyday travel, industry, and economic activity. With over 120 years of experience, the company refines, imports, and delivers energy for commuters, families, and businesses across sectors like transport, mining, aviation, and construction. Viva Energy also invests in infrastructure and maintains a national network of about 1,350 Shell and Liberty service stations, ensuring reliable access to its products and services while working toward a safe and sustainable energy future.

Postgraduate programs or internships available: Yes (Viva Energy Graduate program)

03.5 Consulting

The consulting industry offers expert advice to help businesses solve problems, improve performance, and reach strategic goals. Chemical engineers in this field use their technical skills to optimize processes, ensure compliance, support sustainable practices, and drive innovation. They contribute across various industries—such as pharmaceuticals and petrochemicals—by improving manufacturing, conducting feasibility studies, and enhancing environmental performance.

Aurecon (Aurecon) is a design, engineering and advisory company with the purpose of bringing ideas to life with clients so they can have a better future. The company brings together design, engineering and advisory capabilities to provide clients with integrated solutions across the entire asset lifecycle. Aurecon designers, engineers, scientists and advisors work with clients across markets, to tackle some of the world's most complex challenges.

Postgraduate programs or internships available: Yes (The 12 week Aurecon's internship program and more)

Boston Consulting Group (BCG in Australia | Business Consulting Firm) is a global consulting firm that partners with leaders in business and society to tackle their most important challenges and capture their greatest opportunities. The company uses a transformational approach which aims to benefit all stakeholders by empowering them to grow, build sustainable competitive advantage, and drive positive societal impact.The company's main focuses includes delivering integrated solutions through leading-edge management consulting, technology and design, and corporate and digital ventures.

Postgraduate programs or internships available: Yes (internships available)

Deloitte Touche Tohmatsu LLC (Deloitte Australia) is one of the Members of Deloitte Asia Pacific Limited and a member firm of the Deloitte network. It is Japan's leading audit firm and principal firm of the Deloitte Tohmatsu Group, DTT provides audit & assurance and risk advisory services. The company's major clients include multinational enterprises and major Japanese business entities and currently has around 12,000 employees in Australia.

Postgraduate programs or internships available: Yes (Graduate and Summer internship programs available)

EY (EY) is a service firm which helps clients capitalise on new opportunities and manage risks, ensuring responsible growth by following its four integrated service lines. These include Assurance, Consulting, Strategy and Transactions, and Tax. Multidisciplinary teams work together to meet regulatory requirements, keep investors informed and meet client needs to build a better working world for stakeholders involved.

Postgraduate programs or internships available: Yes (Student and entry level programs available, including vacation programs)

MM (Mott MacDonald) is a global engineering, management and development consultancy. At MM, experts solve complex problems such as societal issues or business strategies by focusing on fresh angles and finding opportunities in complexity. The combination of diverse skill sets, experience and insights are used to find sustainable solutions to problems and meet the companies aims of adding value to stages of their clients life everyday. Project management industries can include transport, energy, water, buildings and infrastructure.

Postgraduate programs or internships available: Yes (internship and graduate programs available)

03.6 Water

The water industry involves managing and treating water resources, including drinking water supply, wastewater treatment, desalination, and recycling. Chemical engineers play a key role by designing and optimizing treatment systems, developing technologies to remove contaminants, and improving water quality. They also enhance desalination methods, promote sustainability, and ensure regulatory compliance to support community health and safety.

Aerofloat (Aerofloat) is a family-owned Australian company that designs, manufactures, and installs custom wastewater treatment systems. Using patented technology and advanced products, it provides tailored solutions across various markets. Aerofloat stands out by offering superior service and innovative designs beyond standard industry practices.

Postgraduate programs or internships available: Yes paid internships programs available

Great Western Water (Greater Western Water) is a trusted water service, which focuses on supplying drinking water, treating wastewater and providing alternative water to communities and industries. The company priorities affordable, reliable and high quality water services that meet community needs while still respecting the water cycle and maintaining sustainability.

Postgraduate programs or internships available: Yes, graduate program available

Melbourne Water (Melbourne Water) manages all key aspects of the water cycle, including drinking water, sewage treatment, flood management, and river health. The organization is dedicated to improving life and livability in the greater Melbourne region by supporting both the natural environment and local communities.

Postgraduate programs or internships available: Yes, The Melbourne Water Graduate Program

South East Water (South East Water) focuses on providing efficient and reliable sewerage and trade waste services. A huge role of the company is finding better ways of using water to decrease wastage and ensure future supply isn't compromised. The company manages and maintains water and sewage networks involved in delivering clean water and taking waste water away.

Postgraduate programs or internships available: Yes, The Constructionarium program

Yarra Valley Water (Yarra Valley Water) is Melbourne's largest water corporation, serving 2 million people and 61,000 businesses across a 4,000 km^2 area. It manages over $6 billion in assets and a vast network of water and sewer mains. The company distributes bulk water from Melbourne Water, treats sewage at regional plants and through Melbourne Water, and recycles water for various community uses.

Postgraduate programs or internships available: Yes, Yarra Valley Water Graduate program

03.7 Recycling and Waste Management

The recycling and waste management industry focuses on environmentally responsible waste collection, processing, and disposal to promote sustainability. Chemical engineers play a key role by designing and optimizing processes to convert waste into reusable materials and energy, treating hazardous waste, and ensuring regulatory compliance. They also work to improve technologies for greater efficiency, cost-effectiveness, and reduced environmental impact.

BINGO (BINGO Industries) is a leading Australian recycling and waste management company operating across the east coast, focusing on building, demolition, and commercial sectors. Committed to a waste-free Australia, BINGO innovates to boost recycling rates and divert waste from landfill while prioritizing sustainable, zero-harm practices. Its advanced facilities in NSW, Victoria, and Queensland achieve high recovery rates, producing recycled materials for construction and infrastructure and supporting Australia's transition to a circular economy.

Postgraduate programs or internships available: limited options found for Engineering

Cleanaway Waste Management (Cleanaway) is Australia's leading waste management provider with over 50 years of experience. The company offers comprehensive services to collect, process, recycle, and safely dispose of all types of waste, viewing waste as a resource for new uses. Cleanaway focuses on innovative, sustainable solutions and collaborates widely across industries. Notably, it partnered with TOMRA to operate NSW's Return and Earn container return scheme.

Postgraduate programs or internships available: Yes (Cleanaway Graduate program in NSW)

Visy (Visy) is a packaging company driven by achieving their long term sustainability goals through recycling. Product quality and performance improvement is another priority of the company and global insights, resources and technology are used to ensure these plans can be successful.

Postgraduate programs or internships available: Unavailable at this time

03.8 Manufacturing

The manufacturing industry is vital to the global economy, producing goods across sectors like automotive, aerospace, electronics, and pharmaceuticals. It emphasizes efficiency, innovation, and quality. Chemical engineers contribute by designing and optimizing production processes, ensuring safety and environmental compliance, scaling up operations, and implementing sustainable practices to enhance efficiency and drive innovation.

Axalta (Axalta Coating Systems) is a manufacturing company with over 12,800 employees worldwide and sells products in over 140 countries. It aims to protect, improve and advance products which can help improve the lives of people and some products manufactured include liquid and powder coatings for vehicle developments and thermoplastics.

Postgraduate programs or internships available: Unavailable at this time

BlueScope (BlueScope.com) is a global leader in steel production and metal coating products, supplying essential materials for buildings, structures, and vehicles. With a diverse business portfolio and operations across North America, Australia, New Zealand, the Pacific Islands, and Asia, BlueScope is committed to making a positive impact through its expertise and passion for steel.

Postgraduate programs or internships available: Yes

Dulux (Dulux) is Australia's leading paint brand and has been recognised for its premium quality, innovation, and reliability in surface coatings since 1918. Trusted by professionals and consumers alike, Dulux has consistently been voted Australia's most trusted paint brand, with a strong reputation built on decades of product development and performance. It is committed to durability, application efficiency, and maintaining industry standards.

Postgraduate programs or internships available: Unavailable at this time

Opal (Opal.) is a leading Australasian paper and packaging company, backed by the Nippon Paper Group, providing innovative fibre-based solutions with a strong focus on sustainability and operational excellence. With extensive operations across Australia and New Zealand and export offices in Europe, North America, and Asia, Opal ensures reliable supply and tailored packaging outcomes for a wide range of industries.

Postgraduate programs or internships available: Unavailable at this time

03.8 Carbon Capture and Storage

The CCUS industry captures and stores or utilizes CO2 emissions to reduce greenhouse gases and combat climate change. Chemical engineers are essential in designing and optimizing CO2 capture, transportation, storage, and utilization processes. They also focus on improving efficiency and cost-effectiveness to integrate CCUS into existing industries.

KC8 Capture Technologies Ltd (KC8 Capture Technologies) is dedicated to reducing global greenhouse gas emissions through Carbon Capture Utilisation and Storage (CCUS). Recognizing the need for diverse emission reduction methods, KC8 focuses on advancing CCUS technology to lower costs and accelerate its adoption as a key tool in combating climate change, aligning with global efforts like those of the IPCC.

Postgraduate programs or internships available: Unavailable at this time

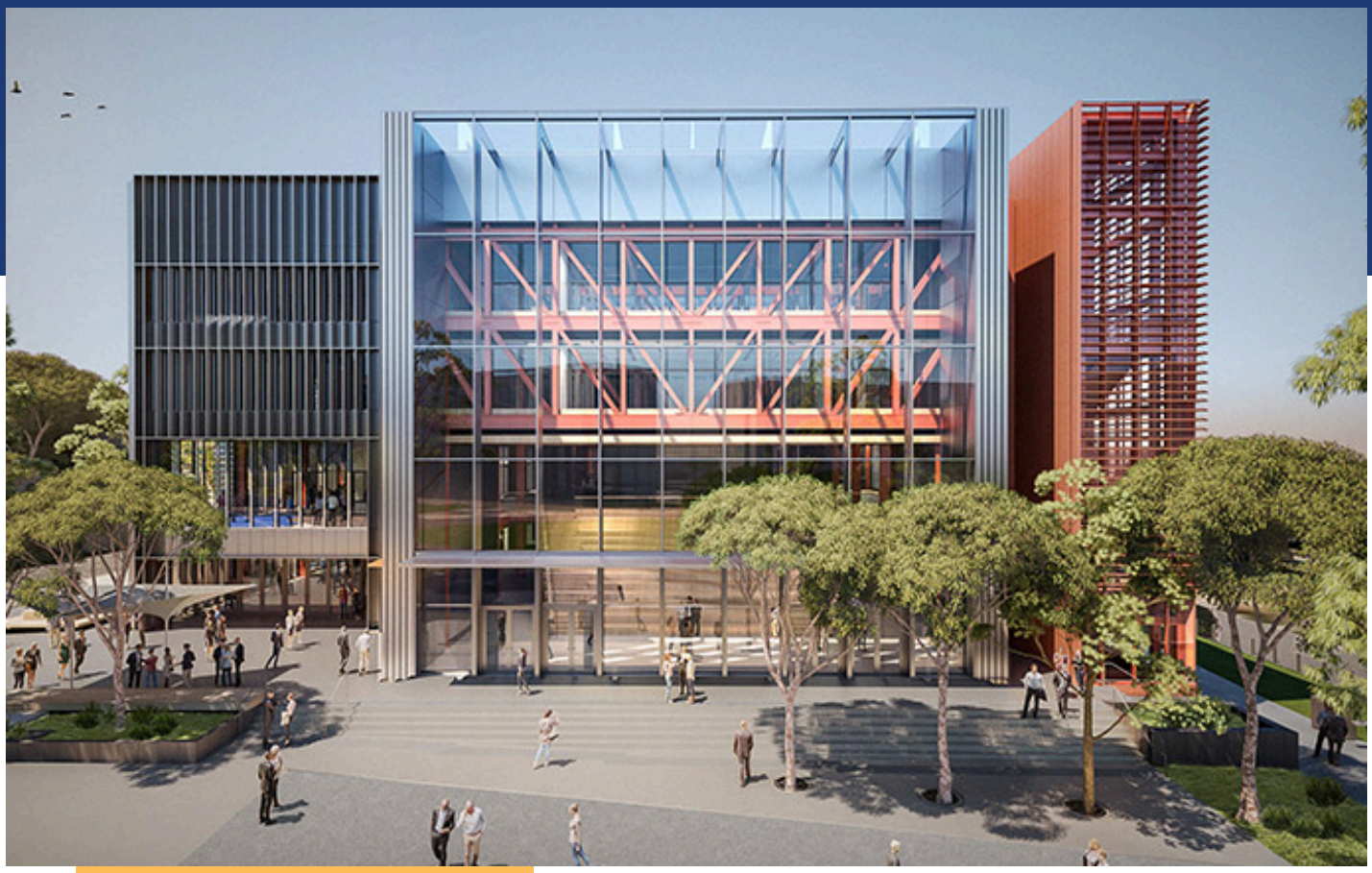
Addressing climate change is one of the most urgent challenges of our lifetime. 1PointFive (1PointFive) is focused on developing Direct Air Capture and CO_2 sequestration hubs, aiming to provide scalable solutions that support global efforts to limit temperature rise to 1.5°C. With projects concentrated along the U.S. Gulf Coast, the company is commercializing carbon removal technologies to help organizations reduce their environmental impact.

Postgraduate programs or internships available: Unavailable at this time

Southern green gas (Southern Green Gas) extracts carbon from the air and transforms it into renewable gases and fuels. The company is developing world-first Direct Air Capture technologies to generate negative emissions by extracting CO_2 from the atmosphere and storing it permanently through deep geological sequestration. In addition to carbon removal, the company is advancing carbon-neutral fuels like methane, methanol, and sustainable aviation fuel.

Postgraduate programs or internships available: Unavailable at this time

04 Post-graduation Opportunities at *Monash University*



Masters of Professional Engineering

Course Overview

The Master of Professional Engineering is designed for students with a background in engineering or related STEM disciplines such as science, mathematics or pharmacy. Depending on your previous studies, the program duration is 2 or 3 years, and includes a mix of advanced technical units, professional development units, a design project, and a final-year research project.

Core units aim to explore contemporary global challenges experienced in modern organisations and equip you with the skills to assess scenarios and give informed business decisions. In your final year, you'll undertake a multidisciplinary design project that applies your technical knowledge in a practical context. You will also complete a capstone research project, giving you the opportunity to consolidate and apply what you've learned throughout the program.

Entry Requirements

Entry Level 1:

- 3 years full-time, 6 years part-time (144 points to complete)

Entry Level 2:

- 2 years full-time, 4 years part-time (96 points to complete)

Duration

2 or 3 years full-time depending on prior qualifications

Specialisations

- Chemical and Biological Engineering
- Civil Engineering
- Electrical Engineering
- Materials Engineering
- Mechanical Engineering

Course Structure

The course is structured in 5 parts (Parts A,B,C,D and E). Depending on prior studies, credits may be given for Part A (Engineering foundation studies).

- **Part A:** Engineering foundation knowledge and application
- **Part B:** Engineering specialist knowledge and application
- **Part C:** Enhancement learning
- **Part D:** Research and knowledge skills
- **Part E:** Professional practice

Requirements

As part of the Master of Professional Engineering, all students must complete the equivalent of 12 weeks of Continuous Professional Development (CPD). This requirement is designed to enhance your professional skills, broaden your industry experience, and expand your professional network.

These activities may include industry placements and internships, volunteering, career development events, and field trips. Reflections on these activities are required through the online CPD portal, focusing on demonstrating progress in each of the Engineers Australia Stage 1 competencies.

Students also have the opportunity to complete a Work Integrated Learning (WIL) placement with one of Monash's industry or research partners. These internships contribute towards your degree requirements and offer real-world experience in a professional environment.

A WIL placement enables you to:

- Apply your engineering knowledge to address complex, real-world challenges;
- Strengthen your critical thinking and professional judgement;
- Demonstrate technical competence throughout project work;
- Plan and deliver a project with independence and accountability; and
- Communicate effectively to diverse audiences and stakeholders.

During your placement, you receive support from your host organisation and an appointed academic supervisor from Monash.

Masters of Engineering

Entry Requirements

- Four-year Bachelor of Engineering (or equivalent) with at least high credit (65%) average (Australian equivalent)
- English language requirement: Level A (visit **website** for more info)

Duration

1 year full-time

Specialisations

- Biological Engineering
- Civil Engineering
- Electrical Engineering
- Energy Transitions Engineering
- Materials Engineering
- Mechanical Engineering
- Power Systems Engineering
- Renewable Energy Engineering
- Smart Manufacturing Engineering

Each specialisation allows for in-depth study and the development of advanced skills for the chosen field.

Industry Experience

The program offers opportunities for industry engagement through units such as ENG5008 Industry Experience, providing exposure to professional activities. Enrolment in this unit provides a placement with a partner company.

Course Overview

The Master of Engineering Program is an expert-level, 1-year full-time program designed fro students who have already completed a four-year accredited engineering degree in a related specialisation. It is also available to students entering via the Engineering Accelerated Master's Pathway (vertical double degree). This course aims to deepen your technical expertise in your chosen specialisation while enhancing leadership and complex problem-solving skills.

Course Structure

The program comprises 48 credit points, or one year of full-time study. There are three components of the course:

- Part A: Common core units: These units focus on professional engineering practice and research methodologies.
- Part B: Specialist core units: These units deepen technical knowledge in the chosen specialisation.
- Part C: Enhancement units: These units broaden skills through industry experience, entrepreneurship, or interdisciplinary studies.

Masters of Advanced Engineering

Course Overview

The Master of Advanced Engineering is a 2-year full-time course designed for graduates with a four-year accredited Bachelor of Engineering in a relevant discipline. This program aims to prepare engineers to operate at the highest levels in industry or research, enabling them to tackle sophisticated engineering challenges across varied domains.

Course Structure

The course comprises 96 credit points, or two years full-time study, and is organised into four parts:

- **Part A:** Common core units- Foundational units that establish advanced analytical and technical skills.
- **Part B:** Specialist core units- Discipline specific core units to advance technical knowledge.
- **Part C:** Advanced practice- This section offers the following two options:
    - **Industry experience stream:** a practical placement through Monash's Industry Experience (IE) program; or
    - **Research Stream:** complete a Master's thesis, working on a research project aligned with your specialisation.
- **Part D:** Enhancement units: broadening electives from allied fields.

Entry Requirements

- Four-year Bachelor of Engineering (or equivalent) with at least high credit (65%) average (Australian equivalent)
- English language requirement: Level A (visit **website** for more info)

Duration

2 years full-time/ 4 years part-time

Specialisations

- Bioresource Engineering;
- Engineering Management;
- Medical Engineering;
- Power Systems Engineering;
- Renewable Energy Engineering;
- Robotic Construction Engineering;
- Robotics Engineering;
- Smart Manufacturing Engineering;
- Telecommunications Engineering; and
- Urban Systems Engineering.

Doctor of Philosophy

A PhD in Engineering at Monash involves the completion of a significant research project, which is typically presented as a thesis of up to 80,000 words, or through an approved alternative output. PhD candidates also undertake professional development activities tailored to support their research and long-term career goals.

Specialisations

PhD studies can be undertaken in the following disciplines:

- Chemical and Biological Engineering;
- Civil and Infrastructure Engineering;
- Electrical and Computer Systems Engineering;
- Mechanical, Aerospace and Smart Manufacturing;
- Materials Science and Engineering;
- MedTech and Biomedical Engineering; and
- Natural Resources, Environment and Sustainability.

Doctor of Philosophy (Industry)

The Doctor of Philosophy (Industry) at Monash University is designed for candidates who want to undertake impactful, industry-focused research while building strong career connections and contributing to real-world challenges.

The Industry PhD offers a flexible, professionally rewarding pathway whether you are:

- An existing PhD candidate looking to add a hands-on, industry-embedded dimension to your research;
- A professional engineer employed full-time or part-time, seeking to upskill with a doctoral qualification while delivering value to your employer; or
- A prospective research student seeking to collaborate with industry as part of your PhD journey.

Research Areas

Industry PhD projects are available across a wide range of Monash Engineering's research strengths, including

- Chemical and Biological Engineering;
- Civil and Infrastructure Engineering;
- MedTech, Electrical and Computer Systems Engineering;
- Materials Science and Engineering;
- Mechanical, Aerospace and Smart Manufacturing; and
- Natural Resources, Environment and Sustainability

These areas align with Monash's global research priorities and tackle critical issues such as energy transition, advanced manufacturing, water security, transport, biomedical innovation, and the digital transformation of infrastructure.

Research Opportunities (Cont'd)

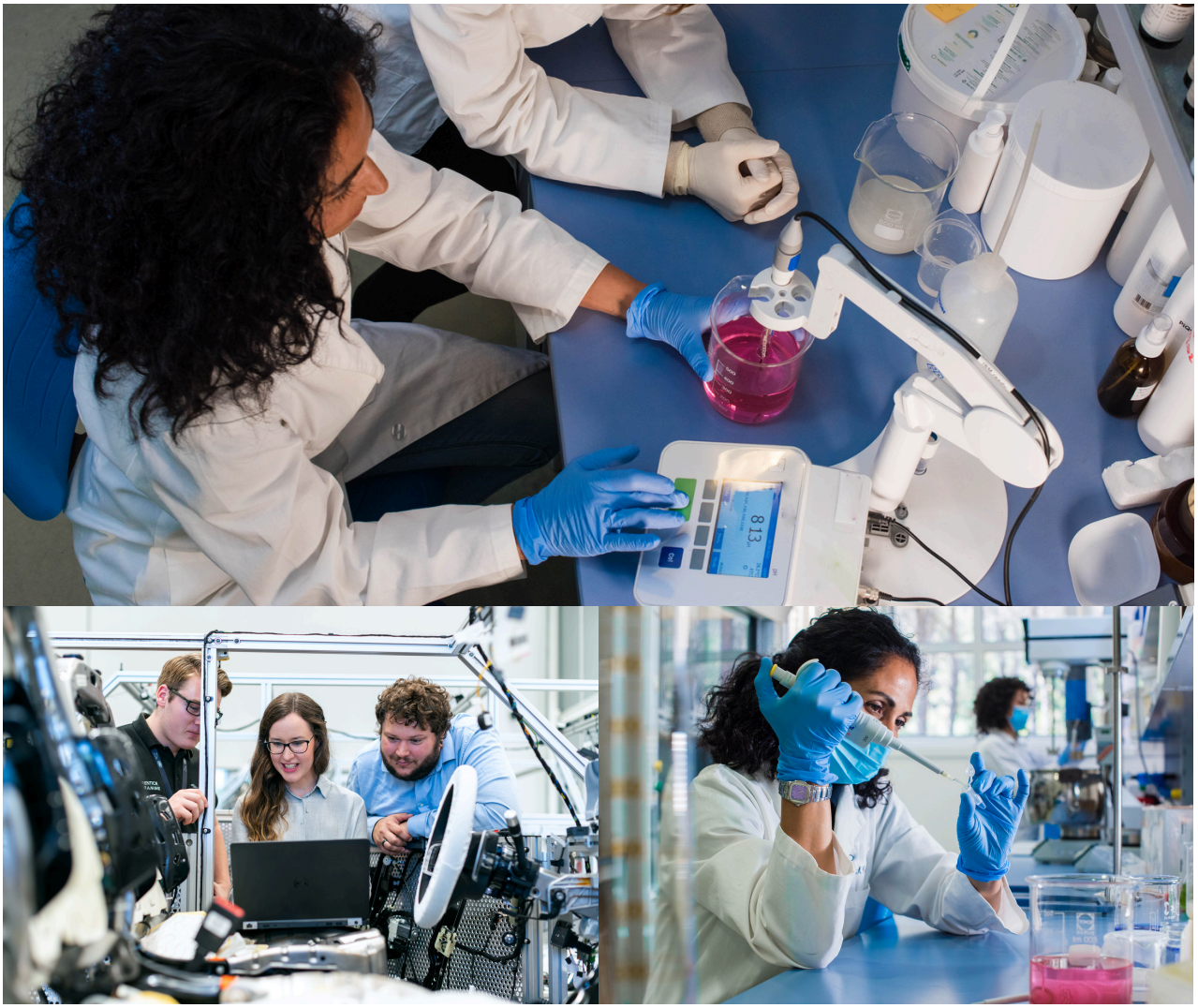
Research Excellence & Industry Collaboration

Monash Engineering is rated well above world standard in the latest Excellence in Research for Australia (ERA) evaluation. The faculty leads pioneering work across traditional, interdisciplinary, and emerging engineering fields.

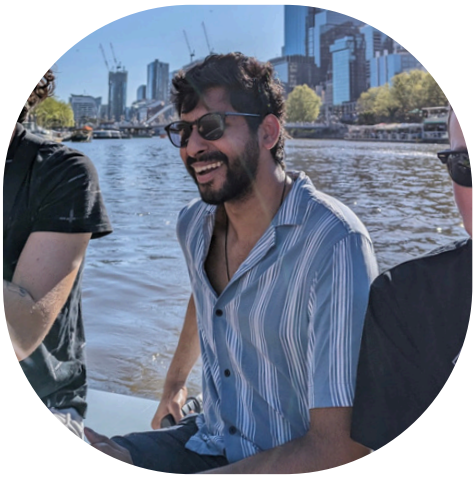
Our research teams partner with:

- Local and international industry leaders;
- Government agencies and research organisations;
- Cooperative Research Centres (CRCs); and
- Consulting firms and start-ups.

Industry PhD candidates benefit from access to world-class laboratories and specialised facilities, including advanced testing equipment, fabrication workshops, pilot plants, clean rooms, and computational modelling suites.



PhD Profiles



Bennet Thomas, PhD

Motivation and Decision to Pursue a PhD

1 **What inspired you to pursue a PhD in chemical engineering after completing your undergraduate degree?**

“ In all fairness to my past self– and to any undergraduate student reading this– I was neither inspired nor disciplined enough to undertake the rigor of a PhD program immediately after completing my bachelor degree. The turning point came during my postgraduate studies in Chemical Engineering at Monash University. It was there that I found the spark.

My pathway to doctoral admission was somewhat unorthodox. I was enrolled in a Master by Coursework program, not a research-based one. As part of the curriculum, I was required to complete a year-long research unit under the supervision of an academic in the department– similar in structure to our current final year projects. During this time, I had the opportunity to work on a compelling and intellectually stimulating problem. In hindsight, I believe that problem inspired me to look deeper, ask better questions, and ultimately led me to pursue a PhD at Monash.

2 **How did you decide on your research topic or area of specialization and were there any experiences or mentors during your undergraduate studies that influenced your decision to pursue a PhD?**

“ The topic of my doctoral research was initially presented to me as a problem statement by Professor Sankar Bhattacharya, who supervised my postgraduate research. However, I distinctly remember asking a series of questions that helped me shape my own perspective on the problem: Is this problem worth solving?

What impact could my contribution have in this field? Who stands to benefit from this research? And what would my career prospects look like after completing a PhD? These questions guided my motivation and helped me take ownership of the research journey.

Professor Bhattacharya has mentored me since 2020, and his practical, engineering-driven approach to solving industry-relevant problems resonated deeply with me. He encouraged his students to learn through experimentation– even through errors– and to take full responsibility for the solutions we proposed. This mentoring style aligned well with my learning preferences and fostered a strong sense of independence in my research.

A pivotal moment that reaffirmed my decision to pursue research as a career was my first experience working with a scanning electron microscope during the Nanomaterials 1 unit at Monash uni. That experience fed my curiosity and connected it with the applied side of engineering. As a chemical engineer, this was particularly exciting, given the limited access to advanced instrumentation in my undergraduate labs. It was the moment I realised that research could be both intellectually fulfilling and practically impactful.

PhD Journey and Research Experience

1 Can you briefly describe your PhD research and its significance in the field of chemical engineering?

“

The focus of my doctoral dissertation was to investigate the extraction and separation of a group of strategically important metals known as rare earth elements (REEs). REEs comprise 15 lanthanides in the modern periodic table and are essential for a wide range of applications, including consumer electronics (e.g., mobile phones, televisions), renewable energy technologies, and national defence systems.

In the context of a rapidly evolving, consumer-driven global economy, and with governments worldwide pledging support for a full energy transition in the coming decades, the demand for REEs has surged. This has placed immense pressure on an already strained supply chain, with geopolitical dynamics further complicating access and distribution.

To address this challenge, my research aimed to diversify the REE supply chain by exploring unconventional but abundantly available waste resources, specifically coal fly ash (CFA) – a by-product of coal combustion in power plants. Australia has accumulated millions of tonnes of CFA in ash ponds, representing a largely untapped resource.

My work involved characterising multiple CFA samples, quantifying their REE and critical metal content, and developing a novel process technology for extracting and separating REEs from Victorian brown coal fly ash. The results demonstrated that this industrial waste can be reclassified as a valuable resource, offering a sustainable pathway for REE recovery and contributing to circular economy principles.

2 **What were the most rewarding aspects of your PhD research? What were some of the biggest challenges you faced during your PhD, and how did you overcome them?**

“ Looking back, I can confidently say that my doctoral training transformed me from a student who asked questions expecting answers, into a researcher who actively seeks solutions– or builds them when none exist. This evolution, which I often describe as the “metamorphosis cycle of a researcher,” is something I share with aspiring PhD students. In hindsight, that transformation is one of the most rewarding aspects of my journey.

Of course, this change did not happen overnight. It was shaped by countless sleepless nights, an abundance of coffee, and an irreplaceable support system of friends and family. They listened patiently to my late-night TED-style monologues, offered advice, and even cooked meals during high-pressure months.

The doctoral journey presents many challenges, but the one I was least prepared for was dealing with experimental failures and rejections - whether from a failed experiment I was confident in, or a manuscript being declined by a journal. I had to train myself not to take these setbacks personally, but to evaluate them on merit and keep moving forward. Over time, the research problem I was trying to solve became an obsession, and I genuinely fell in love with it.

On a personal note, my Christian faith played a vital role in helping me find hope during uncertain moments. It grounded me and gave me strength to persevere when the path ahead seemed unclear.

Daily Life as a PhD Student

1 **Can you describe a typical day in the life of a PhD student in chemical engineering?**

“ There’s no easy way to put this– but a typical day in the life of a PhD student often involves wrestling with some degree of existential crisis (just kidding... sort of!). I usually start my day a bit later than most, as I prefer working late into the night when it’s quiet and distraction-free. My mornings begin with prayer and meditation, followed by a much-needed coffee run and checking urgent emails.

I like to begin with a to-do list, prioritising any spillover tasks from the previous day. I aim to get focused work done in the morning- whether it’s reading, writing a manuscript, or analysing data– while I typically schedule meetings and collaborative work for the afternoon. On non-teaching days, I try to be in the lab by midday and make the most of the time before wrapping up. During the teaching semester, Iallocate time for class preparation, tutorials, and student consultations, which are often scheduled in the late afternoons.

Balancing research and teaching can be demanding, but it also adds variety and structure to my week.

2 **What strategies did you use to stay motivated and manage your time effectively?**

"

To stay mentally refreshed and avoid burnout, I often took bite-sized breaks from work to completely switch off and reboot– especially when I felt stuck in a rut. A walk around campus with music blasting through my earbuds or a long weekend drive often did the trick. These small moments of detachment helped me return to my work with renewed focus.

One strategy that worked particularly well for me was celebrating small wins. I found that acknowledging progress, no matter how minor, had a compounding positive effect on my mental health. Being a self- confessed sweet tooth, I often rewarded myself with a trip to my local Lukumades shop or a box of Daniel's Donuts- both became comforting rituals during intense phases of my PhD.

When it came to time management, I learned that daily reflection was key. I made it a habit to assess how much of my planned work I had actually completed. This required two things: first, having a clear plan for the day, and second, being honest with myself during reflection. Plans don't always go as expected, but recognising distractions and managing interferences became essential. One of the most powerful tools I developed was the ability to say "no" to requests or people that didn't align with my priorities for the day.

Career Prospects and Opportunities

1 **How has obtaining a PhD in chemical engineering influenced your career opportunities and trajectory?**

"

My PhD training encompassed both technical and non-technical dimensions, equipping me with the ability to collaborate effectively across a diverse range of disciplines. I've worked with individuals who communicate in highly technical language, as well as those who operate within business or non-technical domains. This interdisciplinary exposure has broadened my perspective and opened opportunities beyond purely technical roles, including potential pathways into management and strategic leadership. Currently I am working as a Research Engineer at Monash Uni.

2 **What types of roles or industries are open to PhD graduates in chemical engineering?**

“

A few suggestions would be consultancies in waste management and energy sectors, pharmaceutical industry, food and beverages industry, an early career researcher at national research organizations such as CSIRO and ANSTO, beamline scientists at Australian synchrotron, patent office, upcoming manufacturing industries such as green steel, and startups.

Advice for Aspiring PhD Students

1 **What advice would you give to chemical engineering students who are considering pursuing a PhD?**

“

Not sure if these qualify as advice, but if you are considering doing a PhD, then you may want to:

1. Fall in love with your research problem and not the solution.

2. Remember that your PhD is a journey. Embrace it, walk your own path. Everyone’s story and experiences will be different. So don’t compare yourself with others. It will steal your joy.

2 **What key qualities or traits do you think are essential for someone to succeed in a PhD program?**

“

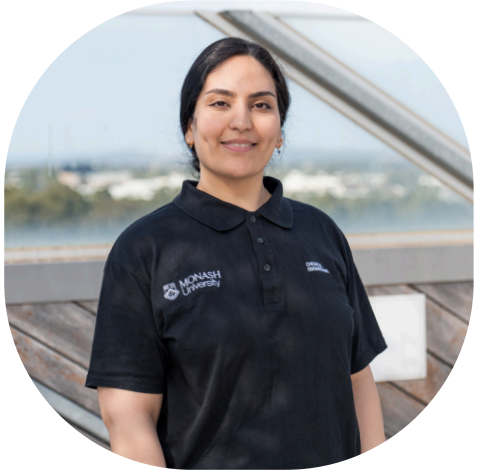
Resilience, humility and curiosity.

Prospects and Aspirations

1 **What are your career aspirations after completing your PhD?**

“

I will be taking this post-PhD journey one step at a time. There are things I am genuinely passionate about such as policies and business. However, plenty of groundwork to be done before making a transition outside academia.



Maryam (Mary) Mounesan, PhD

Motivation and Decision to Pursue a PhD

1 **What inspired you to pursue a PhD in chemical engineering after completing your undergraduate degree?**

“ I've always been curious about how we can design new materials and processes to solve real-world challenges. During my undergrad, I discovered I loved research - digging deep into problems and experimenting in the lab. A PhD felt like the perfect way to keep exploring.

2 **How did you decide on your research topic or area of specialization and were there any experiences or mentors during your undergraduate studies that influenced your decision to pursue a PhD?**

“ I was drawn to polymers and advanced manufacturing after working on a final-year project in polymer modification. I had fantastic mentors who encouraged me to take on research challenges, attend seminars, and think creatively—this really shaped my decision to dive into a PhD.

PhD Journey and Research Experience

1 **Can you briefly describe your PhD research and its significance in the field of chemical engineering?**

“ My work focuses on developing smart photopolymer systems that respond to both light and heat. These materials can lead to better 3D printing processes and advanced coatings, pushing forward what's possible in manufacturing and materials engineering.

2 **What were the most rewarding aspects of your PhD research? What were some of the biggest challenges you faced during your PhD, and how did you overcome them?**

“ Seeing my ideas turn into real experiments and getting good results was incredibly rewarding. The toughest parts were setbacks in the lab - when things didn’t work after weeks of effort. But I learned resilience and how to troubleshoot, which are invaluable skills.

Daily Life as a PhD Student

1 **Can you describe a typical day in the life of a PhD student in chemical engineering?**

“ Most days were a mix of lab work, analysing data, reading papers, and writing. I’d often plan experiments in the morning, run them through the day, and spend afternoons crunching data or discussing progress with my supervisor.

2 **How did you stay motivated and manage your time?**

“ I broke big goals into smaller weekly tasks and made sure to celebrate small wins. Keeping a routine and staying connected with peers for support made a huge difference.

Career Prospects and Opportunities

1 **How has obtaining a PhD in chemical engineering influenced your career opportunities and trajectory?**

“ It’s opened up advanced roles in R&D, innovation, and technical consulting that wouldn’t have been accessible otherwise. Beyond technical skills, it’s really sharpened my problem-solving and project
management abilities.

Grad Profiles

Rashmika Undugodage, CSL

Career Path and Decisions

1 **Can you briefly describe your current role and the company you work for?**

“

I am a Quality Graduate at CSL, working in Frontline Quality Assurance for Vaccine and Anti-venom manufacturing. CSL is a global biotechnology company with operations in more than 35 countries and 8 global manufacturing sites – Melbourne is home to two large scale manufacturing sites for the influenza vaccine, Anti-venoms, Q-fever vaccine as well as plasma and recombinant biotherapies.

My role in Frontline QA is to provide direct support to manufacturing operations to ensure smooth processing and end to end delivery of the final drug product from raw materials to the consumer market.

2 **How did you decide on your specific area of specialization within chemical engineering?**

“

I studied Chemical engineering and pharmaceutical science, I decided not to pursue the typicaly engineering graduate stream at CSL as I had completed a Summer Internship at CSL in 2023 in Quality. I really enjoyed the dynamic and fast paced-work that incorporates a lot of engineering skills such as critical thinking and problem solving with risk analysis and sterile regulations.

My engineering studies has definitely helped my work in QA and you’ll be surprised how many people have engineering backgrounds in a variety of areas, there are so many career paths and areas that engineering opens up for you.

Transition from University to work

1 **What were the biggest challenges you faced transitioning from university to the professional world?**

“ I did an undergrad internship for 10 weeks at CSL and then continued to work part-time during my final year so it was a seamless transition into a company who I was fortunate to be familiar with. However there were still a lot of challenges such as adjusting to a 38 hour working week and learning to balance conflicting priorities.

2 **Are there any skills or knowledge areas that you wish you had focused on more during your studies?**

“ I loved my time at uni, I was on the MESS committee, CTO for Monash Pilot Processes student team, I was a Monash Mentoring coordinator and worked for Career Connect in Student leadership so I had a really diverse and rich experience that taught me a lot about time management, leadership and how to find what drives you.

So I really recommend seeing what else you can engage in at uni in addition to your course. I liked the chemical engineering course but I didn’t love it – what I loved more was the student team work, design and final year projects because they all showed me what I could do with Engineering and those opportunities really excited me.

Job Search and Application Process

1 **How did you approach your job search after your graduation? What resources (e.g. university career services, internships, networking) were most helpful in securing your first job?**

“ Internship, internship, internship

I can’t recommend doing at least one internship if not two whilst at uni. I did the Monash Co-op program in 2022 and took off 6 months to work full time for a chemical engineering company – it was a great eye-opening experience and really helped me in my second internship at CSL in 2023.

Even if you can’t get an internship exactly in the area you want, highly recommend branching out and trying something new – because you’ll still learn really valuable skills and more importantly start figuring out what work you actually like and don’t like.

2 **Can you share any tips for writing a strong resume and preparing for interviews?**

“ STAR Method for interviews – Situation, Task, Action taken and Result. So many students have either great work experiences but struggle to articulate what they did and what the outcomes were. Conversely a lot of people don't have many relevant work experiences for engineering jobs so it's all about teasing out the relevant skills and results that make the most impact.

For example, if you say you have good communication – they won't care - because everyone says that – how do you show it? Talk about a project where you had to involve multiple stakeholders and how you communicated deadlines and updates and what the outcome was – was the project completed on time, what did you learn from it etc...

Daily work Life

1 **What aspects of your job do you find most rewarding and why?**

“ I am really fortunate that the company I work for saves people's lives.

To be involved in getting the flu vaccine as well as life-saving anti-venoms for red-back and funnel web spiders and snakes to patients is extremely rewarding. A lot of the time the work is very fast-paced and challenging but it's all worth it when you know that every obstacle overcome changes someone's life for the better.

2 **What are some common challenges you encounter in your work, and how do you overcome them?**

“ Stakeholder management is massively important in large companies. Everything is team based so you need to learn how to work with different people and balance competing priorities.

Advice for Current Students

1 **What advice would you give to current chemical engineering students who are about to enter the workforce?**

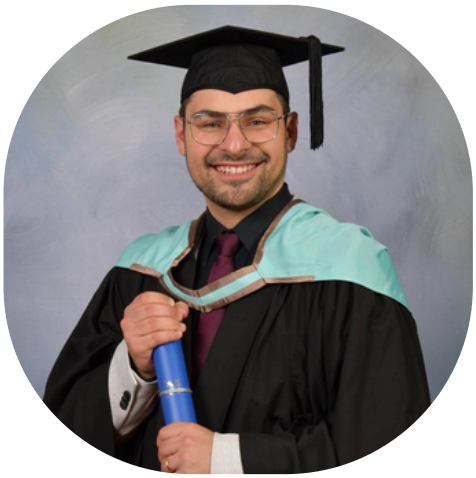
“ Apply for internships, join student teams, join a research project, do an extra-curricula club.

Anything that helps you build skills outside of your coursework.

2 **What key qualities do you think employers look for in a chemical engineering graduate?**

“ Ability to drive results, collaboration, pro-activeness, enthusiasm, resilience, passion.

Career Path and Decisions



Adrian Mascia, CSL

1 Can you briefly describe your current role and the company you work for?

“

I am currently employed at CSL Seqirus as part of the 2025 Graduate Program, working in the role of Engineering Graduate. My first rotation is within the Engineering Operations team, which is responsible for managing the site's central utilities and plant services. This team plays a critical role in responding to equipment breakdowns and production-related issues, where we are tasked with troubleshooting, identifying root causes, and coordinating with cross-functional teams to implement effective solutions. The primary objective of my role is to ensure that all plant services operate efficiently and are properly maintained to support uninterrupted production and uphold product quality standards. Additionally, I have been involved in site decommissioning activities as the CSL Parkville site prepares for closure. This includes planning and executing end-of-life procedures and safely deactivating utility services to various buildings across the site.

2 How did you decide on your specific area of specialisation within chemical engineering?

“

When I first began my university journey, I enrolled in a double degree in Chemical Engineering and Pharmaceutical Science. After completing my first two years, I discovered a strong passion for Chemical Engineering. I was drawn to the intellectual challenges it presented and was fascinated by the way chemical processes could be scaled up from the laboratory to full-scale manufacturing. What particularly appealed to me was the critical role Chemical Engineers play in making production processes both economically viable and environmentally sustainable. This intersection of innovation, practicality, and impact solidified my decision to pursue a chemical engineering career

Transition from University to work

1 **What were the biggest challenges you faced transitioning from university to the professional world?**

“ One of the biggest challenges I encountered when transitioning from university to the professional world was shifting from a focus on theoretical knowledge to applying practical engineering concepts. At university, success was largely based on understanding and mastering theoretical principles. However, in the workplace, I've found that my day-to-day responsibilities are much more centred around solving real-world problems and applying practical knowledge to support business operations. This shift has highlighted the importance of balancing both theoretical understanding and practical experience. Developing this balance not only enhances your effectiveness in an engineering role but also makes the transition from academic study to professional practice much smoother.

2 **Are there any skills or knowledge areas that you wish you had focused on more during your studies?**

“ Looking back, I would have liked to gain more exposure to commerce and how a company operates. In my current role, many decisions are influenced by factors such as budget constraints, cost-effectiveness, and the value added to the business. Having a foundational understanding of economics and how a company operates would have been extremely beneficial in navigating these aspects more confidently. Developing business acumen alongside technical skills can significantly enhance your ability to contribute strategically in any role.

Job Search and Application Process

1 **How did you approach your job search after your graduation? What resources (e.g. university career services, internships, networking) were most helpful in securing your first job?**

“ During my final year of university, I actively applied for a wide range of graduate programs, targeting any company that was recruiting for graduate chemical/process engineers. I also broadened my search by applying for junior engineering roles across various industries. To support my job search, I regularly used graduate recruitment platforms such as GradConnection, as well as LinkedIn. Ultimately, the most valuable resource was from an internship I completed at an animal health company, where I gained exposure to pharmaceutical manufacturing. I secured this opportunity through networking, and it proved instrumental in helping me land my first graduate role.

2 **Can you share any tips for writing a strong resume and preparing for interviews?**

“ One of the most important pieces of advice I can offer is to tailor your resume to each job you apply for. Take the time to review the job description carefully and highlight the skills and experiences that align with what the company is seeking. A targeted resume makes it much easier for recruiters to see why you’re a strong candidate. I also highly recommend submitting a cover letter, even if it’s listed as optional. A tailored cover letter shows that you’ve taken the time to understand the company’s work and can articulate why you're a good fit for both the role and the organisation. When it comes to interviews, the best approach is to be yourself. Stay calm and relaxed. Interviewers aren’t trying to catch you out; they’re simply looking to find someone who is the right fit for the team. Authenticity, preparation, and a genuine interest in the role go a long way.

Daily work Life

1 **What aspects of your job do you find most rewarding and why?**

“ One of the most rewarding aspects of my role is the opportunity to go out into the field, identify real-world issues, and implement practical solutions. Whether it’s resolving a minor problem, such as organising the replacement of a gasket to fix a condensate leak; or addressing a more complex engineering challenge, I find great satisfaction in knowing that my work directly contributes to the smooth operation of the facility. What makes this especially meaningful is understanding the broader impact: by supporting efficient and reliable manufacturing processes, I’m ultimately helping to deliver high-quality products to patients who rely on them.

2 **What are some common challenges you encounter in your work, and how do you overcome them?**

“ Effective communication is critical in the workplace. In my role, I regularly collaborate with individuals across a variety of functions; each with different working styles, personalities, and educational backgrounds. Learning to recognise and adapt to these differences has been key to working efficiently and building strong professional relationships. Some colleagues prefer high-level overviews, while others require detailed technical explanations. Being able to tailor my communication style to suit the audience has helped ensure that information is understood clearly and tasks are completed effectively. Strong communication not only supports collaboration but also plays a vital role in problem-solving and driving outcomes.

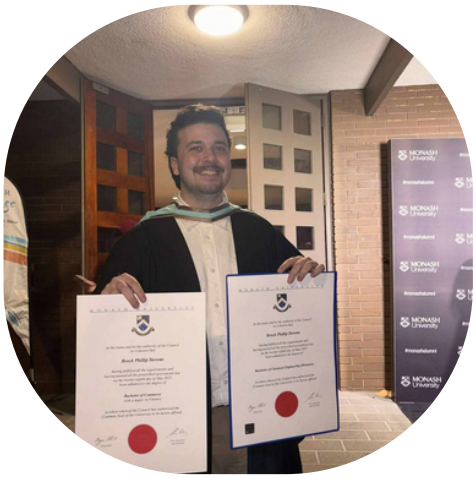
Advice for Current Students

1 **What advice would you give to current chemical engineering students who are about to enter the workforce?**

“ Be proactive in your job search, actively seek out roles and graduate programs that align with your interests and career goals. Don’t underestimate the power of networking; connecting with people in the industry can open doors and lead to valuable opportunities down the line. Most importantly, don’t be afraid to step outside your comfort zone. Be open to trying something new, you might discover a passion in an area you hadn’t considered before. Every experience is a chance to learn, grow, and shape your career path.

2 **What key qualities do you think employers look for in a chemical engineering graduate?**

“ Two of the most valuable qualities are authenticity and a willingness to learn. As a graduate, no one expects you to know everything from day one. Employers understand this; they’re not looking for perfection, but for someone who is genuine, curious, and motivated to grow. Demonstrating a real interest in the role and the industry, along with a proactive attitude, shows that you're ready to learn and develop.



Brock Stevens, Woodside Energy

Career Path and Decisions

1 **Can you briefly describe your current role and the company you work for?**

“ I am a graduate process engineer for Woodside Energy working in their New Energy team. My role is to help progress new energy projects (Hydrogen and Ammonia). This includes assisting contractors progress their studies, doing in house calculations to advise on issues and collecting data for environmental approvals.

2 **How did you decide on your specific area of specialization within chemical engineering?**

“ Leaving university, I was very keen on going into an industry where I could help make the environment better off. This led me towards three industries in particular: Low carbon energy, Waste management and Water treatment. I was looking into all three but ultimately decided on new energy due to the level of technical detail required on a day-to-day basis.

Transition from University to Work

1 **What were the biggest challenges you faced transitioning from university to the professional world?**

“ My main challenge when transitioning to the workforce was changing my writing style to be more concise. Many engineers only want a high-level summary of your findings rather than a full academic paper. This has been a challenge as a found myself quite rigid in my writing. After receiving feedback, I made a conscious effort to work on my writing which has since improved.

2 **Are there any skills or knowledge areas that you wish you had focused on more during your studies?**

“ I wish I had focused on the fundamentals more throughout my studies. Since entering the workforce there have been topics that have come up that I didn't understand at university. During my studies I was quick to write of a topic as something I would never need but now I need to review my studies and do further readings to catch up on what I previously ignored.

Job Search and Application Process

1 **How did you approach your job search after your graduation? What resources (e.g. university career services, internships, networking) were most helpful in securing your first job?**

“ I initially approached the job search with a shotgun approach applying to every role I could. After minimal success I refined my applications to be less in quantity but much higher quality. During this time, I went to multiple networking nights and reach out to the people I met periodically asking questions about the business and their daily work so I can better suit my applications and where I want to apply.

2 **Can you share any tips for writing a strong resume and preparing for interviews?**

“ People underestimate non engineering related work experience, but the soft skills developed at other jobs are some of the major quality's recruiters look for in a graduate. Being genuine in your experience is crucial as many recruiters can tell if a graduate's experience is embellished or overexaggerated.

Daily work Life

1 **What aspects of your job do you find most rewarding and why?**

“ The most rewarding aspect of my job is when I have spent time researching into an issue and then I am able to make an informed recommendation to the senior engineers who use it to decide the future of a project. It feels great to know that the work I do influences the future.

2 **What are some common challenges you encounter in your work, and how do you overcome them?**

> “ Lack of information is the most common challenge I encounter. Some of the work I do is not common practice, so information is few and far between. I must do research into what information is available and draw conclusions based on similar circumstances and supplement my own calculations where needed. Having a strong resilience when there isn’t a clear solution is crucial.

Advice for Current Students

1 **What advice would you give to current chemical engineering students who are about to enter the workforce?**

> “ Be open to new opportunities including new locations and projects. People career paths aren’t always clear cut. The best opportunities often come from unexpected angles. Limiting yourself to one industry or location may cause you to lose out on an opportunity of a lifetime.

2 **What key qualities do you think employers look for in a chemical engineering graduate?**

> “ Speaking with senior engineers in charge of recruiting the qualities they look for in a chemical engineering graduate are primarily willingness to learn, ability to work in a team and a good fundamental understanding of the technical skill. They completely understand that you will not know everything and appreciate the ability to admit you don’t know something.

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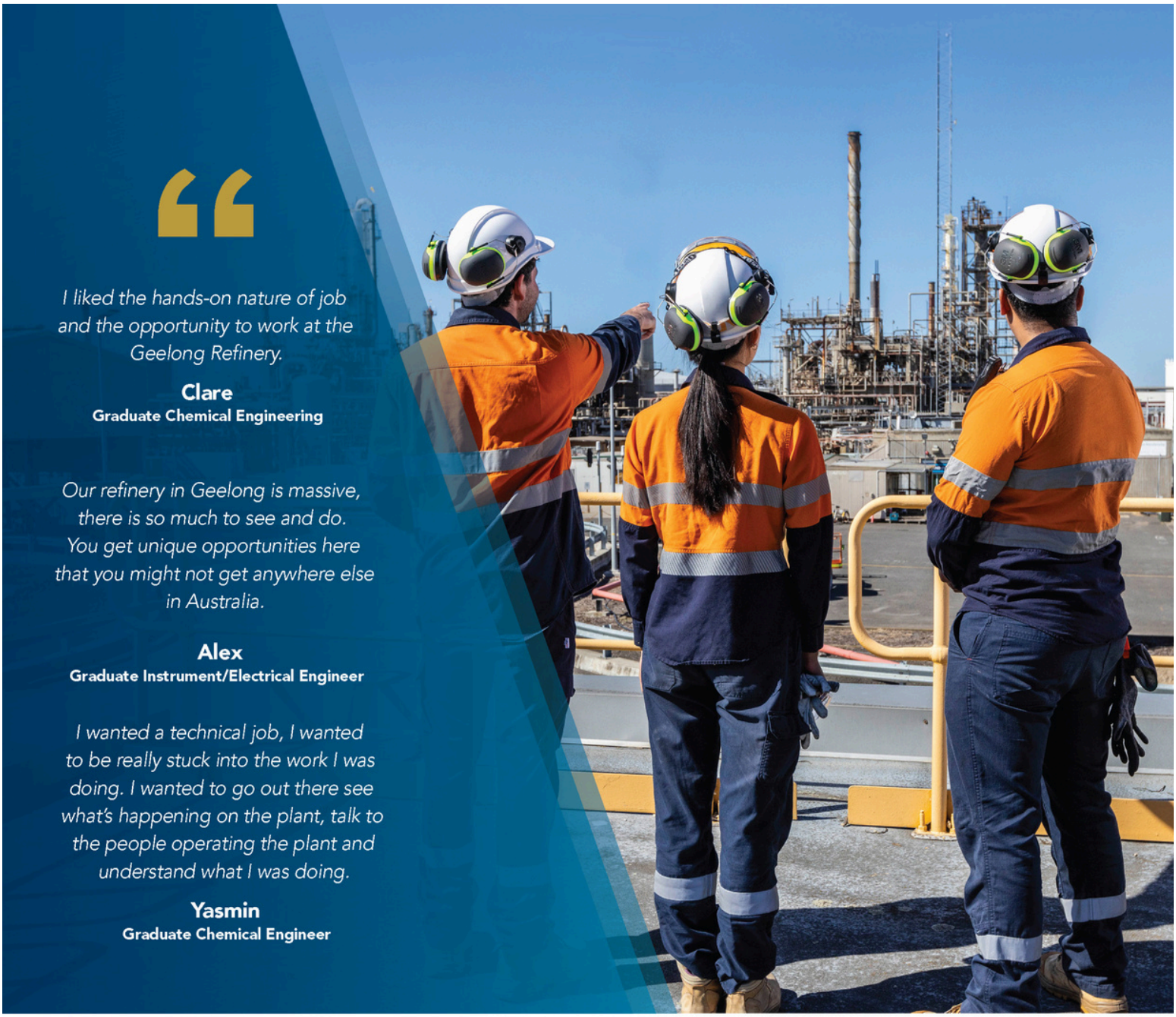

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Clare
Graduate Chemical Engineering

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Alex
Graduate Instrument/Electrical Engineer

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Yasmin
Graduate Chemical Engineer

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- 170+ years of history
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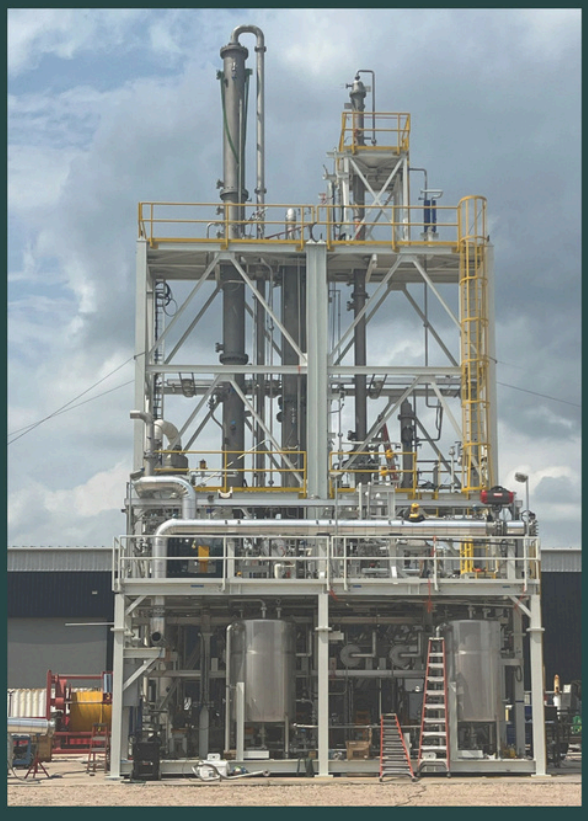

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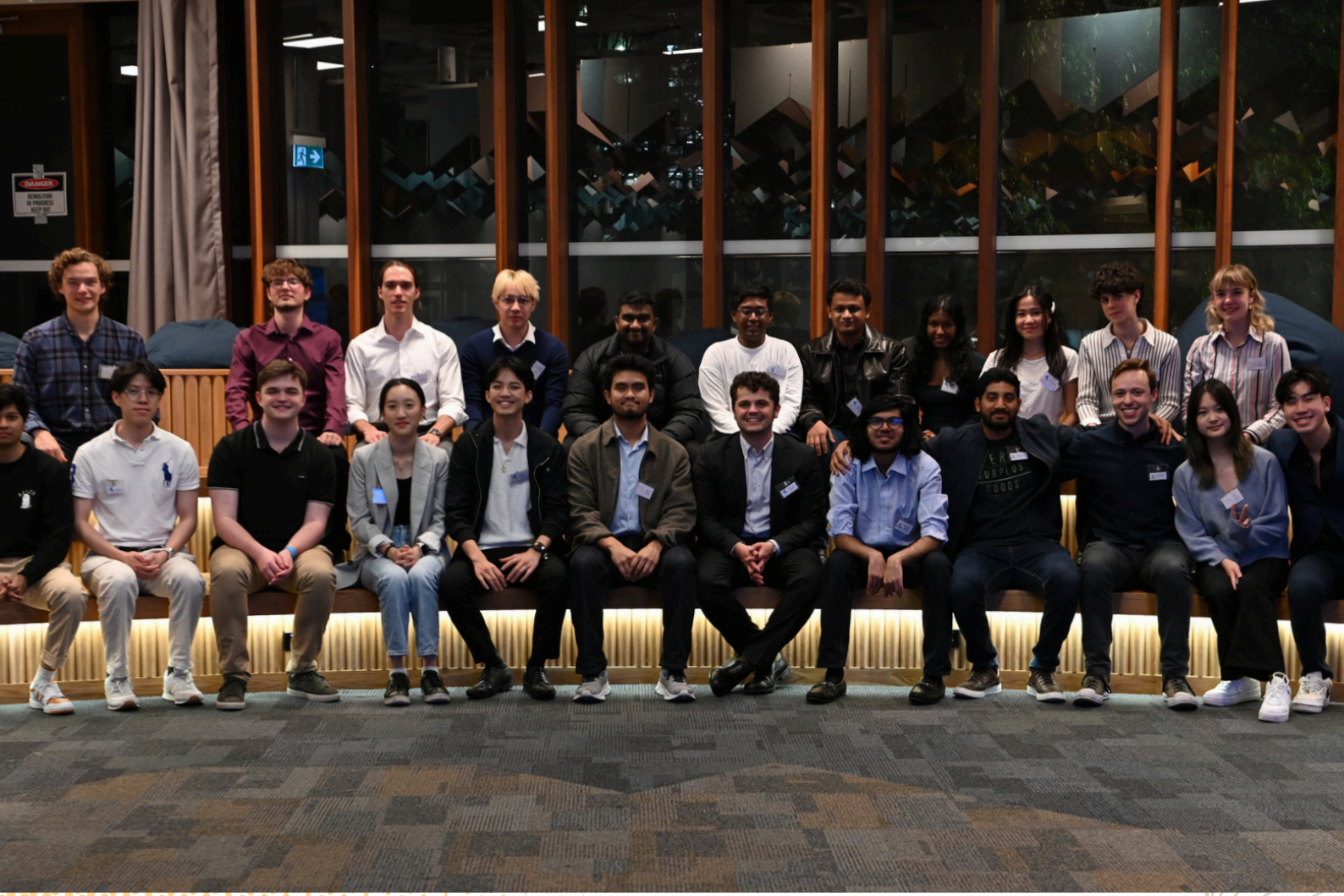

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