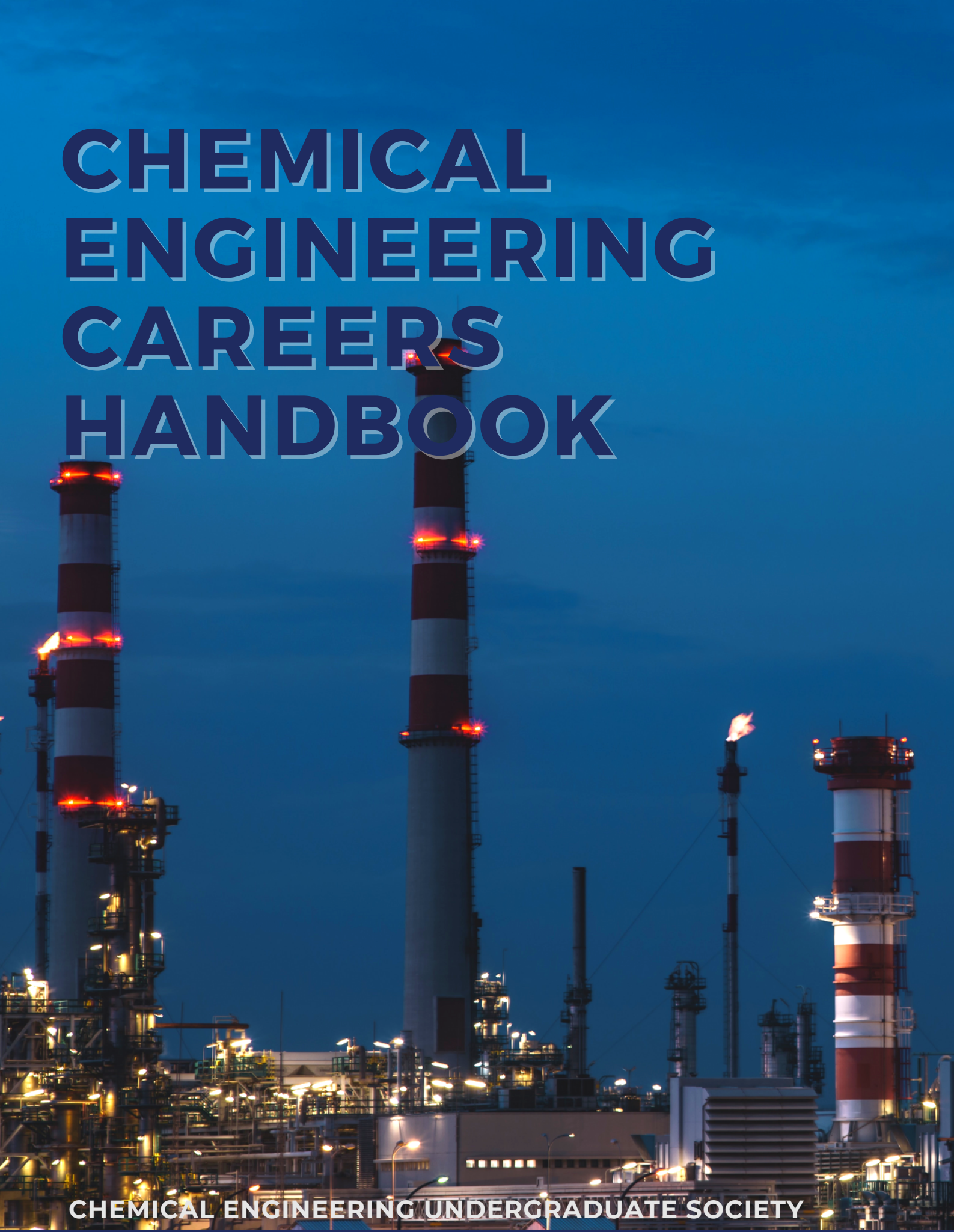
CHEMICAL ENGINEERING CAREERS HANDBOOK



CHEMICAL ENGINEERING UNDERGRADUATE SOCIETY

JUNE 2023 ISSUE 6

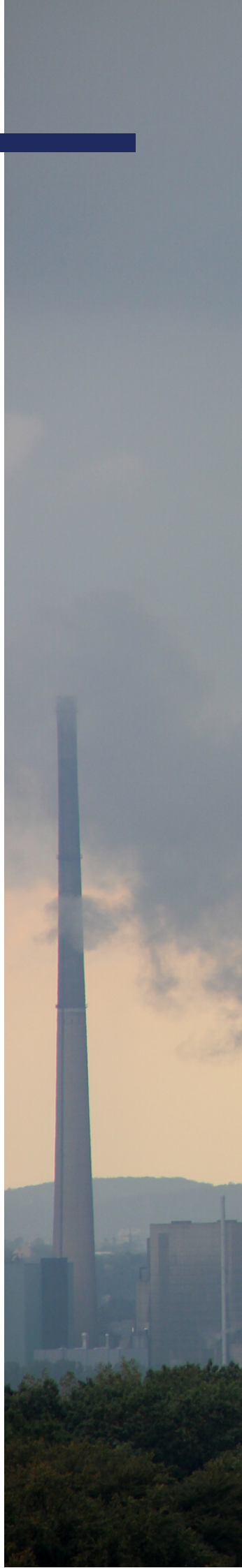
INTRODUCTION

PREFACE

The sixth edition of the Chemical Engineering Undergraduate Society Careers Handbook has been developed by our 2023 Industrial Relations Team. This handbook serves as a guide for future students when applying for industrial training and graduate positions. It includes helpful tips for resume and cover letter development as well as examples of the types of chemical engineering careers available beyond tertiary study. There is also an internship guide which discusses the different types of internships available including non-traditional programs and projects.

This year's issue features a new section which briefly explores start-ups as well as some advice, tips and resources for people interested in entering the start-up sphere.

This handbook does not however provide all the answers to getting a job. Being an active member of CEUS and attending industry events, improving your networking skills, and being proactive in your search for opportunities are also all essential in achieving your career goals. Feel free to use this handbook as well as resources provided on our Trello Jobs Board to give yourself a head start in applications.



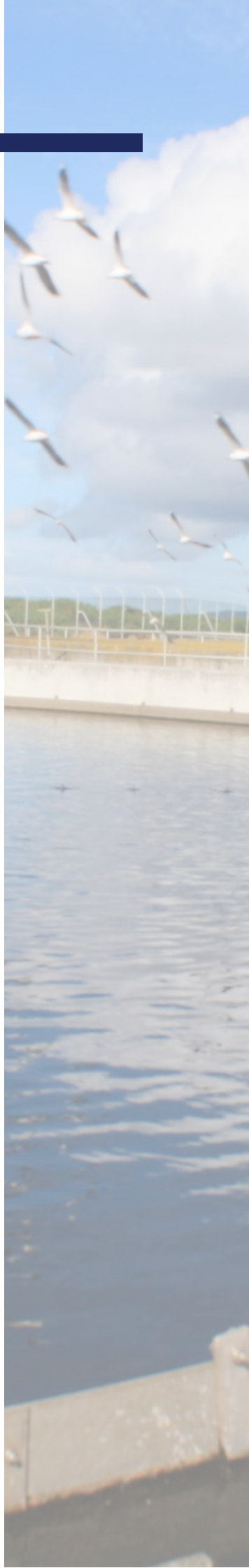
Disclaimer

Please note, whilst all due care has been taken in researching this information and ensuring that the material is correct at the time of publishing, it is still based primarily on public websites that may change without notice.

The Chemical Engineering Undergraduate Society of UNSW takes no responsibility for any errors and any such reliance upon them.

We suggest students interested in organisations noted in this publication to pursue them directly for further information.

TABLE OF CONTENTS



CHEMICAL ENGINEERING UNDERGRADUATE SOCIETY

SECTION 1: CAREER GUIDE

JUNE 2023 ISSUE 6

GUIDE FOR UNIVERSITY

Your years at university help prepare you for your future career by creating useful experiences, skills, and knowledge. In general, this section will outline some steps you take to fully utilise your time at university. The main steps being maintaining your grades, getting work experience and partaking in extracurriculars.

FIRST YEAR

- Make friends with lots of people, and talk to your tutors and professors. This will start your network.
- Get involved with societies and do some light volunteering.
- If you want to take it up a notch, you can join the various development programs offered by societies at UNSW, e.g. Engsoc's VDP and EIP or WIESOC's Development Program.
- Go to networking events held by the different societies
- Do some research on UNSW careers online https://careersonline.unsw.edu.au/.
- Attend the various resume workshops provided by the university and societies to build your resume.

MIDDLE YEARS

- Attend more networking events
- Completing internships and gather references to use in the future
- Take on an executive role in a society
- Go on exchange for a term
- Completing Industrial Training. Internships are very important for your career so it is vital that you prepare properly. Make sure you apply to many places and keep track of your applications. Apply as early as you can, do not leave it until the last minute. Use an excel spreadsheet or some other application to keep information about your applications in one place. Note down the date the application is due, when and where you have an interview, when the results will be released, if you failed or passed, etc.
- Practise being in an interview setting with family or friends. You can refer to the interview section of the handbook for more advice.
- Have a personal statement ready; i.e. a short blurb about yourself that you can tell the interviewer if they ask or during networking events. This can include your name, degree, what you are interested in doing in the future, etc.

FINAL YEAR

- The end of your university life is the start of your professional career. Make sure you update your resume and cover letters and look at applying for graduate positions.
- If you are interested in completing a PhD in Chemical Engineering, make sure you speak to a supervisor of interest. We suggest contacting the Chemical Engineering Research Society (CERS) at cers@unsw.edu.au for more information.

INTERNSHIP GUIDE

All engineering students at UNSW are required to undertake 60 days of industrial training (IT) before they can graduate. This section discusses the types of internships available to chemical engineering students.

TRADITIONAL INTERNSHIPS

Traditional internships refer to placements relevant to your program or specialisation in a professional engineering workplace. This can either be paid or unpaid, however UNSW strongly advises against unpaid internships. A minimum of 30 days of traditional IT must be taken, but these internships can count towards the full 60 days of IT.

Consulting

Consulting firms such as GHD, Aurecon and KPMG offer internships to chemical engineering students. These internships often run over the university summer holidays for 10-12 weeks. Sometimes they offer the possibility to continue working part-time on the same team after the internship has ended. Consulting firms deal with a range of projects and you may work in the areas of water management, process simulation, advisory, project management or risk management. The teams are often diverse and you get the opportunity to interact with people from all areas of the business. They generally offer mentoring and other professional programs for interns to network and build skills.

Process Engineering

Generally referred to as 'vacation programs' these are internships offered by more traditional chemical/ process engineering companies such as BHP, Glencore and Sydney Water. They run for 10-12 weeks over the summer holidays. Often the work site is located out of Sydney, such as in remote areas of NSW, Queensland or Western Australia. They offer residential placements, where you relocate for the summer to the site, or Fly-In-Fly-Out (FIFO) options. The type of work you can do may be in metallurgy, mining, chemicals processing, quality control, process control systems or project management.

Research and Development

Examples of companies include Resmed, Cochlear, CSIRO, James Hardie, GSK, and Selleys. Internships at these companies expose you to the behind the scenes of product development and innovation. You may be involved with laboratory work, quality control or product testing. It is likely you will collaborate with professionals in areas such as science, business and marketing.

Supply Chain

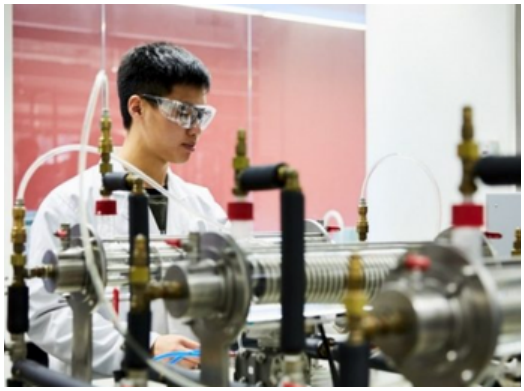
Companies such as Asahi, Arnotts, Unilever, and other consumer goods brands offer these internships. These companies produce FMGCs or 'fast moving consumer goods' and rely on efficient supply chain management to get the products to consumers. In this type of internship you will likely work with data management systems, collaborate with professionals from all across the company and be involved in project management operations.

NON-TRADITIONAL INTERNSHIPS

Non-traditional internships refer to programs, projects or courses (either provided by UNSW or a 3rd party provider) that expose students to engineering related tasks and technical skills. A maximum of 30 days of non-traditional IT can be taken over two placements.

Taste of Research

This is a research program and scholarship run by UNSW Engineering in which undergraduate students work with a research team to get hands on experience of university research. Research areas include (but are not limited to) virtual reality plant design, degradable batteries and hydrogen production from seawater. These provide students with the opportunity to collaborate with PhD students, post doctorate researchers, and senior professors. This program must be completed over 60 days, and students receive an allowance of $6000. More details on the Taste of Research program can be found here.



Vertically Integrated Projects

VIP is an elective course that extends project-based learning over the course of a year. Students work in multi-disciplinary teams on research projects or design competitions to tackle real world problems. Projects include sourcing hydrogen from food waste, using solar energy to power small devices, future energy storage, and developing novel fermentation and distillation processes. Depending on the project, it is possible to gain up to 30 days of IT. More information on VIP can be found here.

CDEV3000 Practice of Work

This is an interdisciplinary project-based course in which student learn professional skills and work with industry partners on a real-world project. The course provides skills in professional practice, presentation skills, project management, communication and teamwork. A maximum of 18-30 days can be counted depending on the specific project.

Project Everest Ventures

Project Everest is a humanitarian organisation that offers immersive overseas internships for university students. They undertake work in developing areas where they collaborate with local communities to solve complex issues. Collaborate with industry partners and students from around the world, receive mentoring and participate in career enhancing workshops. A maximum of 20 days can be counted towards IT for group projects. This can be exceeded for individual internships. A fee is associated with participating in these projects. More details on Project Everest can be found here.

CHEMICAL ENGINEERING FIELDS

There are many industries that chemical engineers can work in. Below are a list of some available fields.

- Bio-processes – Working in pharmaceuticals and the food and drink industries.
- Chemical processes – Involving the fertiliser industry, including pesticides and herbicides, caustic soda, glass and specialty chemicals.
- Combustion – Large industrial furnaces such as those for steel manufacture or for power generation from coal or gas, or the recovery of valuable energy from waste.
- Environmental – Waste and water treatment, environmental regulations and recycling. Recovering and reusing valuable materials instead of dumping them.
- Minerals – Major minerals industries such as alumina/aluminium, steel, copper, lead and gold.
- Petrochemicals – Converting oil and gas into plastics, synthetic rubber and other things.
- Pharmaceuticals
- Process control – Instrumentation and control systems which make a manufacturing process run smoothly, safely and efficiently.
- Petroleum – Producing oil, gas and LPG from onshore and offshore fields.
- Project delivery – Converting the design of a process plant into an efficient, safe operating plant.

The following section describes some of the roles that chemical engineers can have in these fields.

ROLES OF A CHEMICAL ENGINEER

PROCESS DESIGN

ABOUT THE ROLE

Process design is one of the leading roles for a chemical engineer, tying together the key aspects of chemical engineering. Process design engineers are responsible for conceptualising, developing and implementing processes or systems to produce a desired end product on an industrial scale.

This can involve designing a whole new plant (process development), optimising or adapting one that is existing (process improvement) or implementing existing designs to enable new production capacity (process capacity).

Process design requires a keen understanding of a problem in order to develop and engineer a viable solution that meets the criteria. In designing a process, the engineer requires more than just a technical knowledge and must also consider additional factors and constraints such as costs, regulatory laws and standards, safety and environment in order to meet the necessary objectives.

Chemical engineers often will participate in all stages of engineering design process, implementation through to commissioning (process validation) as well as post implementation of the plant.

Potential Employers and Industries

- Water treatment
- Food and beverages
- Oil and petroleum
- Any manufacturing company, e.g. building, pharmaceuticals, polymers and other goods
- Chemical
- Utilities

Required Skills

- Strong communication and ability to work in a team
- Adaptability
- Analytical skills
- Problem solving skills
- Process design documentation
- Project management
- Control and design philosophies
- Technical knowledge
- Computer modelling

ROLES OF A CHEMICAL ENGINEER

ENVIRONMENTAL ENGINEER

Potential Employers and Industries

- Consultancy for civil engineering projects
- Water and wastewater treatment
- Industrial waste management
- Contaminated land assessor
- Department of Environment and Agriculture
- Land evaluation
- Logistics and Infrastructure

Required Skills

- Strong communication skills both written and oral as you will be working in teams and writing reports
- Technical knowledge of hazard identification and environmental protection measures
- Project management including planning, execution and ability to meet deadlines
- Incident management skills for breaches in release limits and environmental projects
- Analytical skills for the collection of data and prediction of industrial environmental impact
- Field work, laboratory skills and computer skills

ABOUT THE ROLE

Although environmental engineering is also a separate degree to chemical, there are many crossovers which make it possible for chemical engineers to work in this role. Environmental engineers are primarily concerned with the protection of civilisation from harsh environments and the protection of the environment, primarily from human interference or activities.

Chemical engineers may be employed, similarly to environmental engineers, to control the waste products from industries and civilisations and maintain process sustainability. Environmental engineering involves many skills similar to chemical engineering including construction of risk and hazard analysis for potential threats to the environment and public health, such as setting release limits for industrial wastewater.

Environmental impact assessments (EIA) are a necessary document for all engineering projects and are primarily completed by environmental engineers. An EIA is required to assess the potential damage to all aspects of the environment and possible mitigation techniques which could be applied by engineers.

ROLES OF A CHEMICAL ENGINEER

CONTROL ENGINEER

ABOUT THE ROLE

Control Engineering is the discipline of automation, of applying mathematical constructs to various physical processes in order to control them in such a way that a logic controller (eg a computer) can do the job without excessive human interference. This field has played a pivotal role in modern chemical engineering, as it has allowed production lines to progress from a few batch processes which required direct human monitoring, to immense factories where the only people required for general operation are in a single control room.

The way this occurs is through the use of various sensors throughout the factory which relay the key properties of the processes being controlled to a computer which then uses actuators (valves, heaters, and the like) to ensure the process is performing as desired. It is the Control Engineers job to know what sensors and actuators are required; but most importantly, it is their job to tell the computer what it should be doing to make everything run smoothly.

Potential Employers and Industries

- Any manufacturing company
- Petroleum and gas
- Minerals processing
- Utilities industry

Required Skills

- Strong intrapersonal skills to be an effective member of a team
- Good documentation ability so that another could operate and maintain your work
- High level of mathematical literacy, including university calculus and laplace transforms
- Strong computing ability, including knowledge of programming, usually C. C++, or PLC native languages
- Troubleshooting and problem solving skills
- High attention to detail, as the control systems you create could prevent or cause
- catastrophes

ROLES OF A CHEMICAL ENGINEER

RISK AND SAFETY ENGINEER

Potential Employers and Industries

- Any manufacturing company e.g. building, pharmaceuticals, polymers and other goods
- Water treatment
- Food and beverages
- Oil and petrol
- Consulting
- Mining

Required Skills

- Strong communication both written and verbal
- Ability to work in a team
- Technical expertise in process safety
- Problem solving skills
- Hazard and risk identification, assessment and analysis
- Critical thinking and decision making
- Understanding of laws and government regulations

ABOUT THE ROLE

The safety of personnel, plant and environment is of top priority when designing and operating a plant or process. Due to the many inherent hazards present in industrial and manufacturing processes, chemical engineers are often tasked with providing specialist risk and safety expertise.

Chemical engineers understand the risks associated with operating plants at elevated temperatures and pressures, and offer the support required for maintaining the integrity and efficiency of the system, without compromising the safety of plant and personnel. They are tasked with identifying the hazards and risks in new and existing equipment and developing both preventative and control measures.

Safety chemical engineers are often required to perform regular risk assessments and reviewing existing measures to ensure regulatory compliance. Inadequate consideration of plant safety can result in safety incidents such as severe injury, explosions, loss of containment affecting the environment and decreased production. Chemical engineers are often employed in this role due to their ability to participate in all stages of engineering process (design, installation and commissioning) as well as being able to implement programs.

ROLES OF A CHEMICAL ENGINEER

RESEARCH AND DEVELOPMENT

ABOUT THE ROLE

Chemical engineers in the research and development sector apply their expertise to design new and innovative methods and technology within the context of chemical processes. R&D engineers are often tasked with developing new solutions to difficult problems, which often involves combining their own technical knowledge with novel research. They are responsible for managing their project from conceptualizing to trialling and implementation.

The scale at which Chemical engineers are responsible for include small scale laboratory conceptual studies, pilot plant to full commercialisation. They may also be required to evaluate existing processes and devise necessary improvements to make a process more safe and efficient.

R&D engineers are creative in their ability to implement new ideas and research into a workable product or process. Strong communication skills are essential, as R&D must effectively combine and convey their own research and ideas to a variety of disciplines and occupations.

Potential Employers and Industries

- Often any industrial company will have a R&D facility to support the growth of the business. The size of the R&D division will depend on the strategic focus of the company. If the primary strategic focus of the company is due to product development and innovation, R&D division will have a significant role in the business.
- Any industrial process e.g. pharmaueticals, polymers and other goods
- Water treatment
- Food manufacturing
- Oil and petrol
- Consulting
- Raw materials

Required Skills

- Strong communication both written and verbal
- Ability to work in a team
- Technical expertise
- Problem solving skills
- Creativity
- Self Motivation
- Critical thinking and decision making

ROLES OF A CHEMICAL ENGINEER

INDUSTRIAL CHEMIST

Potential Employers and Industries

- Pharmaceuticals
- Polymer Manufacturing
- Petrochemicals
- Food Science
- Minerals

Required Skills

- Good practical laboratory skills, most of your time will be spent in one
- A desire for in-depth knowledge
- Attention to detail
- Great teamwork skills, you will be required to work in teams with other engineers
- Strong communication skills, you will have to convey your in-depth chemical knowledge to other engineers

ABOUT THE ROLE

Working as an Industrial Chemist is unlike many of the other possible professions a chemical engineer can go into. Instead of working with Process & Instrumentation Diagrams, Computerized Process Controllers, or Hazard & Operability Studies like other chemical engineers, the chemist works in a lab with their trusty beaker and pipette.

A chemist has two main roles, that of quality control or R&D. For a chemist who chooses to go into quality control, their role is to take samples of their company's products, and measure key properties of said product to ensure that it meets strict guidelines. Quality control is a pivotal aspect of any modern industry, and is required to ensure that products are consistent, and the production process is safe and efficient.

The other role of an Industrial Chemist is to work in Research and Development. An Industrial Chemist working in R&D is the link between research and industrial-scale chemical engineering. Their role is to utilize their broad chemical knowledge to build upon and develop new chemical processes to be used on an industrial scale. They can be considered the "prototypers" of new products, developing novel, small scale chemical reactions into pilot plants with many orders of magnitude higher throughput - which are then given to process engineers to optimise and make economically viable.

ROLES OF A CHEMICAL ENGINEER

ANALYTICAL CONSULTANT

ABOUT THE ROLE

The role of an analytical consultant is to utilize the scientific method, experimental design, as well as mathematical and statistical modelling in order to make evidence-driven decisions for clients.

A typical project for an analytical consultant would be for a client to approach them with a specific question, whether it be operations related (such as, whether our company should expand its production, and where) or marketing related (what would be the optimal timing and location of our new product release). Then the consultant would work closely with the client, building up data and a model to achieve a final product over the span of a few to many months. Being an analytical consultant is a non-traditional role for a chemical engineer - working in this field is unlike many of the other roles listed in our handbook, as it does not directly utilize normal chemical engineering skills.

In fact, as an analytical consultant one would rarely ever be working on a traditional manufacturing or chemical industry project. However, chemical engineers are in high demand as analytical consultants for their grounding in the scientific, evidence-driven approach, and for their highly adaptable problem solving skills.

Potential Employers and Industries

- Banks and various financial institutions such as Commonwealth Bank
- Consultancy companies such as Deloitte and PwC

Required Skills

- Strong interpersonal skills, a key aspect of this job is interacting with your client to extract information
- Varied and adaptable problem solving skills, the primary aspect of this profession is solving problems of many different kinds
- A passion for solving problems, as that is the core of this role, one must enjoy doing so
- Data collection and management skills
- A solid understanding of mathematical concepts, in order to model your data to provide evidence

WORKING AT A START UP

What is a start-up? A start-up is a newly formed business which generally aims to develop a new product or service. These are often niche or emerging and may be classified as a risky product that larger corporations are not willing to explore. They are often characterised by the early beginnings of a company whose activities may be focussed on pitching to investors to gather capital or funding, developing project plans and prototypes as well as gaining approval for various operations. Once a company has reached a sizable capacity in terms of employees, revenue, activities and/or are listed on the stock exchange for the public they may no longer be considered to be in the start-up stages.

In this age of emerging technology, start-ups are becoming increasingly common. Between the 2021 to 2022 financial year in Australia alone, approximately 470,000 new enterprises entered the Australian economy. While the number of new enterprises is not indicative of how many succeed, it is undoubtedly part of the future. Nowadays, there are many resources or organisations who work to promote start-ups which has reduced the barrier of entry for many into the start-up sphere.

START-UPS VS ESTABLISHED COMPANIES

In this section, an established company will be defined as a company with a longstanding existing track-record that is self-sustaining. There are many reasons people choose to work at a start-up over an established company. While this may vary depending on an individual's personal goals and motivations, some key reasons may include:

Relevancy, personal-interest and growth:

If you are interested in entering a specific or emerging technology, there may be limited roles available in established companies. This is especially the case for new technology which tend to be riskier investments. Furthermore, technology landscape changes so fast in a startup that you end up being in a state of continual learning and growth.

Increased level of ownership and control over your role in the company

In a smaller company, it may be easier to try out new roles or new responsibilities simply through requesting and due to there being fewer workers. While this is also often the case in larger companies, you may find more responsibilities placed on yourself in a smaller one. There is also generally a clearer, oftentimes more tangible, connection between the work you do and the success of the company

Work culture

You will likely be working with people who have similar goals, attitude, passions and missions as you. Start-ups also naturally position employees to be challenged and generally cultivate a learning and growth rich environment. Mistakes and failures are expected and you can witness the iterative changes of a company over time.

Creativity and Flexibility

Start-ups often deviate from generic products in order to access a unique market. As a result, you may be working with new items you would not have the same exposure to in an established business.

Although there are positive aspects, in order to make an informed decision, it is also important to consider the risks of entering start-ups. These risks may include:

Entry and Exit

Depending on your working arrangement and the stage that the company is in, remuneration and job security might vary from established companies. Having an appropriate entry and exit plan and understanding how it fits with your own life may be necessary. Furthermore, if you are in a niche position, it may be hard to find someone to replace you and you may also feel obligated to remain in the company even if you have outgrown the work.

Organisation

Start-ups, especially in their early stages can be chaotically organised. If you are a graduate, your day-to-day may be more variable and milestones may not be as well-defined as in a graduate program.

Responsibilities

Depending on the stage the start-up is in, roles may not be well-defined and will instead become clearer with time. As a result of this, you may also have to take on responsibilities outside of what you are familiar with. Furthermore, in a smaller company, your individual performance may have a greater effect on company outcomes. This is a good opportunity for you to have a significant contribution to the company's success but can also be a source of stress.

Lack of Existing Resources

Unlike established companies, start-ups will have a smaller archive of information to look back on or fewer resources to access. There will be fewer precedents in presenting reports, pitching and applications for grants as well. However, this is also a fantastic opportunity for some primary research and experience.

Ultimately, everything is dependent on the particular start-up and this is not an exhaustive list of items to consider. To gain a full understanding, it would be best to do some personal research as well.

HOW IS ENGINEERING RELEVANT IN START-UPS?

Depending on the business model or product of a start-up certain engineering fields may be more relevant (e.g. Chemical Engineering in membranes and water) however for all start-ups, having an engineer on board can be a key asset. Engineers possess a range of transferable skills learned from both academia and industry experience including problem solving, project management, analysis, communication as well as technical skills depending on the specific field of engineering. Engineers also play a pivotal role in the research and identification of new business challenges.

Younger engineers may not have as much technical experience when compared to older people in industry. However, younger engineers possess the time to learn and grow with an emerging industry. They may offer unconventional insights and solutions into existing problems and will eventually grow into the main workforce over time. While you can learn the technical components with time, the correct attitude and communication skills are most valuable.

ADVICE FOR PEOPLE WANTING TO ENTER THE START-UP SPHERE

- Weigh out all the pros and cons for your own personal situation for both entering a start-up or an established companies.
- Seek out start-ups which have a clear mission / product that you are interested in and which can afford to have and support additional workers.
- Understand the personal value you can bring to the company as well as what you wish to get out of the company. This can help you develop a pitch for yourself.. While this applies to all job applications, due to limited resources and a tighter community, start-ups may be more selective with who joins their team.
- All employers tend to value passion and evidence of your engagement, so partake in extracurricular programs you are interested in and then when the time comes, you can include them in your CV or cover letter.
- While technical skills may be learned or taught, attitude is something that is not. Ensure you approach any job with a growth mindset and attitude and this can help put you in a competitive position.
- Doing programs or taking courses outside of university can help you gain a broader scope of knowledge. For example, taking a free business course alongside your engineering degree might help you develop an entrepreneurial mindset.

- Networking plays a huge role in hearing about opportunities and securing jobs. This also includes startups so take advantage of all the networking events offered by societies such as CEUS or organisations such as UNSW Founders and/or Fishburners. Events offered by Engineers Australia may also be another way to network and find opportunities

- Going to general careers fairs can also be good to have a look at established companies. For example, “The Big Meet” is a huge careers expo free to attend with hundreds of companies all recruiting for graduates or internships.

RESOURCES

- UNSW Founders is a community that provides resources, workshops and accelerator programs. They offer opportunities for you to learn or develop your entrepreneurial skills as well as accelerator programs for those eager to generate a personal start-up.

- There are start-up hubs in Sydney including the Sydney Start-up Hub and Fishburners which provide offices for people to use in their start-up journey. They also host events which are sometimes open to public to attend and are often start-up focussed.

- Email-blasts / newsletters from relevant organisation (e.g. CEUS’ opportunities board, CERS' Newsletters, Sarah Grundy's email blasts)

- UNSWConnect https://unswconnect.unsw.edu.au/ is another resource with job listings that might not be visible on regular job search sites

Many people choose to enter start-ups and remain because they find a passion and purpose in it while others may choose to leave as it no longer serves their mission. There is no right or wrong answer. Responsibly understanding your obligations but also your own goals in life will be pivotal in any career path. Good luck!

Disclaimer:

This section simplys provides a small glimpse into start-ups and why you might consider working at one. The experience of an individual at a start-up can vary significantly so make sure to do your own due diligence.

CHEMICAL ENGINEERING UNDERGRADUATE SOCIETY

SECTION 2: JOB APPLICATION

JUNE 2023 ISSUE 6

UNSW CAREERS AND EMPLOYMENT

JOB APPLICATION

The job market today is very competitive and if you want to stand out to potential employers, you will need to market yourself effectively through the application process. If you want to feel more confident about applying for a job, here you will find great tips and examples on each stage of the process. You can even take workshops and book individual consultations.

The following information has been republished with permission from UNSW Careers and Employment. For more information and resources visit:

https://student.unsw.edu.au/careers

CEUS also has an opportunity board which features opportunities and events for chemical engineering students specifically:

https://trello.com/b/o1pcnodF/ceus-opportunities-board

COVER LETTER

A cover letter is often the first part of your application that an employer will read. It provides an opportunity to make a memorable first impression on employers and can significantly impact their decision-making process.

What is a cover letter?

A cover letter is a one-page, tailored letter articulating one's suitability for a position in an organisation. It is submitted with a resume to further personalise your application by describing not only your experience and skills, but also your motivation for applying and how you would fit into the organisation's culture and share their values.

Example Cover Letter

Jack Precious
81 Stanton Street, Surry Hills, NSW 2010
Mob: 04** 123 10
jprecious@gmail.com
date

Company Name
Company Address

Dear Recruitment Team/Dear Mr Jones/Dear HR Manager,

I am writing to you to express my interest in the role that has been advertised for the 2019 Industry experience program, as well as my interest pursuing a career in the water treatment industry, particularly, I am eager to learn more about the innovation and technology behind wastewater treatment and producing safe drinking water. I am that I confident that I have the ability, innovation skills and experience that are required to undertake the program and successfully fill this position. Currently, I am studying a Bachelor of Chemical Engineering at UNSW, and am in my third and penultimate year of study.

Throughout my studies in chemical engineering, I have undertaken group projects that have required teamwork, communication, with the addition of having a drive to complete set projects. Such projects include the 'Wastewater Management', in which my role involved conceptualizing plant designs and methods, as well as research in chemical and medical technologies to obtain information to reduce a wineries wastewater. From this I have also gained a significant amount of knowledge and expertise in technical drawing, flow charts, material selection and chemical processes that have all required high attention to detail.

From 2017, I have gained a significant amount of leadership skills through my time as a manager at West Leagues Hotel, Sydney. This role has involved overseeing occurrences throughout the work place and providing leadership through staff operations, and further gaining excelling communication skills. Furthermore, I have gained organisation skills through planning functions to give the best experience of patrons, as well as completing audit reports.

From the above, I believe to carry the following attributes that I would be honoured to deliver to your team:

- Experience in a laboratory environment involving chemical engineering principles,
- Time management and preparation to complete tasks in a set timeframe,
- Teamwork and Leadership skills to communicate well within projects,
- Professional manner and presentation both over the phone and in person,
- Creative and Critical thinking in order to solve problems and thinking outside the box,
- Mathematically organised to solve advanced numeric problems,
- Computer skills (Basic Programming, Excel, PowerPoint, Word, CAD, Flow Chart design),
- Attention to detail in order to identify complexities that will allow me to oversee the smallest to largest of mistakes to avoid failure,
- Adaptability and Flexibility to be open minded to the diversity of tasks that my role will consist of.

In conclusion, I believe my experience in teamwork activities and management combined with my passion for teamwork, assisting others and undertaking a challenging, yet exciting role with a passion for hard work and a determined personality would make me an ideal candidate for your organisation.

I look forward to hearing from you.

Yours Sincerely,

Jack Precious

Steps to Writing an Effective Cover Letter

Analyse the job advertisement
Tailor your letter to the requirements of the organisation – do not send the same letter to every company! To prepare your letter, make notes on the job's selection criteria and examples of how you meet them.

Find out as much as possible about the company and the role
Research the organisation's products and services, current/recent projects, new initiatives, awards or achievements, values and culture.

State your potential contribution to the organisation that will meet their needs
Identify what needs the organisation may have and/or how you could potentially contribute to their future success.

Address your cover letter to a person
If the advertisement includes the name of someone to write to, make sure you spell that person's name correctly! For advertisements without a name, you should contact the company and ask for a name. If you cannot get the person's name, your greeting should be "Dear Sir / Madam or Dear Recruitment Manager or HR Manager", with "Yours faithfully" to sign off.

Grab and keep the reader's attention
FIRST PARAGRAPH: State what attracts you to the company and/or industry and/or role.
MIDDLE PARAGRAPHS: Briefly outline how you meet the role's selection criteria by referring to your experience. Use relevant examples drawn from your work history, studies and/or extracurricular activities. Ensure that you address at least three to five key criteria.
FINAL PARAGRAPH: Provide a brief summary, thank the reader, state your expectations. Use succinct sales pitch or marketing brochure language. Describe the benefits you offer rather than lengthy explanations.

Value your skills and experience
It is important that you enthusiastically describe your skills and experience. Employers want to get an idea of who you are as a person!

Format your letter effectively (it should be ONE PAGE ONLY)
Allow plenty of white space at the left and right-hand margins. Use easy-to-read fonts such as Arial or Calibri in size 10.5 or 11 and keep the font and font size consistent between your resume and cover letter.

Check your spelling and grammar
Mistakes show poor attention to detail. Do not rely entirely on your word processor's spelling and grammar checker (especially with Australian vs. US spelling).

Manage your time effectively
Writing a good cover letter can be time consuming, and application closing dates can fall around exam times or assignment due dates. When applying through an online portal or via e-mail, aim to send your application before the closing date.

RESUME

A resume is a short and organised document that gives a summary of a person's work history, education, skills, and accomplishments. It's a snapshot of their qualifications and achievements, created to show why they are a good fit for a job. Your resume should match your skills and experience to the needs of the position/organisation.

Personal Details

You can include your personal details in two lines. Only the most important contact details should be provided including: name, address, telephone and email.

Employment history (or professional history/background)

Describe your general role, achievements within the role, projects undertaken, skills used and responsibilities in this section.

Use detailed, concrete description, including:

- Skills, equipment, knowledge, procedures used.
- The scope of your activities. (e.g. how many, how long, to what degree, what percentage etc.).
- How did your achievement in this role contribute the the department's or organisation's success?

Objective

There are at least 4 uses for the objective:

- To align your values and purpose to the values and purpose of the company and the job,
- To explain any confusing discrepancies in your resume,
- To inform recruiters as to what type of position and company you are seeking,
- To capture the imagination of the reader (good way to stand out!)

Education

Tailor this section to the job you are applying for. Don't just repeat your transcripts. Highlight particular knowledge and/or skills gained in the course that are **relevant** to the job. You could also highlight any relevant research projects, thesis topics or even applied projects.

Many graduate employers are interested in your academic achievement at university. Highlight any achievements such as: awards, prizes, good results or high average grade point, even consistently good grades as this shows consistent quality and effort.

Include non-university educational qualifications here, such as technical courses or other TAFE or community education activities. This helps to display your **range** of skills and you motivation to learn **practical skills**.

Achievements

Try not to use only high school achievements.
If listing scholarships and other awards, show what criteria the award was based upon.

Skills (or key competencies or core competencies)

Select **approximately 6** of the most important skill areas for the job and detail your professional and transferable skills/knowledge and any relevant personal qualities.

Ensure that any claims to skills are supported somewhere on the resume. Employers should be able to see, from other sections in your resume such as employment history, education, or extra curricula activities, where you have gained each of the skills and how you used them.

Give clear, detailed and accurate descriptions of your skills here as it often creates an impression of what you can do.

Professional memberships (or professional associations/qualifications)

This section demonstrates your interest in continuing professional education. It can also be used to demonstrate that you have the appropriate qualifications to allow you to practice your profession in the state and the country.

You may wish to include any details of professional status or qualification you have received. Include dates and any ongoing professional education activities you have undertaken with the association.

Other details

Make it interesting! What type of person would you want to work with?
Use this section to help complete your image on paper.
You can also use this section to include other personal details that don't fit easily anywhere else. For example, you could include details of your work visa status if it was important to the job you are currently applying for.

Referees

You do not have to list referees, unless requested by the employer.
Usually at least two current employment (within the last two years) and one academic referee are expected when referees are requested.
Always ask whether your referees are prepared to act as your referee and, if possible, give them some details about the position you are applying for.

TOP TIP: BE SUCCINCT

Your resume will only be looked at for around 30 seconds so aim for 1 - 2 pages max.

Example Resume

Jack Precious

0402 123 105| jprecious@gmail.com | linkedin.com/in/jprecious | Surry Hills NSW

CAREER PROFILE

- Seeking to gain an engineering role, which will allow me to apply all problem-solving skills and teamwork experience learnt, into a practical field that is challenging, interesting and innovative.
- Third year, distinction average Bachelor of Chemical Engineering student
- Leadership applied through management at West Leagues Hotel, Sydney
- Effective communicating skills through 4 years experience in customer service and sales positions.
- Teamwork built from 2 years in hospitality through communicating with colleagues in bar and function work at Macleay Hotel, Sydney

EDUCATION

Bachelor of Chemical Engineering 2017 expected 2020
UNSW Sydney

Distinction average | WAM: 80

High School Certificate 2011-2016 **"example" High School**

Chemistry, Physics, Extension Mathematics, Advanced English, Engineering Studies | ATAR: 95

RELEVANT PROJECTS/EXPERIENCE

Chemical Engineering Lab, UNSW Sydney July 2018 – Present

- Carried out experimental work and analysed data in order to solve complex engineering problems
- Used industry-based units to understand the physical concepts behind rigorous process operations
- Completed written reports about experimental findings and methodology to improving process efficiency

Minimising Waste Water Aug 2017 – Oct 2017
Process Engineering Design, UNSW Sydney

- Organised production flow sheet diagrams that analysed the process of preventing winery wastage
- Calculated Mass and Energy Balances to ensure system was not damaged and processes ran smoothly
- Suggested methods of using waste water for beneficial environmental and societal use
- Awarded a high distinction mark of 87 in this project

Energy Storage for Sustainable Transport March 2017 – June 2017
Engineering Design and Innovation, UNSW Sydney

- Conceptualised battery designs and compositions that would power a small motor
- Worked in a team of 8 to collaborate ideas in order to accomplish an optimal result
- Researched information to construct a prime battery and obtain exact amounts of chemical species

EMPLOYMENT

Duty Management Sept 2017 - Present
West Leagues Hotel, Sydney

- Directed staff ensuring teamwork, service to customers and maintaining a healthy work environment following work guidelines
- Handled large amounts of money through safe balancing, dispatching funds to and from armaguard, cash drops and till operations
- Completed reports on stock, staff, payroll and spend that were addressed to higher management

Example Resume cont.

Food and Beverages Feb 2017 – Present
Macleay Hotel, Sydney

- Served food and beverages, while under pressure from large numbers of customers.
- Communicated with fellow colleagues to ensure processes were being completed accurately and adequately. (Smooth running of customer service, Clearing dining areas, Keeping a clean bar,)
- Ensured legal processes were followed in understanding not to serve intoxication patrons or those under the legal age of 18.

Retail Assistant
Best & Less, Miranda Dec 2013 – Sept 2015

- Provided customer service to ensure a satisfactory shopping experience for each individual
- Operated a register for cash, cheque and credit card transactions with 100% accuracy
- Stocked and replenished merchandise according to store layouts.
- Alerted customers on upcoming sales, events and promotions
- Educated customers about brands to excite them about the companies mission and values.

EXTRACURRICULAR INVOLVEMENT

White Ribbon Ambassador 2015 - 2017
Woolooware High School

- Visited local schools to educate students on the importance on respect and neglecting violence
- Created video presentations that were presented at awards to encourage support for lowering domestic violence
- Worked closely with the principal to develop new ideas that would promote anti-violence across society

Flourish Mentoring Program April 2016 – July 2016

- Gathered with students and mentors weekly to organise group study habits and teamwork activities
- Discussed the importance of life decisions with mentors and choosing the correct paths

TECHNICAL SKILLS

- VBA Coding – utilised excel through university courses to arrange and organise data for projects
- Computer Aided Design – Basic understanding in using CAD systems to design 3D models
- Microsoft Office Suite – organised spreadsheets for multiple uses including financial data, business profits and data analysis

INTERESTS

- Music Production – Produced for 3 years
- Italian language – intermediate level

REFEREES

AVAILABLE UPON REQUEST

INTERVIEWS

A job interview is a two-way process. For the employer, it is the opportunity to discuss your application, your ability to meet the role's requirements, what motivates you and whether you will fit in with the team and organisation as a whole.

For you, it is the opportunity to convince the employer of your potential by expanding on the information in your application. You can also use this opportunity to find out more about the job and the company and decide whether or not it fits with your career plans

Preparation is essential to maximise your chance of success. The more prepared you are, the easier it will be to cope with your nerves and fully answer their questions.

Steps to Prepare for an Interview

1

Research the company

Congratulations on getting an interview! Now it's time to obtain critical information that you can take with you into the interview to make you stand out as having a genuine interest in the company and industry.

Examples can include: Specific short term and long term goals of a company, increase in their profits over the years, how their products are developed etc.

2

Gain knowledge on previous interviews for that company

Think of it like a past paper! Look at websites like 'Glassdoor.com.au' that allow job applicants to share their experience of the application process. This will give you a head-start in preparing your responses to questions and give you tips on what the company is looking for.

3

Prepare how you are going to look

Yes, first impressions do count! Some companies specify their dress-code, whether it be smart casual all the way up to formal. Make sure you dress according to these specifications as it shows your commitment.

4

Know the person interviewing you

While sometimes this information won't be available to you, it is important to find out if you can. Remember, they are human too. Knowing their role in the company, their achievements, challenges they have faced and how they got to where they are, will help you build a friendly relationship with them. It will allow them to see your ambition in working your way up the hierarchy, your cooperation in a team and your range of communication skills. Think of it like a date… The more interested you are in the person, the more likely you are to hear back from them.

5

Know your worth

Be confident about your skills, work history, references etc. The employer will ask many questions based on your history, and the more confidently you can link your answers to your skills and experience, the better your answer will be. Make sure you have references that will be able to reflect on all your skills and accomplishments. Being able to recall your skills shows your individuality, and more importantly that you have something to offer.

Most importantly, be yourself! Don't try too hard to put on a show for your potential employer. Stay as calm as possible, and answer all their questions like anyone who you have just met is asking you. Be polite, ask questions and remember, its okay to said "I don't know", you aren't a thesaurus.

6

Have everything ready the night before

Rushing to be on time or arriving late to the interview will stress you out and make a bad first impression. Have your outfit out and ironed and your bag packed with anything you need (relevant documents, travel card, computer and charger and a comfort snack.

Know what to expect in the interview

Be prepared for a call from your potential employer at any time. Answer the call in a professional manner and try to find out as much about the interview as possible. Employers may be evaluating your level of professionalism, language skill and interest in the position from your very first contact.

Some sample questions to ask a contact officer include:

- What are the names and job titles of the selection committee members?
- What format will the interview take?
- Will I be required to perform any tasks during the interview (eg. presentation, case study)?
- How long is the interview likely to be?
- Am I required to bring anything to the interview?

Predict interview questions

A useful approach is to write out likely questions, based on the selection criteria and role descriptions. Sample questions include:

Introductory/ Background

- Tell me about yourself.
- What are your strengths and weaknesses?
- Is there an achievement of which you are particularly proud? What is it and why is it significant?

Objectives

- What are your long term and short term goals and objectives? How are you preparing yourself to achieve them?
- What do you see yourself doing 5 years from now?

Job interests

- What motivated you to apply for this position?
- What do you understand about the work this role entails?

Your contribution to the organisation

- In what ways do you think you can make a contribution to our company?
- What others skills would you like to develop in the future?

Education

- What led you to choose your field or major of study?
- What courses have you taken that prepared you for this position?
- What do you like about your discipline of study?

Work experience

- What type of work experience have you had and how do you feel that it has helped prepare you for a graduate position?
- Most jobs have their frustrations and problems. Describe some that have been particularly dissatisfying to you.

Approach to work

- How do you balance work priorities and those of your personal and family life?
- Give me an example of when you had to work to an important deadline. What did you do to ensure that the deadline was met?

Communication

- Have you ever had to persuade people to your way of thinking?
- Describe a situation when you had to explain a difficult concept to someone. Tell me about your approach. How do you know they understood?

Problem solving / analytical skills	Teamwork / leadership
• Tell me about a time when, despite careful planning, things got out of hand. • How would you deal with a problem you had not encountered before? • Tell me of a time when you generated a creative solution to a problem.	• Have you been in any situations where you have been required to perform as part of a team? What was the situation, what part did you play in the team and what was the outcome of the exercise? • Can you describe a time when your team fell apart. What was your role in the outcome? • What kind of people do you find difficult to work with? Why?

Prepare and practise responses

When preparing responses use: a one-sentence summary answer, key points with keywords to spark your memory in the interview, and an example which demonstrates your point. Having a clear structure when you answer questions will demonstrate your ability to think and communicate in a clear and analytical manner.

A good methodology for answering interview questions is the **STAR approach - situation, task, action and response.** What was the situation, what tasks were you responsible for, what actions did you take and what was the overall outcome of it?

Prepare questions to ask the interviewer

Ask questions to show your interest in the direction and the success of the organisation and **HOW** your contribution can add value. Your questions should demonstrate a clear and up-to-date understanding of the role and of the organisation's strategic goals and directions.

- Why is this position open?
- How is performance measured? (Goals should be clearly defined so measurements have some objectivity.)
- Are there opportunities that are unique to this job within the organisation?

Take appropriate documents

In order to feel confident and well prepared you may wish to take the following documents to an interview:

- Spare copies of your resume and application
- Your planned answers to predicted questions
- Academic transcripts
- Written references
- Copy of the original job advertisement

Interview DO's

- Dress appropriately. Look neat and clean.
- Be punctual. Make sure that you are 10 minutes early and if you are going to be unavoidably detained ring and let them know.
- Express yourself and your views clearly.
- Listen carefully to the questions and answer clearly and thoughtfully.
- Make eye-contact. Remember to talk to the person (not the top right hand corner of the room or at their shoes).
- Make sure you fully understand the question and query any point about which you may be doubtful.
- If you are being interviewed by a panel, ensure that you direct your answer to the person who asked the question, while still including the other interviewers by making brief eye contact.
- Show enthusiasm for the company and the position.
- Make sure that you always present your skills in a positive light. Even when describing your weaknesses you should always show them what you are doing to rectify it.

Interview DON'T's

- Don't dress too casually or look untidy.
- Don't make derogatory remarks about past or present employers.
- Don't fidget or twitch, try to control other nervous mannerisms.
- Conversely, don't sit there like a statue. If you feel more comfortable talking with the aid of your hands for emphasis, then use them, but try not to be too excessive in your gestures.
- Don't interrupt the interviewer before they have finished asking you a question and never finish their sentences for them.
- Don't Lie. If you have to lie about what you are like or your abilities in order to obtain the job, you are likely to find yourself in a position that you don't really like and probably one in which you will have problems fulfilling successfully.
- Don't worry if you answer one question badly. Treat each question individually. Remember that if you mess up the second question but answer the next 15 brilliantly they won't place much emphasis on the second question putting your poor answer down to nerves. If however, you get so caught up in chastising yourself for making a mistake, you will continue to make mistakes, have more problems thinking about your answer and finish feeling extremely anxious and knowing that you made a mess of the interview.
- Don't talk about salary, holidays or bonuses unless they bring them up.
- Don't answer questions with a simple "yes" or "no". Make sure that you explain your reasoning fully.
- Don't wear too much perfume or aftershave.
- Don't smoke even if invited to do so.

NETWORKING

The ability to network effectively is vital to professional success in a variety of industries, including Chemical Engineering. It involves interacting with people with common professional interests, usually in an informal setting, and is a critical competency in building a strong and expansive network and gaining insider information on job openings and movement inside the company. Networking is a huge contributing factor in professional growth, and with engineering projects becoming more complex and multi-disciplinary, soft skills such as communication that are integral to networking are become even more crucial for success.

What is CEUS' Involvement with Networking?

CEUS holds several industry events each year that are designed to help students learn about different careers and industries, giving opportunities to undergraduate students to gain insight into potential careers options. This is designed to help students make connections with industry representatives such that they can fulfil the 60 day industrial training requirement for Engineer's Australia Accreditation. Thus, developing one's networking skills is essential in helping to secure placements with different companies.

What types of networks can I have?

Students, Tutors, Supervisors, Lecturers and Academics

These groups are a large part of your network throughout university life. Your peers and teachers alike may be able to provide you with insight and opportunities into the career you want to pursue - hence, staying connected to these circles is not only useful in a social sense, but also in an educational sense as well. Great places to meet people include classroom environments, clubs, societies, faculty activities, mentoring events and communal spaces; along with social platforms such as university discussion chats and CEUS year group pages.

LinkedIn Network

Developing a professional, online profile on platforms such as LinkedIn is becoming increasingly useful in developing and sustaining a network of connections and contacts in your field, providing niche insight into networking and career opportunities that may not be widely advertised. LinkedIn profiles are used to display your resume, search for jobs and enhance professional reputation by posting updates and interacting with your network. For more information on LinkedIn, see the last page of this section.

Industry Representatives

Attending networking events is a very effective way to connect with people from a variety of industries and expand your network. Industry Representatives, businesspeople, entrepreneurs, and employers within your field often meet at these events to share information, recruit employees, and alike yourself, build professional relationships in expanding their own professional network. CEUS' annual Industry Night, Speed Networking Night and other industry events throughout the year are all environments that allow university students to expand their network.

How to make a good impression on Industry Representatives

What to do before a Networking Event

Before attending an industry event, it is extremely important to do your homework. This involves familiarising yourself with companies in attendance (or if there are many, those that you are interested in), so you are aware of any major projects they are undertaking, the industry issues they are aiming to solve, and how your experiences may relate to these or what you would like to learn more about. This will help give you a point of conversation with representatives. Following multiple companies on social media platforms, subscribing to industry newsletters and gaining information from other members of your network can help you achieve this.

Attire

It is very important to wear appropriate clothing for an industry event, as it indicates professionalism, respect, whilst also giving you a sense of confidence in putting yourself in a work frame of mind. Industry events generally call for business attire, similar to that of a job interview.

Body Language

Body language is equally important as verbal communication in expressing and conveying information- and can include things as simple as eye-movement, facial expression and posture. When conversing with an industry representative, develop a confident smile and offer a firm handshake. Acting interested throughout your conversation with them can be achieved through maintaining eye contact and using subtle gestures such as moving your fingers when conveying ideas are signs of openness, honesty and engagement.

Conversation Starters

Approaching an industry representative can be daunting, hence having a conversation starter prepared beforehand can be useful. Here is a list of conversation starters that you could use for your next Industry Event. You are best to start off with introducing yourself (a basic example is given below) followed by examples of what you could continue with.

Starting Line: Hello, nice to meet you! My name is [insert name] and I am a Chemical Engineering student at UNSW.

- I was wondering if you could give me some insight into the nature of the company you work for, and what you are intending to get out of today's event?
- How did you hear about this event?
- What did you think of that speech/presentation? I thought it was very well said. Did you get anything out of it? (Use this if a speech/presentation was delivered)
- What industry do you work in? What skills do your employees emphasise in your profession? As a Chemical Engineer I was wondering how the knowledge I have gathered in my own degree could be used in a potential job in the future.
- You must be the representative from [insert name of company]! (Acting like you know who they are prior to speaking to them can be flattering and give them further incentive to want to get to know you and answer any questions you may have). I have heard that [insert information that you have gathered prior to event about industry/company], Would you be able to tell me more about it/your involvement in this project?

It might be useful to also prepare an elevator speech. This can include your degree, what you are interested in doing in the future etc. You can round up by including something about your future career goals and the results you aim to achieve from the interaction (such as you aim to learn something about the company, or learn about a particular project).

Maintaining the Conversation - questions to ask an Industry Representative

If the conversation starter is successful, maintaining the conversation is equally as important. Often, the topics discussed afterwards will stem from the 'icebreaker' that you use, yet if you find yourself drawing a blank halfway through the conversation, here are some follow up questions you can use.

- What would make someone the ideal employee at your company?
- How has your company changed over time in meeting the demands of a changing market? (You could also ask about the changes that may have been made in response to COVID, if any)
- What are your companies' overall goals for this year?
- What are the values of your company? How do employees embody these values?
- What is the company culture? Is it very collaborative or do people work independently?
- What do you enjoy the most and the least about your job?
- What advice would you have liked to have heard when you were my age/in my position?
- What are the three top skills you have found to be most essential for success?

ASSESSMENT CENTRES

The term 'Assessment Centre' does not refer to a location, but to a process which is being increasingly used by middle to large organisations in Australia and overseas. A typical Assessment Centre incorporates a set of varied exercises which are designed to simulate different aspects of the work environment. These exercises may run from 1/2 to 2 days.

While the process is intensive and commonly viewed as 'stressful' by candidates, it provides additional opportunities for recruits who feel that they are not able to demonstrate their abilities as strongly during an interview. Assessment Centres also enable candidates to obtain a practical idea of what the employer expects from staff, and opportunities to network with other participants during group activities.

How do they work?

The expense of conducting Assessment Centres mostly restricts their use to high volume recruitment such as graduate recruitment. Assessment Centres are usually used after the initial stages of the selection process. It may follow short listing, online assessments and/or an initial interview.

Assessment Centres are highly structured in their design, application and procedures. They may be conducted by external consultants who have invested large amounts of resources into researching and designing Assessment Centres. In other cases, Assessment Centres may be conducted by Human Resources staff. Each Assessment Centre is specifically adapted for the particular position, to assess factors such as level of skills, aptitude and compatibility with organisational culture.

During each activity in an assessment centre, a group of trained observers will rate individual candidates on a range of competencies, using a prescribed performance scale. Results are then compared against the same competencies, which are measured in other activities. On completion, observers meet to discuss the test results and reach a group consensus about each individual's ratings. Observers may be visible during the test, or may review each individual's performance via videotape.

What to expect

At the beginning of the Assessment Centre, candidates will receive an initial briefing about the organisation and the structure of the day.
The most common type of activities include:

- Group activities
- Case Studies
- In Tray exercises
- Technical skills assessments
- Role plays
- Group activities

You cannot study for an Assessment Centre, although it does help if you have some idea of what to expect:

- If you have been given pre reading material prior to the Assessment Centre day - read, prepare and understand what is asked of you.
- Re-familiarise yourself with the job description, duty statement and other background reading material about the organisation. This will provide some clues as to what type of employee they are seeking.
- Get a good night's rest before the big day.
- Arrive early so you do not feel rushed. Perhaps your waiting time in the reception area can provide you with a 'feel' for the environment - i.e. the written material in the reception/waiting area, other candidates you may see.
- Read all instructions carefully. Are all the resources, which are listed on the test instructions available and working?
- Be yourself - bring your own personality and experience to the Assessment Centre.
- Take the exercises seriously - the hypothetical scenarios will require you to 'suspend your belief' and go along with the exercise. They are not designed to match the employer's real life workplace.
- Do not guess what is being measured as this may affect your participation and assessment
- Treat your attendance as a day at the workplace.
- View the Assessment Centre as an opportunity to learn about the employer and the advertised position.
- Consider the process as a positive learning experience.
- Ask for feedback if you were not successful so that you can improve your performance in the future.

PSYCHOMETRIC ASSESSMENTS

There is no test that can tell an employer exactly who is the right candidate for the job, however, psychometric assessments can go a long way to helping organisations choose candidates that are more likely to fit in and perform better. Find out more about psychometric assessments.

In general, psychometric assessments can be broken into 6 broad categories:

- Personality
- Ability - may be general or more specific including Abstract, Verbal and Numerical reasoning tests.
- Aptitude - tend to be job related and often carry names pertaining to a specific aptitude
- Motivation / Values questionnaires
- Interest / Beliefs Inventories
- Integrity Tests

The most commonly used in selection settings are Personality, Ability, Aptitude and Motivation / Values scales, as these are deemed the most useful when trying to predict someone's future level of performance in a particular role or to gauge their likely level of "fit" with the company.

Integrity tests are a relatively recent development that may be used when the situation is deemed to warrant it.

Preparing for Psychometric Assessments

- Remember that psychometric tests are not generally like examinations. There are no right and wrong answers to many "tests" (eg personality scales) although **speed of completion** is a factor in most ability tests so work as fast and accurately as you can.
- Your individual profile is made up from relative strengths and weaknesses and it is from the combination of these results that selection decisions are usually made. Therefore being strong in one area and weaker in another, will not necessarily count against you. You may be exactly what the company is looking for!
- Ask the organisation what type of tests you will be taking (in advance).
- Practice maths mentals, do simple mathematical problems with and without a calculator, brush up on reading and analysing tables and figures, and complete case study examples. Educational publications addressing most of these aspects are available at large newsagents and bookstores.
- Complete practice sets
- Get a good night's sleep beforehand. You are unlikely to perform your best if you are too tired.
- Remain calm – psychometric testing can be a positive experience (particularly if feedback is provided).

Personality Inventories

Personality inventories are designed to assess the relatively stable and enduring characteristics of a person that may affect job performance and work place behaviour.

Examples:

Please chose the option that is most representative of you:
I feel most comfortable being around people who are...
(a) hard-working (b) focussed (c) driven

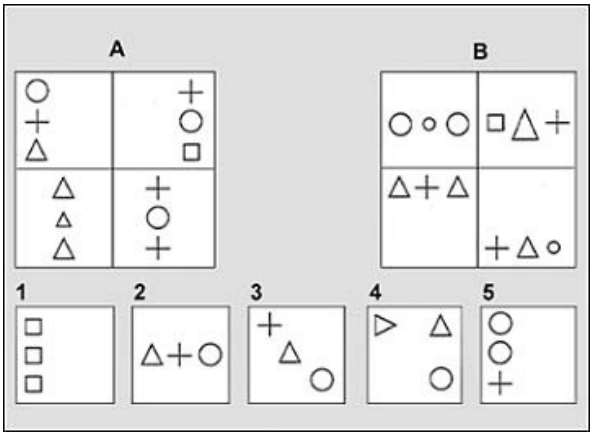
I prefer to take my time when making important decisions?
(a) always (b) often (c) never

I prefer things...
(a) confirmed (b) pencilled in (c) flexible

Procrastination is never a problem for me.
(a)True (b) False

Ability Tests

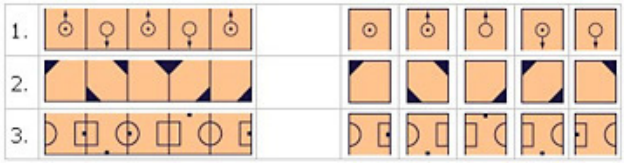
The underlying goal of general ability tests is to assess potential candidates in terms of their overall intellectual potential and build a profile of their individual strengths and weaknesses.



ABSTRACT REASONING
This is a test of skill at finding similarities and differences in groups of patterns.

Examples

- *Indicate whether each pattern in boxes 1-5 belong to Group A, Group B or neither group.*
- *To the right you will see a series of diagrams, each following a logical sequence. Nominate from the options at right, which one logically completes the sequence on the left.*



VERBAL REASONING
This is a test of skill at finding similarities and differences in groups of patterns.

The test consists of a series of short passages of text, each of which includes a number of statements intended to convey information, or persuade the reader of a point of view.

Each passage is accompanied by four statements relating to the information or arguments it contains.

NUMERICAL REASONING
These tests may take a form similar to the verbal reasoning test above, where information is presented in text, graphs, charts etc… followed by statements. You must indicate whether the statements are true or false, or choose between options.

Motivation/values

These questionnaires investigate those aspects of work that hold most importance for you. They are designed to uncover your preferences in terms of work style, environment, desire for development, preferred level of responsibility etc.

Example:

Rate each of the following in terms of their importance to you in performing your work using the following scale:

Not at all important 1 2 3 4 5 Extremely important

Financial reward
Friendly colleagues
Autonomy
Creativity
Career advancement
Interest/belief in work

Interest inventories

Interest inventories seek to gauge and make an assessment on your level of interest or preferences in specific fields or activities as well as your attitude towards work.

Example:

Using the scale below please rate the extent to which you agree or disagree with the following statements.

Strongly Disagree
Disagree
Neither Agree nor Disagree
Agree
Strongly Agree

(a) I would feel like a failure if I could not work in the field I was trained in.
(b) I would move to another state if I got a good job offer.
(c) The approval of others is important in my career choice.
(d) I am determined to learn new skills in order to get the job I want.
(e) There is a perfect job for every person.

Integrity tests

Integrity tests are a specific type of personality assessment used to gauge an individual's honesty, dependability and trustworthiness.

Example

Using the scale below please rate the extent to which you agree or disagree with the following statements:

Strongly Disagree
Disagree
Neither Agree nor Disagree
Agree
Strongly Agree

(a) I sometimes need to ignore minor rules in order to get the job done.
(b) If I were caught stealing I would justify it with a believable story.
(c) It is acceptable to make local phone calls from work but not long distance calls.
(d) Everyone takes small stationery items from the office at some time or another.
(e) A person who takes stationery or small disposable items from work without permission should lose their annual bonus.

LINKEDIN

LinkedIn is a social networking platform designed specifically for the corporate community. The site allows members to establish vast networks of professional industry connections. Individuals are able to utilise LinkedIn for professional networking, connecting and job searching, whilst employers are able to utilise the platform for recruitment and sharing company information and achievements.

As a university student, LinkedIn is particularly beneficial, especially during society networking events. After speaking with various industry representatives at events, you can easily add them to your LinkedIn network, allowing you to stay in touch with them once the event has come to completion.

Getting Started:
It is extremely easy to get started using LinkedIn. Start by signing up for an account using the following link: https://www.linkedin.com/

It is free to sign up for a basic account on LinkedIn. Generally, a basic account offers plenty of features for university students. Alternatively, you may choose to sign up for a premium account, which has an associated cost.

Once you have created your account, it is time to upload a profile photo. When potential employers see your profile, your profile picture acts as a first impression. You want to communicate to the viewer that you are friendly, likeable and trustworthy.

Now you are ready to connect and engage with potential employers in the industry!

MORE INFORMATION

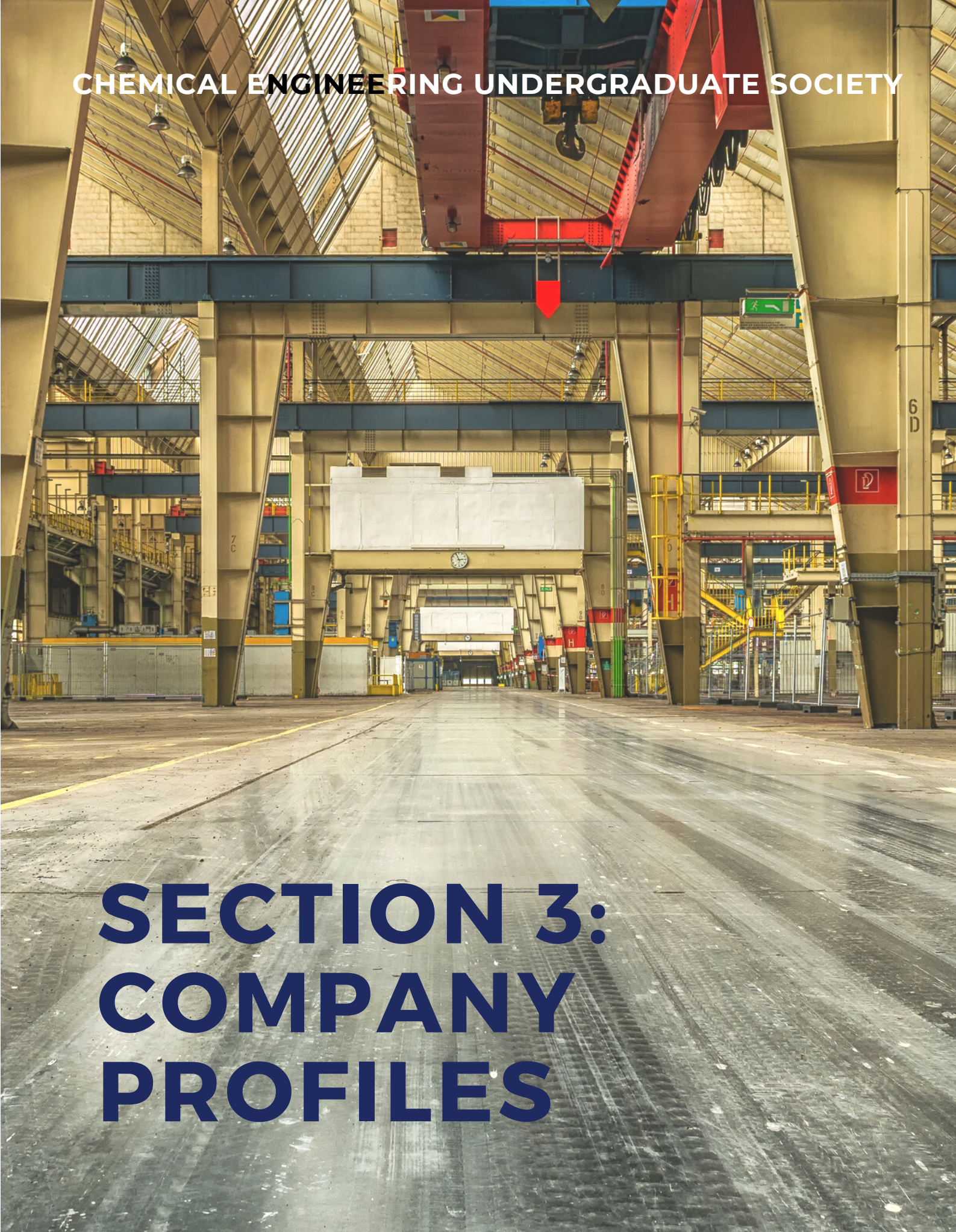
For further assistance with the job application process attend a Careers and Employment seminar or book an individual career advice appointment with a Careers Consultant at:

https://www.unsw.edu.au/employability

For further assistance or industrial training advice, email our School's Industrial Training Coordinator, Sarah Grundy: s.grundy@unsw.edu.au

Follow our LinkedIn at https://www.linkedin.com/company/ceusunsw/

CHEMICAL ENGINEERING UNDERGRADUATE SOCIETY



SECTION 3: COMPANY PROFILES

JUNE 2023 ISSUE 6

UNSW SYDNEY CHEMICAL ENGINEERING

ABOUT THE SCHOOL OF CHEMICAL ENGINEERING

The School of Chemical Engineering at UNSW Australia is well known in the industry as a top provider of quality education and cutting-edge research. Their focus has been and always will be to deliver the best they possibly can to the future of the fields of chemical engineering, industrial chemistry and food science and technology.

They have passionate academics who are eager to share their vast knowledge and experience with students, they are at the forefront of exciting innovations and emerging technologies through a number of international research groups and centres, and their state-of-the-art facilities provide the perfect support for our students.

ROLE OF CHEMICAL ENGINEERS

At UNSW Australia School of Chemical Engineering our researchers are challenging some of the most pressing issues of our time. They are providing ideas and solutions that refine and improve manufacturing processes, introduce smarter, better-performing materials, and address the increasing importance of sustainability in everything we do.

The school's research expertise and priorities range across the following areas:

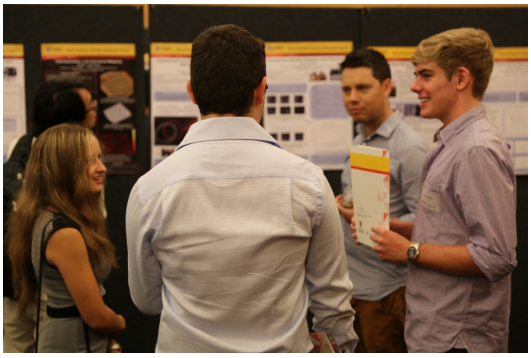
- Energy
- Science and technology
- Food, health and medical science and technology
- Macromolecular and interfacial engineering
- Advanced products and processes
- Environmental technology

EMPLOYMENT AND INVOLVEMENT OPPORTUNITIES

Ranked as one of the top Chemical Engineering Schools in Australia, the School of Chemical Engineering is a leader in fundamental and applied research. With modern facilities, nine research centres and groups working in the areas of Chemical, Food Science and Biomolecular and Process Engineering research, the School of Chemical Engineering is a vibrant environment. The School is at the forefront of today's most exciting technological advancements, offering local and international students the very best research training.

There are a number of opportunities for researchers to join the school.

TASTE OF RESEARCH



The Taste of Research program was set-up by UNSW Engineering to allow undergraduate students to work with a research group to understand what real research is about at university and in industry.

The program gives second and third year students the chance to do a 60 day project with an existing research team within the Faculty and receive a tax exempt allowance of $6000. The program is run part time with full-time uni over Term 2 and 3, or offered full-time over summer.

The program is open to local and international students who meet the following criteria:

- Be a high achieving second or third year undergraduate student enrolled in a full-time program
- Be enrolled in a relevant program at UNSW
- Submit an online application form

UNSW Engineering students may use their Taste of Research Scholarship to contribute towards their industrial training (up to 30 days of non-traditional training).

Each applicant will be assessed on the basis of academic merit, interest in undertaking research activities, and intended career plans.

For more information visit:
https://www.unsw.edu.au/engineering/student-life/undergraduate-research-opportunities/taste-research

POSTGRADUATE RESEARCH

Postgraduate research students undertake research through supervision with some of Australia's leading researchers to produce a thesis or other piece of written or creative work. You can choose from a Doctor of Philosophy (PhD) or Masters Degree by Research.

A PhD requires a minimum of three years full-time study. The Masters by Research program requires a minimum of one to two years full-time study and is designed for students with professional experience wishing to engage in research training but who are not in a position to devote three or more years full-time study required for a PhD.

There are also a number of scholarships available to assist with the expenses involved.

For more information visit:
https://www.unsw.edu.au/engineering/chemical-engineering/study/postgraduate

ABOUT CARLTON & UNITED BREWERIES (CUB)

CUB brews some of Australia's most iconic and loved beers, including Victoria Bitter, Carlton Draught, Great Northern, Pure Blonde, Carlton Dry, Melbourne Bitter, Crown Lager, Cascade Premium Light and the Yak Ales. Our stable of brands includes global premium brands such as Corona, Budweiser, Stella Artois, Beck's, Hoegaarden, Leffe and, our most recent additions, leading craft brands 4 Pines and Pirate Life.

We trace our origins to the mid-nineteenth century when we first brewed Victoria Bitter and even earlier to the Cascade Brewery which was established in 1824 and commenced brewing in Tasmania in 1832. We employ nearly 1,600 people at our five Australian breweries and various offices around Australia. In Australia, CUB is a proud part of the AB InBev family.

THE ROLE OF CHEMICAL ENGINEERING

Chemical engineers at CUB play a variety of roles including:

- Brewing operations
- Manufacturing and logistics
- Sales and strategy

The chemical engineers at CUB are highly valued and generally, have the opportunity to move around and explore other departments and roles in the company. Enabling engineers to continue expanding their knowledge and gain more versatility in there skills.

Many chemical engineers at CUB, start in process operations but later find themselves in roles such as plant management , finance and marketing. The opportunities and growth offered CUB is endless.

.

EMPLOYMENT OPPORTUNITIES

GRADUATE PROGRAMME

CUB offers 'Talent Programs' to university graduates, through which the company fosters growth through early leadership opportunities where you will be empowered to lead real change as you accelerate through the business.
There are three roles that graduates can apply for:

Global Management Trainee:
From brewery operations to sales, you'll master the fundamentals of every department in the company across a 10-month rotational program.

Supply Management Trainee:
Develop the technical skills to brew the beers CUB is famous for across a 12-month functional training program in the Supply function.
Working closely with our senior leaders, you'll also expand your leadership skills by managing hands-on projects centered around technical and practical challenges.

Commercial Management Trainee:
Work on CUB's well-loved brands and impact sales and revenue growth while driving customer engagement across a 12-month functional training program in the Commercial functions.
In this program, you'll experience a mix of formal and experiential learning. You'll start with an in-depth 4-week company induction, then participate in cross-functional commercial projects and also accelerate into your first role in the trade representing Australia's leading brewer and beer brands.

VACATION PROGRAMME

Challenge yourself to dream big with a 10-week summer internship at CUB.

You'll be placed in sales, marketing, supply or support to work on real business projects, engage with senior leaders and deliver tangible results.

At the end of your program, you'll put what you've learnt to the test by delivering your project presentation to senior leadership.

WHY JOIN CUB?

- Demonstrating flexibility and adapting to new environments.
- Setting goals that help you grow.
- Dreaming big.

That's what it means to work at Carlton & United Breweries.

For more information visit:

https://cub.com.au/careers/
https://cub.com.au/careers/talent-programs/
https://cub.com.au/

ABOUT BLUESCOPE

Bluescope is an Australian steelmaking company employing around 14,000 in more than 100 facilities in 17 countries, including New Zealand and North America. The company produces a range of flat products including "Colorbond" and "Zincalume" as well as steel building products and engineered buildings. The largest of the company's operations is the integrated Port Kembla Steelworks located in the Illawarra region. Bluescope holds a diverse portfolio of businesses in some of the fastest growing economies of the world, and a strong balance sheet, which enables strategic flexibility. BlueScope is a global leader in premium branded coated and painted steel products - the third largest manufacturer of painted and coated steel products globally. They have great strengths in engineered steel buildings in key markets and are number one in building and construction markets.

THE ROLE OF CHEMICAL ENGINEERING

Chemical engineers play an integral role in steel production, both in ensuring safe and optimised process operation and product quality. Within steel production, they have diverse and often highly specialised roles and responsibilities to manage various parts of the process. In the integrated steelworks, this ranges from water treatment plants, cooling systems and gas systems for furnaces and other large-scale equipment necessary to produce the required steel from its ore to the final coated product. As they are often concerned with waste gas and water, chemical engineers can also be responsible for meeting environmental regulations and requirements.

Chemical engineers at Bluescope are required to keep up with dynamic day to day plant operations and quickly respond to unexpected problems as they are often the first point of contact for process safety related issues. They are an important aspect of the diverse network of people working together to maintain a safe, inclusive work environment and deliver steel inspired solutions to the community.

EMPLOYMENT OPPORTUNITIES

Bluescope offers a range of cadetships, including chemical engineering. The number of positions available vary depending on the required intake. Cadetships combine full time work and part time study for the duration of your degree. You gain exceptional work experience in your role and financial support to complete your studies.

The first 2 university years are spent at the University of Wollongong completing the first year of a Bachelor of Engineering in Mechanical Engineering part-time, followed by 3 years full time at UNSW completing a Bachelor of Engineering in Chemical Engineering.

WHY BECOME A BLUESCOPE CADET?

- Work for a great company in a great community
- Get paid to study
- Great career opportunities
- Gain invaluable industry experience whilst completing your university degree

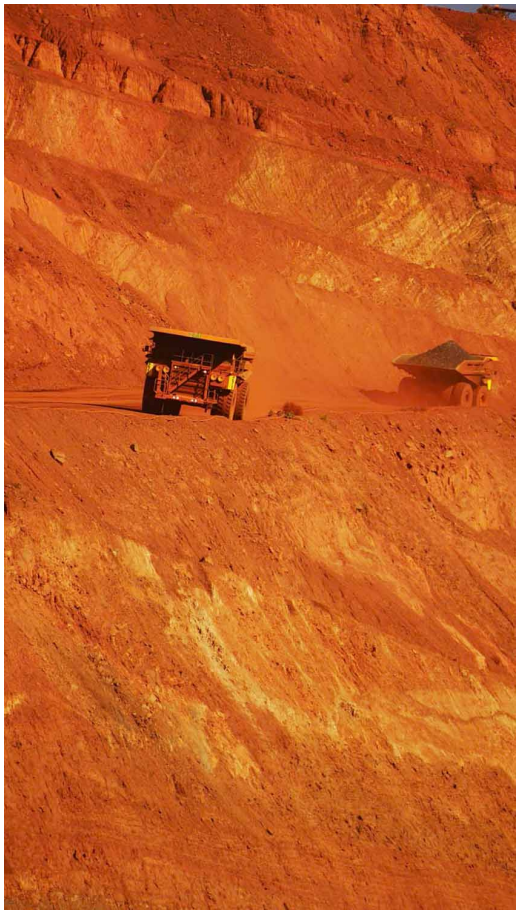
For more information visit:

https://www.bluescope.com/careers
https://www.bluescopeillawarra.com.au/working-at-bluescope/cadets-apprentices/bluescope-illawarra-cadets/

bhpbilliton

ABOUT BHP BILLITON

BHP is a world-leading resources company. They extract and process minerals, oil and gas, with more than 60,000 employees and contractors, primarily in Australia and the Americas. Their products are sold worldwide, with sales and marketing led through Singapore and Houston, United States. Their global headquarters are in Melbourne, Australia. They have a simple and diverse portfolio of tier one assets around the world, with low-cost options for future growth and value creation. Allowing them to apply their values and culture, emphasise safety and productivity, deploy technology and exert capital discipline to extract the most value and the highest returns from their assets.



EMPLOYMENT OPPORTUNITIES

BHP offers internships and graduate positions.

Interns are a penultimate student and start in November working with the company for 10-12 weeks. This is the time to apply all you have learnt in real life situations and use your initiative to seek out projects to showcase your capability.

Do well as an intern and you will go to the front of the queue to receive a graduate job offer.

Graduates start in mid-February joining a global cohort of like-minded graduates who will work on real business problems. As a permanent employee you will start on the global Graduate Program where you will get unprecedented access to senior leaders to mentor and guide your course work.

Their fast paced 18 month program will accelerate your career giving you access to opportunities across commodities and regions. Towards the end of the program the choice is yours to stay in the same commodity or find an opportunity elsewhere in BHP to demonstrate all that you have learnt.

Their Australian intern opportunities for engineering and science will be residential or Fly-In-Fly-Out (FIFO) either way giving you the chance to support and live in a thriving local community. Roles such as Technology, Finance and Supply will support their operations from their city locations, but they are never far from the action.

WHY BHP?

BHP offers you the chance to grow, to think big and make a difference.

You will be a part of a global company who embraces new ideas and new voices to speak up and explore what is possible. Their people are committed to working ways that embrace our charter values of Sustainability, Integrity, Respect, Performance, Simplicity and Accountability.

For more information visit:
https://www.bhp.com/our-approach/work-with-us/graduate-and-student-programs/australia
https://www.bhp.com/

aurecon

Bringing ideas to life

ABOUT AURECON

Aurecon is an engineering and infrastructure advisory company, but not as you know it. We've re-imagined engineering.

Our clients' ideas and aspirations drive all that we do. We work alongside them like no other firm to co-create clever, innovative solutions to some of the world's most complex challenges, adding value across the project lifecycle through deep technical and advisory expertise. We serve our clients across a range of markets, in locations worldwide. Hardwired in our DNA are engineering, design and the deep need to leave a legacy.

Drawing on our deep pool of knowledge, we bring vital engineering experience, technical capability and design expertise to the table. Then we listen deeply and intently. We see the opportunities, possibilities and potential that others don't. Through a range of unique creative processes and skills, we collaborate with our clients to re-imagine, shape and design a better future.

We believe humanity depends on engineering; and we recognise we have a broader stewardship role to play. A deep responsibility to hold. As we continually strive for a life in balance, Aurecon clients will be both future ready and engineered for life.

THE ROLE OF CHEMICAL ENGINEERING

Chemical engineers play a varieties of roles in steel production, utilising skills from process engineering, project design, control engineering and others. At Aurecon, the main positions available for a chemical engineer are in the Manufacturing, Oil & gas, resources, and water sectors. These are the sectors of Aurecon which are actively seeking out new chemical engineers to join their team.

EMPLOYMENT OPPORTUNITIES

GRADUATE PROGRAMME

Aurecon has challenged the traditional approach to graduate programmes, creating an environment where you can pursue your personal career interests, instead of being locked into a rigid rotation schedule where you spend several years in different areas of the company. At Aurecon, you can express your interest in a preferred team, focus on the technical skills you are most interested in, and fast track your experience and development. You will also work alongside industry leading professionals, mentors and peers. If you would like to experience numerous areas of Aurecon's business, we can facilitate that too. We treat our graduates as emerging professionals from day-one. We don't confine you to a development timeframe but rather equip you with skills and provide development opportunities; allowing you to design your career. Bringing ideas to life at Aurecon is about being creative, grabbing new opportunities and getting the support you need to find your niche.

VACATION PROGRAMME

Choosing a career path as an undergraduate can be challenging. While you may have an interest in a particular area, you sometimes don't know which path to follow until you've had some practical work experience. In our vacation programme, you will be placed in a technical field of your choice (where possible) for approximately three months to gain experience in that field and help you decide if it is right for you.
In our vacation programme you can:

- Get a real taste of what it's like to work at Aurecon and in your chosen field of study
- Earn some money during your holidays
- Work on real projects in a supportive environment
- Learn from and partner with experienced professionals and current graduates
- Start building your professional network
- Get a feel for whether a graduate position at Aurecon is right for you

Aurecon's vacation programme coincides with university summer break, so students typically start after their exam period in November/December and work through until university resumes in February/March. At the end of the experience, we give our vacation students structured feedback on their performance to assist in their professional development.

WHY BECOME A PART OF AURECON?

Are you inquisitive – fearless – engaging – resourceful – co-creative – commercial – a sense maker or an unconventional thinker? As a graduate, you will learn from future ready leaders and gain development opportunities and mentors who will invest in you. You will also work on some of the most challenging and complex projects around the world. We believe you should have fun at work and our leaders are working to create teams that have fun – even when they are working on tough and stressful assignments.

For more information visit:
https://www.aurecongroup.com/about/about-aurecon

ABOUT UNILEVER

Unilever is a Multi-national Fast Manufacturing Consumer Goods Company . The company produces goods from sandwich spreads like margarine to toiletries.

THE ROLE OF CHEMICAL ENGINEERING

Chemical engineers have roles in research and development of products and process engineering for manufacture. Chemical engineers have roles associated with supply chain and logistics/planning. Supply chain management (SCM), the management of the flow of goods and services, involves the movement and storage of raw materials, of work-in-process inventory, and of finished goods from point of origin to point of consumption.

Logistics Management deals with the efficient and effective management of day-to-day activity in producing the company's finished goods and services. Logistics is about getting the right product, to the right customer, in the right quantity, in the right condition, at the right place, at the right time, and at the right cost.

EMPLOYMENT OPPORTUNITIES

SUMMER LEADERSHIP INTERNSHIP PROGRAMME

For penultimate year students at university and if you are an Australian/New Zealand Citizen or Australian Permanent Resident. Placements are from 12 weeks in duration over summer starting in December. You will gain hands-on working experience in one of the world's leading consumer goods companies. Internships are available in the following areas:

- Marketing
- Supply Chain
- Research & development
- Customer development
- Finance
- Human resources
- Information technology

WHY JOIN UNILEVER?

Large multi-national company, options to work in other nations. An agile and dynamic workplace, often with flexible working hours and working from home options. A fun and engaging work culture, where you're truly encouraged to be yourself. We have lots of events to bring the whole company and teams together; brand launches, social activities and volunteering opportunities alongside your other colleagues, as well as many ways to contribute to our sustainable living plan beyond your daily job. External study assistance. Staff shop - an unbeatable opportunity to buy Unilever products at really cheap prices. Free ice-cream – at all our offices, all day, everyday.

For more information visit:
https://www.unilever.com.au/careers/graduates/uflp/
https://au.gradconnection.com/employers/unilever/our-internship-program/

ABOUT RESMED

ResMed focuses on building and supporting technology to help people live healthier, happier lives by helping them to sleep better. They are an industry leader in the biomedical engineering field, as they are directly at the intersection of technology and better health research. With a consumer base in over 140 countries, ResMed provides and designs comprehensive out-of-hospital software platforms to support professionals and caregivers who help those with sleep apnea and other sleep related chronic diseases. Their current focus is on improving healthcare delivery and reception in settings outside of the hospital.

THE ROLE OF CHEMICAL ENGINEERING

Chemical engineers have flexible roles. As an engineer with us, you can expect to:

- Contribute to our growth and commitment to producing a world-class product line.
- Deliver on increasingly advanced cost-effective products in order to bring our life-changing devices to more people around the world.
- Enhance and improve the look and feel of our products for patient comfort and safety.
- Contribute to ResMed's success through the development of commercial or embedded software solutions.
- Never stop innovating and identifying opportunities to streamline our processes.

We welcome engineers of all backgrounds, with a preference for flexible and proactive thinkers who are eager to explore new and better ways to help patients.

ResMed

EMPLOYMENT OPPORTUNITIES

ENGINEERING INTERNSHIP PROGRAM

Taking place between November and February, this three-month internship program is open to second-, third-, fourth-, and fifth-year students looking to grow their base of expertise and contribute to our mission of changing lives with every breath. In this program, you'll work in product development or manufacturing, depending on your degree.
The application period usually runs from early march to early April.

GRADUATE PROGRAM

This two-year, mentored development program includes six monthly rotations across areas of the business such as product development, product marketing and manufacturing. The program is designed to expose you to a range of disciplines in a wide variety of business units.

The application period usually runs from early march to early April.

WHY JOIN RESMED?

At ResMed, we believe that there are three key statements that sum up our employees and what we do:

- We are innovative people
- We have extraordinary passion
- We change lives with every breath

We believe that we have built a great company and we will continue to be a leader in the market because we recruit, encourage, invest in and reward our people.
We are critical thinkers and problem solvers. We are relentless in our drive for results. We are intensely curious and always learning. We collaborate and engage with our global team members. Join us on our journey to change lives with every breath. Join the world's premiere tech-driven medical device innovator who's leading the next frontier of connected devices and solutions to reduce costs across the healthcare continuum, improving tens of millions of lives worldwide.

For more information visit:

https://careers.resmed.com/
https://careers.resmed.com/global-locations/australia/programs/

ABOUT PWC

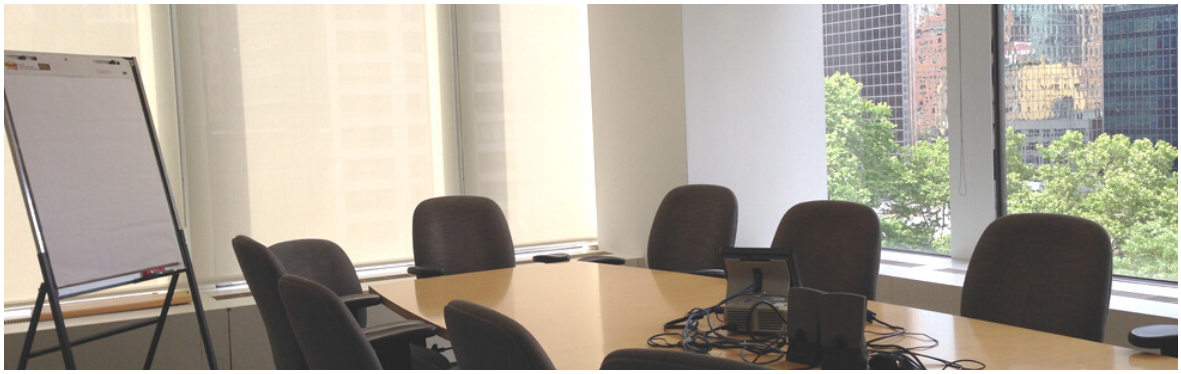
A network of firms in 157 countries with more than 223,000 people who are committed to delivering quality in assurance, advisory and tax services. Supporting more than 20,000 companies worldwide. With close to 6,000 professionals in our tax, assurance and advisory network, we have the knowledge, skills, tools and resources to help contractors and related industry leaders focus on key issues affecting their businesses.

PwC's Engineering & construction practice provides guidance in such areas as global industrial products, global engineering and construction industry mergers and acquisitions (M&A), cost containment, sourcing strategies and supply chain management.

THE ROLE OF CHEMICAL ENGINEERING

Chemical engineers have roles in consulting and assurance (auditing). The Audit team examines each client's financial reports to form a view on whether the information presented, taken as a whole, reflects the financial position of the organisation at a given date. With the knowledge gained through the process of audit, we provide support to our clients and broader society.

Consulting can transform the way IT works for our clients by reducing costs, increasing efficiency, and making it easier for their IT function to respond to the needs of the organisation, or perhaps you'll be part of the Project Delivery Services team where you'll manage of direct client projects or get involved in project work with clients from other business areas.



EMPLOYMENT OPPORTUNITIES

VACATION PROGRAM FOR STUDENTS

If you're in your second last year of university in an undergraduate or postgraduate degree, our summer Vacation Program offers you first-hand experience at the heart of our business. The program runs over three to eight weeks (length varies per state) and includes full-time work experience during your university break, allowing you to get a head-start in your career before graduating.

STEM ACADEMY

PwC's STEM Academy is an immersive two-day experience that will give you a unique opportunity to gain insight into a world of innovation and disruption. Through engaging workshops and networking sessions, you'll learn about the global shift towards STEM in business and the innovative work we do every day. Through a hands on, interactive experience, you will develop skills in design thinking, and better understand how your STEM skills can be used to solve important problems and create positive change in real life business cases. STEM Academy will help you broaden your business acumen and help set you up for success when applying for future roles within the firm - those who perform well may have the opportunity to be fast-tracked through to our Vacation or Graduate program! STEM Academy occurs annually in Melbourne, Canberra and Sydney. It runs over a two-day period and is open to penultimate and final year STEM students along with recent STEM graduates.

TRAINEE PROGRAM

Our Trainee Program is a unique three-year opportunity that offers real paid work experience while you complete your degree. Putting what you're learning at uni into practice, you'll join our Assurance, Private Clients or Tax teams to work on solving our complex client problems. And like many Trainees before you, you may also receive an offer to join us as a full-time Graduate afterwards. If you're a first-year single degree student or a second-year double degree student, our Trainee Program might be for you. We look for students from a range of degree backgrounds including Accounting, Commerce, Information Technology, Law – just to name a few! As a Trainee you'll be assessed against the competencies of our global framework, the PwC Professional. This is how we define and encourage leadership at all levels - from Vacationer to Partner. Closes around 19th August.

INSIGHT ACADEMY

This one and half days experiential event will give undergraduate students with two years left on their degree an opportunity to immerse themselves in the PwC culture and the chance to secure a spot on our Vacation program the following year. By interacting with our different business areas and networking with mentors, you'll learn where your potential, skills, and passions may fit in a professional services environment. Participating in interactive workshops, you'll undergo a process of self-reflection and develop some of the practical skills required for future success in assessment centre situations, helping you on your journey to becoming job ready. You'll walk away with newfound knowledge about the role of professional services in today's complex world and a better understanding of the learning and development opportunities available to you throughout university. Insight Academies are held annually in Melbourne, Sydney, Canberra, Brisbane and Perth.

GRADUATE PROGRAM

Creating a meaningful career is important, but so is creating yourself. To do both, you need the right opportunities – to grow equally as a professional and an individual, and to make an impact in a community where creating positive difference matters. The skills, experience and connections you will gain with PwC provide that opportunity. As a Graduate, you'll receive the opportunity and support to develop your business and technical skills through a range of programs and professional qualifications. We encourage further tertiary study by providing subsidies, paid study leave and flexible working arrangements.

WHY BECOME A PART OF PWC?

Large multi-national company, options to work in other nations. An agile and dynamic workplace, often with flexible working hours and working from home options. A fun and engaging work culture, where you're truly encouraged to be yourself.

For more information visit:

https://www.pwc.com.au/careers.html
https://www.pwc.com.au/careers/student-careers/trainee.html

CHEMICAL ENGINEERING UNDERGRADUATE SOCIETY

SECTION 4: INTERVIEWS

JUNE 2023 ISSUE 6

RESEARCH ENGINEER AT
JAMES HARDIE R&PD

JACK PUN

> You miss every shot you don't take!

Where did you complete your industrial training and what do they do?

I did my industrial training with the National Measurement Institute - Nanometrology team. The NMI plays an important role in the Australian economy by maintaining and regulating Australia's measurement system, developing and maintaining national measurement standards, and delivering world-class measurement products and client services·

What is your role and what did your day-to-day look like?

I was a part of a research-focused project. My role was to set up and perform experiments to accurately measure nanoparticles. I had the opportunity to be trained on expensive spectroscopy instruments, work in an official lab environment. I was also able to work closely with my supervisor, receive feedback on written reports and be mentored about my career plans

A typical day for me would be going into the research centre, check in with my supervisor on the work to be done for the day. Then, I would set up the instruments, get the required samples, sketch up my own data recording sheet and perform experiments. If I fail to achieve what I expected, I will ask my supervisor and they would explain the concepts to me and continue on with the experiment.

What did you learn? How will this placement benefit you in the future?

For my thesis, it was very research heavy. Working previously in a lab environment definitely boosted my work experience and allowed me to work with a high achieving academic group (Prof. Rose Amal). This placement also helped me train my report writing skills, using professional language·

Would you recommend this placement?

Absolutely!·

How did you find the job?

Chemical Engineering newsletter/ Email.

What are you doing now?

I am a Research Engineer at a global company James Hardie·

Do you have any advice for students who are currently looking for industrial training?

Don't give up! Keep applying, and adapt your resume after every application. Do not be afraid of rejection. You miss every shot you don't take!

ENGINEERING PROJECT OFFICER
AT SYDNEY WATER

LALITHA PARTHASARATHY

> Go with an open mind and be open and honest about your skill sets. Always demonstrate that you are proactive and keen to learn.

Where did you do you industrial training and what was your job role?

I completed my industrial training in 2 stints. First is in Deloitte – Risk Advisory Sustainability Services. I participated in their 2017/2018 Vacationer program. The second is PARTCAT UNSW as a Research assistant to aid in the synthesis of catalysts for clean energy initiatives.

What is your role and what are the responsibilities?

As a vacationer at Deloitte, I worked on energy assurance plans for the sustainability audit of big clients for the clean energy regulator. This allowed me to learn a lot about the business side of chemical engineering especially with respect to sustainability and reporting and allowed me to learn about cool concepts like carbon credits. I also worked on a workers health and safety project and obtained a greater understanding of the legal obligations of a business to maintain the safety of their workers.

I found the work at Deloitte to be very dynamic in nature! Most of the days, you don't really know what's in store for you. And as cliché as it sounds, every day is truly different. Usually, I would check my emails, have meetings with my coach and the team and learn how I can add value on sustainability related audit and assurance tasks.

My placement at PARTCAT was fairly relaxed and felt a lot like my labwork for my honours thesis. Planning is crucial to ensure that all the catalysts are synthesised in the most effective way.

What did you learn from your industrial training roles?

By completing the placement at Deloitte, I learnt a lot about the business consulting industry. Initially I was unsure as to which career path I wanted to take and completing this placement gave me a lot of clarity. It gave me the perfect opportunity to meet some great people and learn about things I didn't even know existed! Networking was also something that they really encouraged and I found that to be beneficial in learning more about other business units.

By completing my placement at PARTCAT, I expanded my skill set to also be able to synthesise metal catalysts supported on metal oxide supports.

How will this placement benefit you in the future?

The skills on reporting and insight into advisory/assurance services have given me a better insight into the corporate world. Every engineering company will ultimately have sustainability reporting and targets to meet and this placement really helped me understand what that involves.

Completing a placement at PARTCAT gave me further insight into nanoparticle catalysis research.

Would you recommend this placement and why?

I would recommend this placement for anyone who is unsure whether they want to pursue a career in the business consulting industry. This may not be seen as a traditional engineering placement at first glance, however when you look at the Engineers Australia guidelines, being an engineer is so much more than just designing a reactor or optimizing a process. Sustainability reporting, workers health and safety and understanding fundamentals of business management are also highly valued skills and are puzzle pieces that fit very nicely around the technical knowledge that are delivered at lectures.

I found the culture in Risk Advisory to be very friendly and both my coach and buddy were very supportive of my development. Ultimately, any placement you do is going to teach you something you didn't know – whether it is good or bad!

What was the recruitment process like?

Deloitte was my first time going through the recruitment process. Therefore, I had no expectations of myself. I was almost convinced that they'd pick someone better! I think this helped me a lot in the sense that I was myself the entire time, kept nerves at bay and just tried to do my best. I found my interviewers very nice (even when I forgot what the question was halfway through my answer…) and the whole atmosphere was fairly relaxed

Have you gotten any future placements? What are you doing now?

Ultimately, I chose to pursue a career in the water industry. I'm currently working as a 2nd year graduate at Sydney Water. I've been loving it so far!

Do you have any advice for students who are currently looking for industrial training?

My advice would be to go with an open mind and be open and honest about your skill sets. Always demonstrate that you are proactive and keen to learn. Usually, people are willing to help you if you ask for it.Also, research the company well. Know their values and determine whether their values are in alignment with yours and how you can provide value.

PLANNING LEAD AT UNILEVER AUSTRALIA

LIAM O'CONNOR

> We are referred to as the "universal engineers" for our adaptability and so there are plenty of opportunities out there for everyone...you just need to find them!

Where did you do you industrial training and what was your job role?

During my penultimate year of a double degree of Chemical Engineering and Commerce, I was part of the Unilever Internship Programme (ULIP) within their Supply Chain team.

Unilever is global consumer goods company and owns brands such as Dove, Lynx, Rexona, Continental, Lipton, Omo and Sunsilk. Throughout my placement however I was positioned at their Streets' Ice-Cream factory in Minto where I was the factory's "Finite Scheduler". This role required me to sequence and schedule all production runs for their Paddle Pop, Gaytime, Magnum and Blue Ribbon products which were spread across three (3) different production lines. I was required to work with R&D, Quality, Engineering and Customer Service teams to ensure that production plans were optimised to maximise factory output and ensure we could service all our customer and consumers.

What is your role and what are the responsibilities?

On a day-to-day basis I was involved in numerous meeting designed to best capture a realistic picture of how the factory was currently running and any changes which need to occur within the immediate or medium term future to optimise the factory's output. For example, changing over a production line from Magnum to produce Bubble-O-Bill was a lengthy and very involved task. Therefore, the minimum order quantities (MOQ) of that run had to be adhered to and overall, the correct quantities planned so that unnecessary downtime would not occur in the following weeks as we returned to that product.

I was required to track the daily outputs of the factory and report back to upper management while leading a weekly waste meeting. This wastage was looked at very closely in line with Unilever's mission to "Make Sustainable Living Commonplace" and therefore various actions and 'deep dives' were performed to understand the root causes and potential factory improvements.

What did you learn from your industrial training roles?

Although university provides you with the technical teachings of engineering and systematic thinking, it does not prepare you for the interpersonal aspects of working in an office with real people. Having been my first exposure to both a corporate and factory environment I was able to gain insights into the relationship between the two areas of the business. For most companies the end goal is to generate profit and so being able to see how interrelated factory optimisation is to the overall financial side of the business was very interesting. Other more general learnings came from the way to conduct yourself in a corporate environment as well as the importance of working in a team.

How will this placement benefit you in the future?

This placement provided me with widespread exposure to the FMCG industry. Being able to work for a company manufacturing in Australia was not an experience I take for granted as more businesses move their factories offshore. Consumer brands and the FMCG industry was one area which had a paticular interest to me and so this placement allowed me to start from the

beginning of the supply chain (factory) and see the importance of ensuring strong outputs to benefit the end customer. This placement also provided me with a strong professional network and a number of ambassadors who saw my capability and showed a keen interest in me progressing through the company.

Would you recommend this placement and why?

I would definitely recommend Unilever's Internship Programme (ULIP). From day one I was placed in an actual day-to-day role giving me the genuine experience of what it is like working for a fast-moving consumer goods (FMCG) company such as Unilever. I was never viewed as a "just an intern" which can at times have some negative connotations around it and instead I was part of the team with a fresh, energetic set of eyes who could add real value to an already established business.

How did you find the job and what was the recruitment process like?

The UNSW Careers and Employment portal was my first notification that applications were open for Unilever's internship programme. After filling out a quick questionnaire, Unilever had a set of online games that needed to be completed. A virtual interview was the next stage before finally going through a full day discovery centre. Out of the 12 applicants in the 2018-19 Supply Chain discovery centre, 4 were selected.

Have you gotten any future placements? What are you doing now?

My initial programme lasted for three months however was extended for a further couple of months as the business went through a transition period. After this, a separate role opened up and was offered to me as a full-time opportunity. I (tried to) balance work and full-time uni eventually succeeding and graduating at the end of last year. Since finishing at UNSW I have transitioned through two further roles in different teams allowing me to gain widespread exposure across all areas of the business. Without the initial internship programme none of this would have been possible and so I cannot emphasise enough the need for students looking for IT to view them as more than just an "internship" and instead consider what bigger opportunities can come out of it.

Do you have any advice for students who are currently looking for industrial training?

Persistence is key to eventually securing an industrial training placement. I'd recommend building a tracker of all potential companies you'd consider working for and when the applications open/close. This will ensure you don't miss any of them and get a full picture of how you are progressing through the different stages of each application. Another bit of advice is to not be too set on a particular company. There are thousands of applicants all applying for the same roles so that is only asking for disappointment if you are not open to the idea of branching out. Not everyone that does a Chemical Engineering degree needs to become a Chemical Engineer. We are referred to as the "universal engineers" for our adaptability and so there are plenty of opportunities out there for everyone...you just need to find them!

PROCESS ENGINEERING INTERN AT GLENCORE, MANGOOLA COAL OPERATIONS SITE

ALICIA SHIH

What are the most useful learnings and experiences have you gained from your internship opportunity?

I think greater understanding of where my degree can lead into after I finish uni. In first and second year, it felt difficult to realise how my learnings applied to an industrial context, but now I feel I sufficiently understand what the role of a process engineer entails and am aware of various career paths available to me in future. I also learned how to better manage and prioritise my time, which has been incredibly valuable at uni.

Was the industrial training you completed associated with your future career plans?

Yes, I really enjoyed the balance between working at the desk and walking around the plant. I can't see myself working at a desk job for my whole life, so spending time completing tasks on site really helped to break up my day. I would love to work in some sort of processing industry after I finish, whether that be coal or another industry.

What was the most challenging aspect of your internship, and why?

I would certainly say learning and understanding every aspect of the plant in such a short period of time. I had no understanding of process plants prior to working at Glencore, so it was challenging to learn about different types of separation equipment to a degree where I could properly inspect them and educate operators on their function.

> In first and second year, it felt difficult to realise how my learnings applied to an industrial context, but now I feel I sufficiently understand what the role of a process engineer entails and am aware of various career paths available to me in future.

Did your internship have a specific selection process? What advice could you give to students who are currently looking to secure industrial training?

The selection process involved an online application followed by an interview. For both aspects, I would strongly recommend that you thoroughly research the company involved; what are their values, what opportunities do they offer, and what projects are available that you would be interested in working on? Highlight these elements in your cover letter and in your application and ask questions about them during the interview to show your enthusiasm.

RESEARCH AND DEVELOPMENT INTERN AT SELLEYS

AARON MADIRAZZA

> "If they say no, it's not personal."

Where did you do your internship?

I worked for Selleys in the research and development team.

What experience and knowledge did you gain?

Working at Selleys has given me a greater appreciation of what work is like day-to-day in industry, and how this is similar and different to what I've studied at uni. Depending on the company and your specific role, you might use any number of technical skills from uni, but the way you approach problems seems to be quite similar. A specific experience I've really enjoyed is working in the lab. It's much less stressful when you have more than a couple hours to complete all your work, and I like the balance between computer-based work and the practical lab work.

Briefly describe what the application process was like?

The application process involved an online application and then an interview.

What challenged you?

The biggest challenge for me was that I felt I didn't know much compared to my colleagues. This meant I often asked for a second opinion before doing anything. It took time to grow my confidence so I could contribute, and is something I'm still working on, but this has been a big takeaway from this internship for me.

What advice would you give to students looking for an internship?

If you are passionate about an industry or a particular company, don't be afraid to ask for opportunities, even if they don't advertise anything publicly. If you show them you are genuinely interested, you might be pleased with what they say. And if they say no, it's not personal.

INTERN AT HPE PROJECT SERVICES

TIMOTHY SANTOSO

> "Moreover, CONNECTIONS!!!"

Where did you do your internship?

I work at HPE Project Services which is an engineering consultancy specialising in the food and beverages Industry.

What experience and knowledge did you gain?

Working in an engineering consultancy provides many opportunities to learn and see different processes from various companies. It helps me understand the context of the theory and calculations I've learned from Uni. It was a challenge for me going through 2nd year doing all the mass and energy balances, but now through working, I have had the opportunity to visualize and apply thermodynamics that I've learned into an energy-saving project. Lastly, I had the chance to work in many different plants and thus have been exposed to a range of different chemical engineering processes.

.

What challenged you?

I think the most challenging part was learning how to balance my understanding of the overall process of the plant with the specific details in a way that would bring value to the project.

.

What was the application process?

The application process was sending my resume to the company and two online live interviews. I would recommend finding details about what the company provides (consultancy in what area? Project management, Risk and Safety, etc.) and research on the industry that they specialized in (E.g. Food and Beverages, Oil and Gas). If you cannot find this information, it would be good to ask in the interview. Also, the most important thing is to show your interest in getting the position.

What advice would you give to students looking for an internship?

If you don't know what field you want to go into or what type of job you want, I would recommend going to consultancy as the first step. Consultancy has the best exposure in terms of seeing different types of processes from different companies. From there you can learn more about each process and also the company's values as you will be working closely with the companies (which is your client!).

INTERN AT SAFEWORK NSW

VARISARA LAOSUKSRI

> "Have an open mind!"

Where did you do your internship?

SafeWork NSW, Major Hazard Facilities Team

What experience and knowledge did you gain?

Working with the regulator, I had a unique opportunity to shadow inspectors and representatives from NSW Police and Fire and Rescue NSW on a variety of visits to chemical facilities and small businesses. Along with my discussions with the MHF team, these experiences provided valuable insight into safety from a regulatory perspective. I learnt of the different types of safety systems industries implement, the common oversights, and the real challenges associated with enforcing workplace compliance.

What was the application process?

This internship was organised through the Co-op program which involved an online application and interview at the end of high school.

.

What challenged you?

One of the learning curves I faced was on stakeholder management. Unlike in university, where a group may set their objectives and performance benchmarks based on internal metrics, the projects I worked on during my internship relied on consistent consultation with different team members who were the primary stakeholders. A challenge from this was learning how to respond to and accommodate different expectations and opinions.

What advice would you give to students looking for an internship?

If you are having trouble finding an internship, keep applying and don't limit yourself to a narrow selection of companies or industries. I think there is value in all experiences. The great thing about an internship is that it is temporary – so don't stress and treat it like a learning opportunity. Once you start your internship, try to get to know as many people within your team/company as possible. Not only will it help you settle in, but I found that the most valuable learnings come from listening to and leveraging the expertise of others.

INTERN AT KPMG AUSTRALIA

LUKE VAN VREUMINGEN

> "There will always be an opportunity out there for you "

Where did you do your internship?

KPMG Australia

What experience and knowledge did you gain?

My work at KPMG gave me some incredible insights into the energy sector and expanded my understanding of the barriers and work required for Australia's renewable energy transition. It also gave me the chance to develop my soft skills in a welcoming and supportive team culture.

What challenged you?

I found it quite tough to apply some of my skills and knowledge obtained through my study. Given I was working in an unfamiliar industry in a role which was not really engineering, I had to rely on soft skills and take time to seek answers to begin to properly understand my work.

What was the application process?

My application process was (quite surprisingly) very simple – consisting of an initial submitting of my resume, followed by an interview.

What advice would you give to students looking for an internship?

Always be on the lookout for opportunities, whether it be at networking or information events, online, or even when speaking to fellow students. There will always be an opportunity out there for you, its just a matter of seeking it out!

.

INTERN AT SHERPA CONSULTING

BEN MALIK

> "Take advantage of the resources"

Where did you do your internship?

Sherpa Consulting

What experience and knowledge did you gain?

I was exposed to both consulting and the broader chemical engineering world. I also experienced what process safety is like in the real world – including seeing many of parts of the process safety toolbox working in action. I also learnt more about the interfaces between different disciplines and was even lucky enough to tour on site.

What was the application process?

I submitted a cover letter and resume, followed by an interview. It was relatively straightforward and completed within about 5 weeks.

What challenged you?

I was challenged to apply what I have learnt at uni – including the process safety we covered – in the real world. I also had to learn how to engage and communicate as a professional engineer, including working with a variety of engineers from different disciplines and positions.

What advice would you give to students looking for an internship?

Take advantage of the resources provided by the school and CEUS. I found this opportunity through the school's weekly emails, and also took the chance to have sessions with the school's IT advisor Sarah Grundy to prepare myself for applications. Just make sure to book these in advance and outside of graduate season!

.

INTERN AT WOODSIDE ENERGY

ELLEN MITCHELL

> "Apply to a wide range of internships"

Where did you do your internship?

I completed an internship with Woodside Energy, a large Australian oil and gas company, in Perth, WA. I worked in their New Energy team, focusing on green Hydrogen projects in the USA.

What experience and knowledge did you gain?

Through the vacation program, I was able to gain valuable understanding of how projects are managed and carried out in industry, both in the work I completed and in the progress of projects in my team. I learnt a great deal about green hydrogen production and distribution, and was able to put my university knowledge of chemical plant design into practice. I was also given the opportunity to visit the Karratha Gas Plant, and gain an understanding of gas processing and liquefaction on an industrial scale.

.

What challenged you?

The biggest challenge for me was getting used to working in an office environment, and working collaboratively with my colleagues. Coming from the university environment, it can be easy to try and complete your work independently, but it's very important to ask for help and learn from the people around you.

What was the application process?

I applied online through the Woodside Energy website, and then completed an online video interview where I was asked to record my responses to around 10 different questions. I was then invited to an interview over zoom with two engineers from Woodside, and after a few weeks and some standard background checks received the acceptance email. While your resume and cover letter will help to provide your background to recruiters, it's these interviews where you will be able to stand out and show off your capabilities. Make sure to practice beforehand!

What advice would you give to students looking for an internship?

My biggest piece of advice would be to apply to as many different vacation programs and internships as you are able to. While it's important to identify the type of company and field of work you are interested in, working in industry is very different from what we learn in university. By applying for many different internships, you keep your career options open, give yourself more opportunities for industrial experience, and you may find yourself enjoying working in a field you had never even considered.

.

ACKNOWLEDGEMENTS

2023 Industrial Relations Team

2022 Industry Liaison:
Gabrielle Burge

2021 Industry Liaison:
Abbey Last

2020 Industry Liaison:
Karen Devanie

2019 Industry Liaison:
Annie Tu

2018 Industrial Relations Team

2023 Industry Vice President:
Cameron Suen

2021-2 Industry Vice President:
Alicia Shih

2020 Industry Vice President:
Annie Tu

2019 Industry Vice President:
Ramesh C U Archuna

2018 Industry Vice President:
Buddhi Ranasinghe

UNSW Careers and Employment

2023 Gold Sponsors:
UNSW Chemical Engineering

2023 Bronze Sponsors:
Australian Coal Preparation Society
Engineers Australia
IChemE