

UNSW SCIENCE SOCIETY

# CAREERS GUIDE

2022

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# EDITOR'S NOTE

Dear Reader,

We're from the SCISOC Education team, and thank you for picking up the Careers Guide! This was a project that's been in the making for a while now, and to see it finally come through (and for you to be reading it), is just amazing!

Science degrees and courses offer unique perspectives that we believe are going to be one of the most important sectors in the growing job market, hence why we have a focus on not just where to find jobs, but how to use your degrees and courses in a way to find jobs! It's our hope that this guide can assist you in any way for your pursuits, whether it be through traditional academic research or analyst work to the new and experimental startups that have emerged as a result of COVID-19. Our subcommittee team has been hard at work researching a wide variety of topics over the past few months. These topics ranged from the nuances and upcoming trends of the job market to the companies and programs available to students, and hopefully you can take away one or two of the interesting tips and information pieces that we've found.

We also wanted to give a massive shoutout to the IT/Pubs team, who have worked tirelessly to give the Careers Guide and our work an aesthetic facelift that is just stunning!

Cheers and happy reading,  
SCISOC 2022 Education Division

Dear Reader,

We are SCISOC's IT/Publications portfolio and thanks for choosing our Careers Guide!

The Publications team have worked hard to bring Education's work to life through our design and creative insight. Through working alongside the Education Division, we have gained insight on the considerations of an externally-facing portfolio, and how our skills complemented those of the division in coming up with the skeleton of the Careers Guide.

We, as designers and editors of this guide have developed a deeper understanding of the multifaceted nature of Science degrees, careers, and the industry at whole. So, we hope you will have learnt a few things after reading this guide as well!

Our VPI, Publications directors, and subcommittee members have enjoyed brainstorming, collaborating, and establishing a shared vision for UNSW Science Society's first Careers Guide.

We hope you find this guide helpful in navigating your university journey and career endeavours!

Thanks for reading,  
SCISOC 2022 IT/Publications Portfolio

# ★ TOOLKIT ★

## SECTION 2

### VALUE PROPOSITION

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"What do YOU bring to the team that no-one else does?"

### INTERVIEW TIPS

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...the overarching theme you'll start to notice here is: be genuine!

### RESUME TIPS

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Helping employers understand who you are, what motivates you, and what you have to offer as a potential employee.

### PERSONAL BRANDING

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What is it?  
Why should I care?  
How do I get started?  
How do I maintain connections?

### WHERE TO LOOK AND HOW TO LOOK FOR JOBS

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Fluidity in your career path and deviation from the norm... can really open up the door for developing real professional skill...



# VALUE PROPOSITION

## Some things to remember...

You are a unique person with entirely unique experiences (after all, no-one has lived the exact same life that you have!). Leverage the combination of your experiences as your value.

While you may feel that each experience that you have is generic or not valuable, what does matter is what you drew out of each experience, and how you can apply that experience to the job you're applying for!



When applying for jobs, there are a lot of ways that employers hunt for their team. One of the most important things for you individually is your Value Proposition, that is to say: "What do YOU bring to the team that no-one else does?"

## Frame your experiences in a positive light!

People assume that employers look at retail or hospitality work experience as irrelevant, but in reality, the work you do in those positions have valuable traits that are often overlooked!

## Draw out the unique parts of your experiences through the STAR method

**S**ituation refers to what the context of the environment was, what was happening, and what the problem at hand was. Often this is also called the problem statement: What was the main issue at hand? Who did it impact and how did it impact them?

**T**ask is what things or actions needed to be done in order to fix the problem, how important they were and the impact of those actions. You can also make a note on how solving the situation helps the people at hand.

**A**ction is what you actually did to fix the problem, how you went about it and what your input was. This goes a long way in showing employers what your active contribution was, and especially in team environments, this shows how you can work in a team.

**R**esult is the final output that came as a result of your actions. What were the benefits and the impacts as a result of your direct input? Here, it's good to put some numbers or even testimonials!

## An example of STAR

"At a Christmas shift at a retail store we had a lot of customers come in and a lot of staff had COVID, so we didn't have enough people to take care of them. I worked with the manager to address the highest priority customers first, people who needed direct care or had a specific enquiry, then to help the customers who were just roaming around looking. By communicating where we were to the team and positioning ourselves in high traffic areas, we were able to effectively get through the Christmas shift and manage every customer."

# INTERVIEW TIPS

## 01. ABOUT JOB INTERVIEWS



Admittedly, interviews tend to be the most daunting part of a job search and that is completely normal! There is always fear surrounding the uncertainty of the interview outcome, but this section aims to focus on some areas of the interview process that could help you stand out amongst the other candidates. With that being said, the overarching theme you'll start to notice here is: be genuine!

## 02. AVOID BEING GENERIC



The idea is to give the interviewer a good enough picture of you to make a value judgement, because that is what they ultimately base you on. Some elements that may improve your response and construction of character include:

- **Motivation:** What motivated you to want to apply? Remember this is multifaceted. You might want to think about why you want to work in this area, what the appeal of the specific company is and what your goals are.
- **Experience:** When did you apply or develop this quality? Have you had any past experience within the same industry?
- **Culture Values:** Often listed on the company's website, make sure you integrate these values into your response



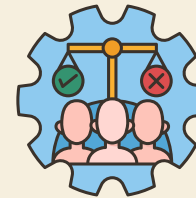
## 03. WHAT INTERVIEWERS LOOK FOR

In general, an interviewer will look for 2 things above all:

1. **Someone with values**
2. **Someone they want to work with**

In summary: Feel free to expend some level of casual conversation **if appropriate**, to demonstrate sociable and approachable traits.

It is mostly important to be real and genuine.



## 04. ANSWERING QUESTIONS

A common pitfall is speaking in quite a long-winded way; often attributable to nerves on the day.

So, what may help is planning out how you want to answer.

Take a few seconds before saying anything to think about what you want to say as it's completely normal and the interviewer won't mind.

## GENERAL NOTES:

- *Prepare*
- *Reflect after the interview*
- *Have the correct mindset*
- *Check to see which type of interview it is*

# RESUME TIPS



## 01 Introduction

A resume is a brief, informative summary of your education, employment, skills and experiences. It should highlight your strongest assets and skills relevant to the job for which you are applying, and differentiate you from other candidates seeking similar positions. As the first point of contact with your employer, resumes provide a critical role in helping employers understand who you are, what motivates you, and what you have to offer as a potential employee.



Thus, in order to best stand out from other applicants it is essential to tailor your resume to the type of position and company you are seeking. While this does not necessarily mean that all your experience must relate directly, your resume should reflect the kind of skills and values upheld by the company.

## 02 General Structure

To ensure that your resume is organised and easy to read, it is recommended to divide it into sections. Some examples of these sections could include:

### Name and Contact Information

This section should include basic information including

- First Name / Last Name
- Phone Number
- Email Address
- LinkedIn URL and other online presences such as a website or blog



### Summary

A resume summary statement is a short paragraph often two or three sentences which demonstrates a job seekers unique value through their skills and accomplishments.

### Education

This should be a brief summary of your educational endeavours and achievements arranged in a reverse chronological order. This could include:

- Your most recent/in progress degree
- The name of your school
- Your field of study and degree major
- Any academic honors, relevant coursework or making dean's list
- Relevant extracurricular activities or programs

### Experience

This section should contain information about your professional history including previous titles, employers, responsibilities, skills learned and accomplishments. Ideally written following the achievement statement structure.

- Common headings include: Professional Experience, Clubs/Student Organisations, Leadership Experience, and Volunteer Work
- Organised in a reverse chronological order

It is important to note that there is not a one-size-fits-all method and with that, no one correct manner to structure your resume. While we have included recommendations and examples, it is important to structure your resume in order to suit your own needs to best express your experience and potential.

## 03 Achievement Statements



In order to effectively highlight your skills and experience, it is important to structure your sentences in a clear and measurable manner. While there is no one correct way, the recommended advice is usually to follow an achievement statement structure.

**Achievement Statement = Active Verb + Tasks + Outcome/Purpose**

As seen in the formula above, such statements should start with an active verb to demonstrate the particular skill required to complete the task, followed by the end result ideally with quantitative value if applicable.

Examples of action verbs include:

|              |             |            |          |
|--------------|-------------|------------|----------|
| Accomplished | Coordinated | Contracted | Achieved |
| Developed    | Addressed   | Presented  | Operated |
| Expanded     | Approved    | Appraised  | Managed  |

Examples of Achievement Statements

- **Orchestrated** the **training of 6 staff** to **operate the cash register**
- **Developed** an **engaging set of lessons to teach Science to 5 HSC students resulting in a 20% improvement in their grades**
- **Coordinated** a **networking workshop with external organisations to provide developmental opportunities for over 50 students**

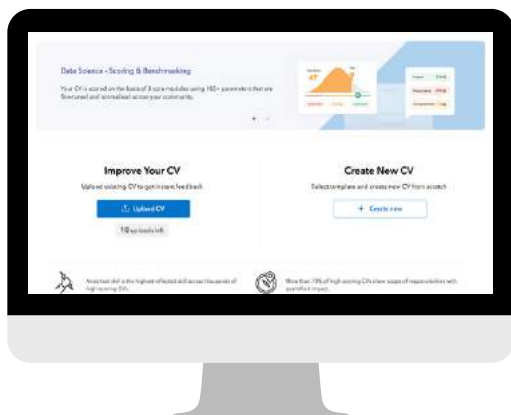
04

Resources

<http://>

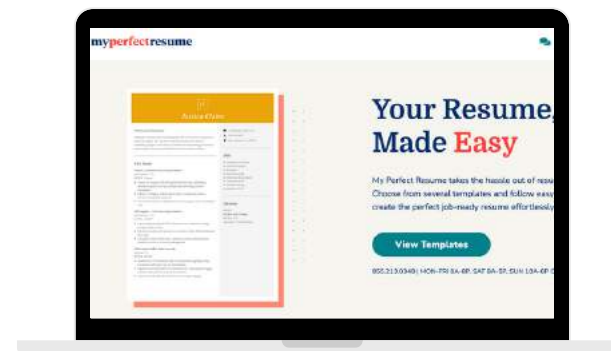
### UNSW Resume Checker

Resume Checker is an online tool which allows individuals to upload their current resume and receive instant tailored feedback, through recommendations and suggestions for improvement. The online resume checker provides feedback on a range of features from presentation and layout, use of active verbs, implementation of achievement statements and correct grammar and punctuation.



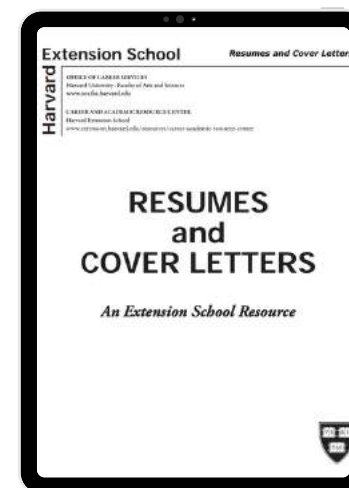
### MyPerfectResume

Similar to the UNSW resume checker, MyPerfectResume is a step-by-step resume building tool with a range of pre-formatted and easy-to-use templates. Additionally, the online service also automatically creates cover letters that correspond with the created resume, with further personalisation options available.



### Harvard Extension School

Another helpful tool available online is the Harvard Extension School's "Resume and Cover Letters", which provides a range of sample resumes and cover letters. Additionally, while including an entire page of active verbs, the resource provides various warnings and recommendations.



## WHAT TO LOOK FOR IN A JOB

It is often a misconceived and, frankly, a self-destructive mindset that students, for a multitude of reasons, narrow their job-search to only high tier and well-known companies in their area of interest. Of course, it need not be said that the benefits of doing so justify themselves if this approach succeeds. However, fluidity in your career path and deviation from the norm; That is, a 9-5 corporate job, can really open up the door for developing real professional skill and having an actual contribution to your company.

On the less known end of the corporate spectrum sits the much smaller operations of lower-tier companies, particularly startups: characterised by less corporate oversight, no financial incentive to chase huge profit margins and a small workforce. Firstly, it is much less likely that herds of university graduates flock towards job openings in these sorts of places, so off the bat your odds of obtaining a position is immediately boosted.

Beyond that, in short smaller companies tend to have a flat management structure that lends itself to a more cohesive and involved work environment; Compare this with the hierarchical pyramid of management in big companies that tends to water down your significance as a “less important” employee.

In this sense, the more tightly knit work environment allows you to be more meaningfully involved in the company's operations, for they are much more sympathetic towards your professional development and career advancement.

Ultimately, a more fast-paced work life can really benefit your career progression, and on the back of this, you really do gain (a) the best possible glimpse into what you may or may not like about that field and where you wish to take your career from there, and (b) universal and fundamental professional skills that you can take wherever you go.



### Cold Outreach



Whilst cold outreach is a rather unconventional avenue for searching for a job, there yet still is significant value in doing so by networking and getting your foot in the door. To really understand this, empathise with a recruiter: its easy to disregard an email of a random student trying to advertise themselves.

So, you've got to get yourself noticed. That is to say, your outreach needs to show that you have substantive value that makes it worthwhile for the reader to stop, and feel the need to look further into your application:

## a. Showcasing Value

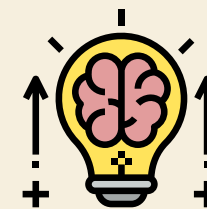
At the heart of showcasing value to a prospective employer lies the notion of genuine interest in not just the industry, but the company you're applying to itself. Recalling that cold outreach revolves around 'standing out' from the rest, demonstrating genuine interest can be a practical medium of showcasing your value.

This would obviously entail some degree of research into the company, but by no means does this need to be extensive to get the point across. By demonstrating your interest in the company, you effectively incentivise the reader to truly see your value, as you will have led them to believe that your genuine interest translates into hard work, efficiency and commitment to the company.

So the aim is to find a compromise between the extremes and to be real-as after all another person is reading it, and they want to hire some-one that they actually want to work with. As a tip, have someone else read over it to check if it gives the right impression.

## b. Who to Contact

This list should help find someone to contact! Note the order: The first listed is the one you would ideally go to first, and so on.



Again, with reference to the aforementioned scenario, it is easy for a reader to conclude that an unenthusiastic and uninterested email is just someone who's in it for the money. Though whilst a bit dramatised, you can somewhat empathise with a recruiter in this position, given that they likely receive these kinds of emails on a regular basis.

With all that being said, the other end of this spectrum of 'interest', if you will, is pretentiousness. Arguably, a pretentious application that overly embellishes their interest or enthusiasm, particularly in the company of which the applicant would know very little about from the outside, is worse than a disinterested application, is harder to read in its pure obnoxiousness, and more importantly is blatantly obvious and disingenuous when it's fabricated.

## Recruiter

a. Across many companies, this title tends to vary in name greatly, anywhere from 'Campus Recruiter' to 'Talent Acquisition'

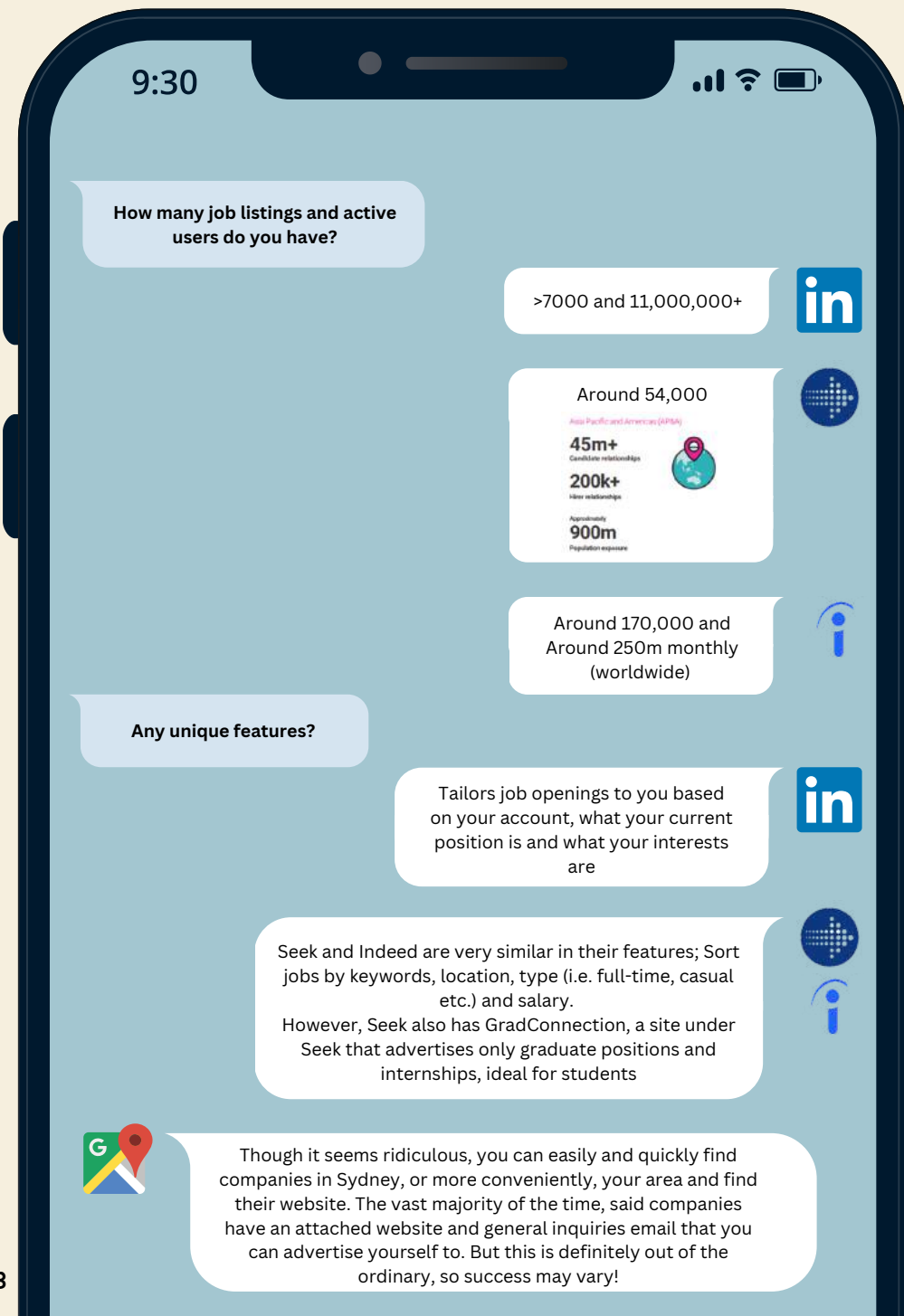
b. Generally, these contact details are found in job listings for said company or on their website. In a last resort, you can likely find one on LinkedIn- though keep in mind that using LinkedIn messaging for outreach is not necessarily advisable. An additional note on that is to ensure that said contact is actually connected to the recruitment network of that company, not just some random employee in another department

## General Inquiries Email

Commonly found on the company's website. Though make sure that this is their inquiries email or a relevant equivalent, as opposed to a customer contact email for instance. If the company has functional and efficient communication, then your email will be directed to the relevant person to review.



## Traditional Job Finding Sites



9:30

How many job listings and active users do you have?

>7000 and 11,000,000+

in

Around 54,000

Asia Pacific and Americas (APSA)

45m+ Candidate relationships

200k+ User relationships

Approximately 900m Population exposure

Around 170,000 and Around 250m monthly (worldwide)

i

Any unique features?

Tailors job openings to you based on your account, what your current position is and what your interests are

in

Seek and Indeed are very similar in their features; Sort jobs by keywords, location, type (i.e. full-time, casual etc.) and salary.

However, Seek also has GradConnection, a site under Seek that advertises only graduate positions and internships, ideal for students

G

Though it seems ridiculous, you can easily and quickly find companies in Sydney, or more conveniently, your area and find their website. The vast majority of the time, said companies have an attached website and general inquiries email that you can advertise yourself to. But this is definitely out of the ordinary, so success may vary!

## Career Accelerators

| NAME OF THE ACCELERATOR      | SHORT TERM PROGRAM OR A LONG TERM ORGANISATION? | WHAT DO THEY OFFER?  | DO THEY HAVE A PARTICULAR FOCUS?  |
|------------------------------|---|--|---|
| <u>Ripple.gl</u>             | Both  | Career Accelerator programs, panel events, directed career assistance      | Helping youth find jobs and careers in social impact  |
| <u>Startmate</u>             | Both  | Career Accelerator, Fellowship in start-ups, First Believers for investors | Targeted towards helping startups through motivating workers, founders and investors                |
| <u>MOU Incubator Program</u> | Long term                                       | Mentors in startups and entrepreneurship roles by professionals            | Largely aimed at startups   |
| <u>Fishbowl App</u>          | Long term                                       | Consultation with industry mentors and professionals                       | Creating a constructive and encouraging community that connects professionals and the inexperienced |



For more information about employment and career-building, check out UNSW Employability through <https://www.careers.unsw.edu.au>. It provides very useful resources, notably their Career Coaching sessions, where you can chat to professionals and see how they found their job and how this might help your job search.

PERSONAL BRANDING

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PERSONALITY

✓

EXPERIENCE

✓

SKILLS

✓

QUALIFICATIONS

✓



Headshots



Resume



Cover Letters

## What exactly is personal branding?

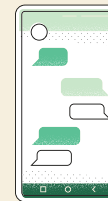
It's often said that your personal brand is what people say about you when you're not in the room. Your personal brand, especially in the view of your colleagues and future employers, comprises the unique combination of your personality, experience, skills and qualifications. This includes the Google search results attached to your name, your social media accounts, your CV and the way you present yourself to others.

## So why should I care about personal branding?

Carefully developing your personal brand can hugely benefit your career development. A strong personal brand will highlight your uniqueness and differentiate you from the increasing sea of competitors, as well as help you articulate and demonstrate the value you can bring to the company. Ultimately, your branding is there to build trust and dependability for your clients and employers, increasing your ability to get the right jobs and promotions.

## How do I get started?

Well, one of the most accessible ways to start building your personal brand is by networking. Many faculties and societies within and outside of UNSW offer networking events and opportunities and attending them will allow you to form more connections and build your professional network and profile. Before attending these events, make sure you look at who will be attending, know what sorts of questions you want to ask, and take note of names of people you talk to, so you can maintain these connections afterwards through email and LinkedIn.



Your first impression is also very important - research shows that first impressions are made in the first seven seconds. So it is also a good idea to prepare a **30 second elevator pitch about yourself**. This should include an **introductory statement** about your professional persona, and then highlight **what makes you unique**, not just listing *what* you do but also *how well* you can do it. When thinking about what to say, it's a good idea to ask yourself a few questions:

## CHECKLIST

WHAT STRENGTHS DO I HAVE/WHAT MAKES ME STAND OUT?

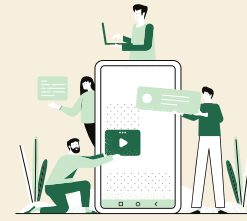
HOW CAN I ADD VALUE TO THE COMPANY?

WHAT HAVE I ACCOMPLISHED/WHAT I AM PROUD OF?

HOW WOULD PEOPLE DESCRIBE ME?

## Now, how do we maintain these connections?

Often we use LinkedIn, which, if you haven't heard of it before, is simply a platform primarily used for professional networking and career development. Here, you can 'connect' with people that you meet and build a professional network. There are also a few important things that you should do when you first make your account:



There is much more to do to refine your profile in LinkedIn, but these are the first major steps that you can take. And if you ever get stuck, don't be afraid to take inspiration from others.

Finally, be creative! Spend time doing anything you enjoy that also demonstrates your skill or passion for your certain area of expertise. This could include making a **personal website** to display your achievements, create an **online portfolio** to display your work, or even write a **blog** on interesting topics related to your study! This will all contribute to building a strong personal brand.



## Testimonial



Raymon Qian

Graduate Analyst at Quantum

### When to first work on personal branding:

I started to build my professional profile at the end of my first year. My recommendation is to do it ASAP, because you don't build it in one day, it's more like a process, you always add something to it or polish it from time to time based on what you have learnt recently.

### How helpful is it for the recruitment process:

And this does help in the recruitment process. Think about it, your background and experience should be asked in most interviews. If you build it from time to time, you will be very familiar and confident in it, then you are able to ace these questions.

### From your experience, is personal branding more important in certain areas of study?

I would say personal branding is important but it is just branding in the end of the day. What you have learned and what you have done should always be the most important thing. Especially since we are in the STEM industry, not marketing or advertising.

## SECTION 3:

# DEGREES

01

MAJOR TYPES

02

TRADITIONAL JOB  
PATHWAYS

03

OTHER USES OF  
MAJORS

04

COMBINATIONS  
(SINGLE DEGREES/  
DOUBLE DEGREES)



## ANATOMY



### Major Description

In Anatomy, you study both the microscopic anatomy (the tissues, cells and all the little bits inside), but also the macro anatomy, getting to study bones, muscles and nerves through immersive technology like Virtual Reality in order to get even closer to learning about the body.

### Skills Gained

- Understanding of the body, the topographical understanding of it.
- You understand how we developed as humans.
- You get to interact with the human body through VR and AR conceptualisation.
- You get to understand diseases, how they work, how they function. You'll be able to analytically decipher and categorise them.

### Fun Electives

**PATH2201 + SOMS3232** → Learning about diseases, what they look like, how they function, how our body deals with it

**ANAT2521** → Learning about the evolution of humans, studying fossils, humans in nature and in the world

## BIOINFORMATICS



### Major Description

Utilising data in order to better understand Genomics and proteomics. Here you learn not only the ins and outs of computer science, but you also get to understand and learn how you can apply that to a biology earth science field electives.

### Skills Gained

- Analytical skills that allow you to provide meaningful discussions that can contribute to the scientific community.
- Deep understanding and research into the microscopic makeup of our world.
- Both theoretical and practical application of the skills taught in lectures → preparing you for the actual workforce

### Fun Electives

**BINF3020 + COMP2041** → Allows you to construct software beyond a basic knowledge and apply it to a specific discipline → allowing you to translate huge amounts of data and analyse DNA and protein sequences through actual applied computer science

# BIOLOGY



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## Major Description

If you're big into the natural world, then biology is the place for you!

Here, you will gain an understanding of ecology and zoology, where you'll get to study structure, behaviour, habits, genetics, distribution, evolution and classification of animals.

## Skills Gained

- Onsite field and lab work that actively contributes to a degree and career in conservation
- Understanding of not just the scientific field, but the political climate of the world → helpful if you want to do policy or advocacy.

## Fun Electives

**GEOS3911** → Learning the political state of the environment, how we can do our bit.  
**BIOS2123** → Getting to actually go to the MQ Marshes in order to learn more about the world around it.

# CHEMISTRY



...

## Major Description

Chemistry is more than just the basic practicals you've done in high school, you'll learn to expand your knowledge and understanding beyond and further. You'll be able to work and learn in state of the art resources in courses that are designed to provide you with employability skills within the field!

## Skills Gained

- Analytical skills
- Lab skills
- Working in state-of-the-art facilities
- Understanding of the current and possible future trends in the industry

## Fun Electives

**CHEM2041 + CHEM6041** → Analytical chemistry into using advanced instruments and analysing those  
**CHEM3031** → Study solar cells, superconductors and how metals play a role in energy production and conservation  
**CHEM3021** → Synthesising important organic molecules through synthetic processes



# BIOTECHNOLOGY

...

## Major Description

In Biotechnology, you get to not only research about the academic parts of the biology world, but you also get to learn about how to apply that in a practical sense, through the 4 streams of medical, commercial, synthetic biotech and bioengineering.

## Skills Gained

- Presentation skills
- Analytical skills from both a commercial, computer science and biology background
- Unique value addition to companies through a combined understanding of theories from multiple disciplines.

## Fun Electives

### BABS2011

In BABS2011 you get to expand your knowledge and understanding of a current trend in the Biotech world, which you will present to both technical and non-technical stakeholders, thus giving you real world experience into that field.

### BABS3061/BABS3071

With BABS3061/3071 you can either pursue biotech in a medical (3061) or commercial (3071) field



# EARTH SCIENCE

...

## Major Description

Earth Scientists study the nature and evolution of the structure of our planet, covering everything from natural crystals and fossils to the powerful forces that drive earthquakes and volcanoes and move continents across the globe. Field work in different regions of New South Wales is an essential part of geology courses, giving people the chance to not only learn how their works applies in the practical sense, but also with variety to the different unique environments in NSW.

## Skills Gained

- Utilisation of state of the art facilities and equipment
- Analytical skills across a broad spectrum of environments, making you a suitable candidate for any location
- Genuine field work

## Fun Electives

### GEOS3811 + GEOS3821 + GEOS3281

→ using GIS (Geographical Information System) in order to understand the world around us better.

Then getting to apply that into a field trip where you can use your skills in a meaningful way.



# ECOLOGY



## Major Description



In Ecology, you're concerned about the relationship between animals and their environment. This has a multitude of applications in the world, particularly in the world of eco-conservation and evolutionary biology

## Skills Gained



- Field trips and work experience in a variety of ecosystems, making you a good candidate for Australian ecology jobs (some cases even international)
- Understanding of interdisciplinary concepts and climate policy

## Fun Electives



**BIOS6723** → Going to Botswana to actually travel and experience cross-continental ecosystems. You also get the chance to work internationally with other universities.

# FOOD SCIENCE



## Major Description



This major focuses on the beginning to end process of our food from farm to plate. It delves into the science behind food interactions between other foods and humans, such as the nutritional benefit and the incorporation of particular ingredients within a product, but also focuses on the processes within the food industry that ensures safe consumption and utilisation by consumers.

## Skills Gained



- Analytical techniques when analysing chemical reactions
- Gain an overall understanding of the food service and manufacturing industry
- Quantitative and qualitative techniques to analyse food compositions

## Fun Electives



### FOOD3020

→ Here, you will make lots of food in your experiments and learn all about food preservation through your field trips!

### FOOD3030

→ Learn about how our food passes quality assurance and quality control adopted by the government to ensure consumer safety and manage potential health risks

# GENETICS



## WHAT DO YOU LEARN IN THIS MAJOR?

“ If you're interested in how genes can affect all living organisms then this is the major is for you! Here, you'll be provided with a general overview of this major, which will allow you to specialise in areas of genetics such as conservation biology, human genetics etc. ”

## WHAT DO YOU GAIN?

→ Analytical skills when analysing our genetic makeup

→ Lab skills to analyse microorganisms

## WHAT ARE SOME FUN ELECTIVES?

“ **BINF3010**: gain a new skill of Linux by analysing DNA and protein sequences that explain our evolution ”

“ **BABS3151**: learn about how our personal genetics have evolved and how this has affected our human development, evolution and disease → very helpful if you are interested in doing an Honours project in molecular bioscience ”



# GEOGRAPHY

## WHAT DO YOU LEARN IN THIS MAJOR?

“ This major looks at how our activities, ranging from physical, social, cultural and economical, have impacted our environment. If you are interested in urban management, regional planning, environmental planning or anything related to geographical issues, then this major is for you. ”

## WHAT DO YOU GAIN?

→ Qualitative and quantitative techniques that are applicable in field work – practical skills

→ Data analysis skills

## WHAT ARE SOME FUN ELECTIVES?

“ **GEOS2291**: understand earth's systems and learn about how human activities have impacted the atmosphere, where we now learn how to sustainably manage our Earth. ”

“ **GEOS3731**: gain an appreciation and understanding of the coastal environment and the hazard management issue. Be excited to go on a field trip to the beach and ocean with a combination of fun and work. ”

“ **GEOS6733**: gain practical experience by going on a field trip and applying the techniques learned in lecture. ”



# IMMUNOLOGY



## WHAT DO YOU LEARN IN THIS MAJOR?

“ If you're interested in improving or are curious about human health, then this major is for you! Here, you'll learn about our immune system and through the combined understanding of immunology, pathology and microbiology, provide a diagnosis or management for current and future diseases that may arise. ”

## WHAT DO YOU GAIN?

- Lab skills
- Immunological techniques when informing treatment
- Analytical skills; looking at diseases and vaccinations

## WHAT ARE SOME FUN ELECTIVES?

“ **MICRO3061** → learn about the ins and outs of virus and diseases. Learn about how viruses successfully evade into your body and learn how antivirals are developed ”



# MARINE AND COASTAL SCIENCE

## WHAT DO YOU LEARN IN THIS MAJOR?

“ Interested in the marine environment? Here, you'll learn all sciences between biology to geology that'll help you understand life in the marine environment. From learning about life on the shore and in the oceans, to the topography of the ocean floor, you'll gain an appreciation of the coastal and oceanic processes that will allow you to form an understanding of today's environmental problems. ”

## WHAT DO YOU GAIN?

- Analytical skills from field and laboratory data
- Monitoring techniques and field observations that allow you to monitor ecological problems
- Socio-political factors combined with environmental outcomes
- Critical thinking

## WHAT ARE SOME FUN ELECTIVES?

“ **BIOS1301**: think all about preserving our current environment ”

“ **GEOS3731**: gain an appreciation and understanding of the coastal environment and the hazard management issue. Be excited to go on a field trip to the beach and ocean with a combination of fun and work. ”

# MATERIAL SCIENCE



## WHAT DO YOU LEARN IN THIS MAJOR?

“ Interested in the production of materials, then this major is for you! Learn about the different types of materials that have been engineered for a particular purpose based on their structure and properties on fun site visits! ”

## WHAT DO YOU GAIN?

- Laboratory skills
- Critical, analytical and problem solving skills

## WHAT ARE SOME FUN ELECTIVES?

“ All the good classes are your core courses ”



# MATHEMATICS

## WHAT DO YOU LEARN IN THIS MAJOR?

“ If you're interested in the increasing range of quantitative careers such as finance, engineering and modelling, this major offers a strong foundation. You'll be covering areas of applied mathematics, pure mathematics and statistics, to really enforce a deeper fundamental understanding of your field! ”

## WHAT DO YOU GAIN?

- Quantitative reasoning and mathematical modelling
- Critical, analytical and problem solving skills

## WHAT ARE SOME FUN ELECTIVES?

“ **MATH3041** - Why are no two snowflakes alike? When will the next stock market collapse occur? Dive into mathematical modelling for real world systems! This course surveys mathematical techniques to critically evaluate the real world. ”

“ **MATH3102** - Look into dynamical systems and chaos; how physical, biological and ecological systems change over time! ”

# MATHEMATICS FOR EDUCATION



## WHAT DO YOU LEARN IN THIS MAJOR?

“ This major is for anyone studying a double in Bachelor of Education/Science! If interested in diving into the fundamentals of mathematics, this delves into pure mathematics, applied mathematics and statistics so you can set up that next generation of mathematicians! This will also ensure you meet all accreditation requirements within the NSW Institute of Teachers. ”

## WHAT DO YOU GAIN?

- Quantitative reasoning and mathematical modelling ”
- Fundamental reasonings and conceptual analysis ”
- Mathematical history and teaching ”

## WHAT ARE SOME FUN ELECTIVES?

“ **MATH3560** - Look into the history of mathematics, how it was used and understood in the past, and the long story of how familiar mathematical concepts grew into their present form! ”



# MICROBIOLOGY



## WHAT DO YOU LEARN IN THIS MAJOR?

“ Microbiology looks at the smallest forms of life - bacteria, viruses, archaea, fungi and protozoa. You'll be looking at how these organisms impact our lives, our food, livestock and the environment. The genetic engineering of microorganisms is a fundamental aspect of molecular biology and the way of the future! ”

## WHAT DO YOU GAIN?

- Mathematical and quantitative analysis ”
- Principles of molecular biology, genetics and disease ”
- Lab and analytical skills ”

## WHAT ARE SOME FUN ELECTIVES?

“ **BABS3061** - Look at the principles and techniques that lead to biotechnology medical innovation! You'll have the opportunity to partake in practical work including production of a recombinant monoclonal antibody fragment and assess its diagnostic and therapeutic potential! ”

“ **BABS3200** - You'll be studying the design and construction of novel biological systems or the redesign of existing biological systems. Work on making biology easier to engineer through an insight into the assembly and design of interchangeable biological parts. ”

# MOLECULAR & CELL BIOLOGY



## WHAT DO YOU LEARN IN THIS MAJOR?

“ This major explores the continuing development of recombinant DNA technology, going through fundamental components of biological and medical science. This field of study plays an important role in many aspects of modern medicine, genetics, evolutionary biology, bioinformatics, biotechnology and genomics. ”

## WHAT DO YOU GAIN?

- Principles of cell biology, biochemistry and molecular biology ”
- Lab and analytical skills ”
- Literature and scientific writing and research ”

## WHAT ARE SOME FUN ELECTIVES?

“ **BABS3281**: Have a look at molecular biology techniques commonly used in biomedical research. Through this course, you'll look at examples of research within cholesterol metabolism, drug discovery, protein methylation and long non-coding RNA expression. ”



# NEUROSCIENCE



## WHAT DO YOU LEARN IN THIS MAJOR?

“ Neuroscience introduces you to the biological and behavioural aspects of the nervous system. This major will teach you all about the human brain and get you working on finding ways to prevent or cure neurological and psychiatric disorders! ”

## WHAT DO YOU GAIN?

- Lab and analytical skills in observing neural structures and connections ”
- Literature and scientific writing and research ”

## WHAT ARE SOME FUN ELECTIVES?

“ **ANAT2411**: This walks through neuroanatomy, providing you with a thorough understanding of the structure, development and function of the brain. ”



# PATHOLOGY

## Major Description

Pathology is all about the understanding of the causes of disease.

This major will teach you various disease processes such as inflammation, wound healing and immuno-logical responses and the molecular mechanisms that underlie the development of disease.

You will develop an in-depth knowledge of different diseases and how they work.

## Fun Electives

**PATH3210** - You'll build an understanding of how different imaging techniques work and how to obtain thorough data about disease processes.

## Skills Gained

- Diagnostic laboratory investigation
- Digital imaging and clinical analysis of different diseases

# PHARMACOLOGY

## Major Description

Pharmacology is the study of drugs and the effect they have on living tissues and the normal body functions of humans and animals. You will be looking at the efficacy of drugs, ability of the body to metabolise them and the toxicology and side effects. You'll also be looking at the design of drugs, drawing on an understanding of crystal structures and molecular modelling!

## Fun Electives

**PHAR3251** - You'll be looking at the pharmacology of different drug classes, the effects of drugs on the major organ systems and emerging therapeutic strategies based on advances in understanding cellular physiology and drug action.

## Skills Gained

- Clinical laboratory skills
- Skills in rational drug design

# PHYSICAL OCEANOGRAPHY

## Major Description

If you're passionate about the environment, this major is a great way for you to create a real, meaningful impact! Physical Oceanography involves the measurement, modelling and prediction of processes that form the oceanic and atmospheric system. You'll be looking at how familiar mathematical concepts such as fluid flow are used in the context of the ocean!

## Fun Electives

**PHYS2801** - You'll walk through the main physical principles that govern the behaviour of the atmosphere and how to apply them to important questions about weather and climate. You'll determine concepts such as the likelihood of storms developing and interpreting charts like those found on the Bureau of Meteorology!

## Skills Gained

- Interpreting and analysing charts and graphs
- Mathematical modelling in regards to real world systems

# PHYSICS

## Major Description

This major builds upon laws and concepts you may already be familiar with. You'll be applying this to practical and theoretical problems as well as the development of new technologies. As part of your studies, you'll be exposed to lab work, research as well as hands-on projects to apply your knowledge!

## Fun Electives

- **PHYS3118** - Take a look at the quantum physics of solids and devices! You'll be covering how quantum systems interact and how quantum devices operate - looking at topics like charge carriers in semiconductors, quantum confinement and low-dimensional devices as well as nanoelectronics.

## Skills Gained

- **PHYS3115** - Discover how particle physics impacts on the structure and chemical composition of the universe! You'll be given an introduction to modern elementary particle physics from both an experimental and theoretical point of view.
- Lab and analytical skills
- Scientific method and research

# PHYSIOLOGY

## Major Description

Physiology is all about what makes human bodies work - how the organs function, how humans grow and develop and what happens to bodily functions during disease and ageing.

You'll explore how cells interact within these bodily processes and conduct practical experiments in regards to different bodily fluids and parts.

## Fun Electives

**NEUR3101** - Conduct practical research to reinforce your understanding about muscle and motor control! More specifically, the relationship between integrative neuromotor function, movement physiology and cellular and molecular physiology underlying muscle and motor control.

## Skills Gained

- Lab skills
- Critical, analytical and problem solving skills

# PSYCHOLOGY

## Major Description

This major explores the science of behaviour and mental processes, broadly covering biological, abnormal, cognitive, forensic, developmental and social psychology. You'll be able to develop your communication skills and apply psychological principles to personal, social and global issues!

## Fun Electives

**PSYC3241** - Gain a hands-on understanding of how memory works in humans, using animal research! You'll get to work with and observe rodent behaviour through your laboratory component to learn about the origin and treatment of clinical disorders.

## Skills Gained

- Critical thinking
- Communicating complex concepts

# STATISTICS

## Major Description

Statistics looks at the process of seeking answers to a wide variety of problems through analysing data. You'll have a look at three key areas: probability and stochastic processes, statistical inference and modelling as well as modern statistical computing methods. In an increasingly data driven environment, statistical skills are flexible and transferable, and can be applied to almost any industry!

## Fun Electives

**MATH3831** - Gain an understanding of how social and market research is conducted! You'll have a specific look at issues related to survey sampling, and questionnaire design and analysis.

## Skills Gained

- In-depth data analysis and quantitative reasoning
- Critical, analytical and problem solving skills

# VISION SCIENCE

## Major Description

Vision science looks at all the sensory processes that underlie vision and the understanding of vision-related technologies. Through practical training and research, you'll gain a comprehensive understanding of the methods and experimentation used within laboratory and industry focused research careers!

## Fun Electives

**OPTM3133** - Review how the eyes work together to form single image binocular vision! Through this course, you'll build clinical skills to assess visual functions and learn to detect non-strabismic binocular vision anomalies!

## Skills Gained

- Lab and analytical skills
- Scientific method and research

# WHAT ARE THE TRADITIONAL JOB PATHWAYS FOR PEOPLE IN SCIENCE?

Times have changed, and traditional job pathways are becoming less and less common, giving way to portfolio careers, hybrid roles, gigs and virtual arrangements. Nowadays, people often have multiple careers, and increasingly value more diverse experiences and daily freedom.

## WHY SHOULD ONE PURSUE A TRADITIONAL CAREER PATH THEN?

Traditional career paths offer more financial and social stability compared to alternative choices, with clear goals along the pathway to aim for and follow as a guide. Furthermore, following a conventional career means that mentors and relevant resources will be more readily available. Finally, traditional jobs often come with easier societal recognition.



## WHAT TRADITIONAL PATHWAYS ARE THERE IN SCIENCE?



### ACADEMIA

Often, those who are interested in research and academia begin with a Bachelor of Science (usually 3 years), and can end up in positions as research scientists or academics in universities and funded by the government.

A career as an academic will often begin with **short-term or casual positions** as a tutor (look for opportunities within your faculty). From this point, it is recommended to obtain highly competitive marks, strong relationships with faculty and successful admission to an honours program. You can also distinguish yourself through excellence in teaching and research, professional experience or take up extracurricular activities.

Today most candidates need a **PhD** to obtain a full-time position at a university. This usually requires either having completed a Masters (typically one to two years) or having done Honours in a relevant field. Postgraduate research allows one to gain a PhD (nominally a three year full-time degree) and begin applying for work as an associate lecturer.

### RECOMMENDED

- *Short-term/casual positions e.g. tutor roles*
- *Competitive marks*
- *Strong faculty relationships*
- *Honours program*



PhD students may also apply for a **teaching fellowship**. This gives them a teaching load that comes with an expectation of research output, which can include progress on their PhD. Following from this, you can become lecturers, academics who typically possess a PhD and significant teaching experience and eventually senior lecturers after four to six years of experience.



An associate professorship represents a university's recognition of your excellence in teaching and research and finally professorship means that you have excelled at making significant contributions to your field of study, and over time, achieved recognition both in Australia and internationally for your research.

## RESEARCH



Another alternative is to work in research for **organisations** and for the **public sector** for the government. This includes, most notably, the CSIRO which requires a PhD or equivalent and proven research ability in your field. Here, you can conduct innovative research leading to scientific achievements that are aligned with our strategies and have a positive impact.

Depending on your field of study, there may be institutions that directly relate to your degree, such as Cochlear and AstraZeneca in the biotechnology space and the ASIO for more quantitative majors.



Postgraduate education in a relevant field is also very important to gain an upper edge in these types of jobs.

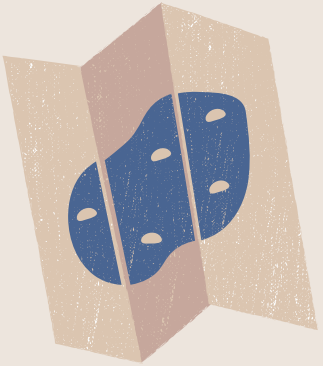
It is best to have a proven track record of conducting research, and to prove that you are capable of managing multiple projects within deadlines and budgets with relevant industry experience, internships or extracurriculars.



# OTHER USES OF MAJORS

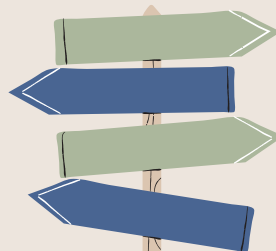
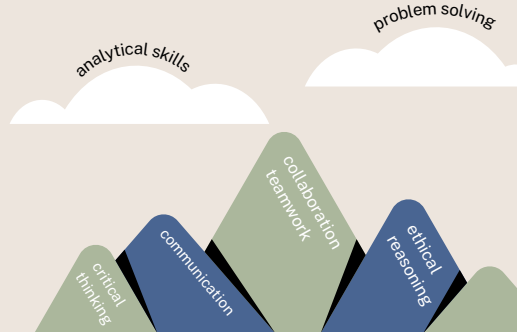


If you have an interest in a science major however none of the traditional job pathways appeal to you, there are still countless other opportunities with your degree! Traditional job pathways are becoming increasingly less popular, with people instead utilising skills and experience learnt through their degrees to excel in other fields.



A science major will teach you invaluable **analytical** and **problem solving skills**. The critical thinking, collaboration and teamwork, ethical reasoning and oral and written communication learnt through any science major will make you highly employable, and in demand across many sectors. So while you will be able to work in a range of scientific fields, such as chemistry, physics or biology, the skills gained are easily transferable to a career in something like finance, commerce, IT, management, business or technology, thus creating immense uses for your major.

On the next page are some examples for each major of career opportunities that differ slightly from the traditional job pathways. However, remember that these are only a small selection of examples, and don't even remotely cover the wide range of possibilities resulting from your science major.



BIOLOGY

BIOTECHNOLOGY

MICROBIOLOGY

MOLECULAR +  
CELL BIOLOGY

Majoring in biology or related fields isn't limiting you to just becoming a biologist.

There are plenty of exciting opportunities that you can use your major towards, such as a **forensic scientist**. A forensic scientist collects and analyses biological evidence such as DNA or fingerprints to assist in criminal investigations.

Another use of the major could be for a **genetic engineer**. This refers to the manipulation of an organism's DNA, rearranging certain fragments to modify the genetic composition of the organism.

Both a forensic scientist and genetic engineer have real-life impacts, through assisting in uncovering the truth in an investigation or by contributing to medical advancements in diseases, antibiotics and hereditary problems.

GENETICS

One pathway you could take using a bioinformatics or genetics major could be as a **genetic counsellor**. This involves helping provide information about genetic disorders to families, and advising and guiding individuals undergoing genetic testing. You will be expected to explain the results and impacts of tests to your clients, and advise them on how to best act on this information.

BIOINFORMATICS

An alternative use could be as a **DNA analyst**, where you will prepare, analyse and interpret results for DNA. This could result in identifying genetic conditions, performing DNA tests or even working in law enforcement settings and on crime scenes.

## Chemistry // Pharmacology

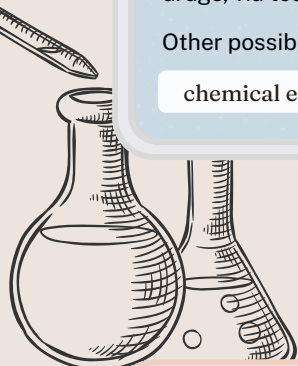


There are many uses for a chemistry or pharmacology major outside of being a chemist or pharmacist.

A quality control technician is one of these careers. In this career, you will be ensuring the quality and effectiveness of a company's products, monitoring and testing a company's production processes to ensure all standards are sufficiently met.

Another possibility is working as a toxicologist in which you would be determining the presence of substances in a body, such as poison, alcohol or drugs, via testing various tissue and blood samples.

Other possible jobs with these majors include: pharmaceutical sales representative, chemical engineer and pharmacologist.



## Earth Science // Ecology // Geography

A geography, earth science or ecology major can be used for many exciting opportunities outside of traditional jobs such as a geographer or ecologist.

One example is an environmental consultant. In this role, you would be working alongside companies and organisations to provide advice about their impact on the environment, and suggesting ways to improve environmental sustainability.

Another possibility is working as a geopolitical analyst, which involves travelling to different areas to observe current economic and political systems, events and trends in different geographical regions. This research can then be used to influence policymakers for international relations.

Other opportunities with these majors include cartographers, seismologists and environmental scientists.

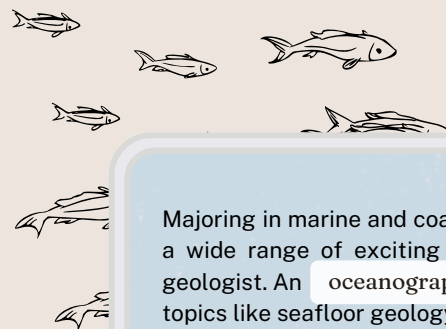
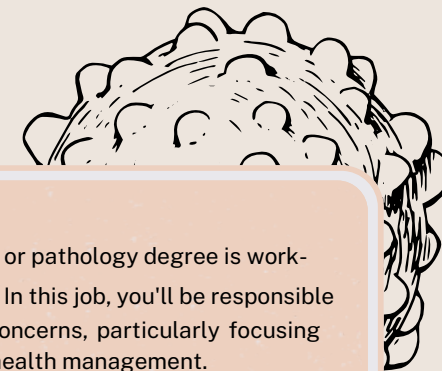


## Immunology // Pathology

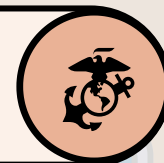
One less traditional pathway of an immunology or pathology degree is working as a health communications specialist. In this job, you'll be responsible for educating communities on public health concerns, particularly focusing on communicable diseases, healthy living and health management.

Another alternative with these majors is an epidemiologist which involves studying patterns and causes of diseases in order to predict and possibly control diseases.

However these two jobs are only a small selection of possibilities, with other job options include working in biochemistry, biophysics, haematology, veterinary pathology and virology.



## Marine and Coastal Science // Physical Oceanography

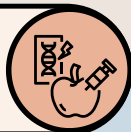


Majoring in marine and coastal science or physical oceanography can lead to a wide range of exciting careers, such as an oceanographer or a marine geologist. An oceanographer examines marine ecosystems, investigating topics like seafloor geology, ocean life, circulation, and water compounds and organisms.

Alternatively, a marine geologist researches the impact of movements and occurrences in the Earth's crust on the ocean and the environment, an example being examining how shifting tectonic plates lead to various environmental disasters.

Other opportunities utilising these majors include a marine biologist, marine chemist, marine engineer and a marine researcher.

## Material Science // Food Science



There are many uses for a degree in material science or food science that lie outside the traditional job pathway.

One of these is working as a **synthetic chemist**. This involves testing and developing chemical compounds in order to create new material. This is required for nearly every industry, including manufacturing and food industries.

Another possibility with these majors is working as a **laboratory manager** where you will be required to oversee laboratory operations and implement quality assurance procedures, ensuring that the laboratory runs smoothly and experiments are conducted accurately.

Other job options include an **art therapist**, **aviation psychologist**, **career counsellor**, **forensic psychologist** and a **sports psychologist**.

## Mathematics // Mathematics for Education

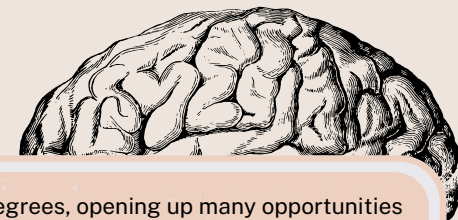


The problem solving and critical thinking skills learned in a mathematics major are applicable in a variety of different careers. One of these is as an **investment analyst** where you would be assessing economic and market trends, examining financial statements, analysing investment opportunities, compiling investment recommendations and advisory reports, developing financial models and enhancing investment portfolios.

Another career is a **cost estimator**, where you work alongside sales teams and other departments to develop project plans by quantifying cost factors, looking through blueprints and technical drawings, collaborating with clients and professionals, resolving cost problems, preparing estimates and evaluating profitability.

Other pathways of a mathematics major include an **algorithmic engineer**, **accountant** and **financial consultant**.

## Neuroscience // Psychology



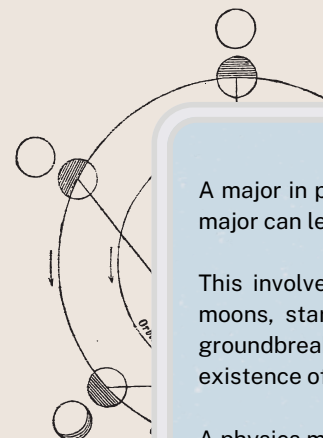
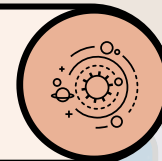
Psychology and neuroscience are both very broad degrees, opening up many opportunities for specialisation or non-traditional career pathways, such as a consumer or engineering psychologist.

A **consumer psychologist** works alongside consumer focus organisations and groups to estimate how appealing a product or service might be for consumers. It also may involve working on marketing or advertising campaigns to appeal to the target audience, or conducting research on relationships between consumers and their shopping and buying behaviour.

An **engineering psychologist** uses their knowledge of the mind and human behaviour to investigate how people interact with technology and machines. This is then used to help design and improve consumer products, technology, work settings and living environments.

Other job options include an **art therapist**, **aviation psychologist**, **career counsellor**, **forensic psychologist** and a **sports psychologist**.

## Physics



A major in physics doesn't just limit you to working as a physicist; in fact, this major can lead to countless other opportunities, such as a career in **astronomy**.

This involves the study of astronomical objects in space, including planets, moons, stars, galaxies, comets and universes. Astronomy has led to many groundbreaking discoveries, such as the origin and evolution of stars and the existence of the solar system.

A physics major can also lead to working as a **meteorologist**, where you will prepare accurate weather forecasts, conduct atmospheric research and interpret climate conditions.

Other pathways of a physics major include a **nuclear physicist**, **patent agent** and a **solar physicist**.

## Physiology // Anatomy // Vision Science



One non-traditional pathway from a physiology, anatomy or vision science degree is working as a **medical technologist**.

In this role, you will administer complex microscopic, immunologic, bacteriological, and biological tests on fluids, tissues and blood for diagnosis and treatment of diseases.

Alternatively, these majors could lead to work as a **physical therapist** where you will evaluate and treat body disorders, whether illness or injury, through exercise and other physical routines.

## Statistics



The analytical and critical thinking skills gained from a statistics degree can lead to a wide variety of careers, such as one in **data analysis**.

As suggested by the name, this primarily involves interpreting and analysing data, however also encompasses statistical techniques, database and data collection systems development, optimisation of data processes for quality and efficiency, analysing trends and patterns, and locating process improvement opportunities.

Similarly, these skills can be transferred into a career as a **computational scientist** where you will use computers to model and simulate the physical world, addressing scientific problems via computing principles.

# SINGLE DEGREES

## FACULTY OF SCIENCE

### Bachelor of Aviation (Flying)

A Bachelor of Aviation (Flying) allows you to learn the science behind aviation while also earning your flying licence. Alongside the practical training required to become a professional pilot, you'll also receive a solid theoretical and academic education in aviation management and safety, preparing you for global opportunities within the aviation sector.

### Bachelor of Environmental Management

A Bachelor of Environmental Management allows you to tackle major environmental issues such as climate change and sustainability, and making a positive impact. The degree incorporates practical experience, including field work, in order to provide you with the practical skills and knowledge necessary to work, or carry out research as an environmental scientist.

### Bachelor of Aviation (Management)

A Bachelor of Aviation (Management) prepares you to become an aviation manager, providing essential knowledge and skills in the fields of science, engineering, interpersonal relations, the environment and management. If you want to work in aviation, but not necessarily as a pilot, this degree gives you the foundation to advance to positions of management and influence within the aviation industry.

### Bachelor of Data and Decisions

A Bachelor of Data Science and Decisions is a multidisciplinary degree combining the power of science, engineering and business to prepare you for a career in an extremely in-demand global industry. This degree allows you to tailor majors and electives to your own interests, and you'll gain the theoretical and practical skills required to enter the field of data analysis.

### Bachelor of Engineering (Honours) (Materials Science & Engineering)

A Bachelor of Environmental Management allows you to tackle major environmental issues such as climate change and sustainability, and making a positive impact. The degree incorporates practical experience, including field work, in order to provide you with the practical skills and knowledge necessary to work, or carry out research as an environmental scientist.

## **Bachelor of Science (Advanced Mathematics) (Honours)**

This degree allows you to explore your love and passion in the vast specialties related to mathematics. Whether it be applied mathematics, pure mathematics or advanced statistics, this degree will enable you to apply different skills/methods that are applicable to a range of quantitative careers in areas like finance or technology.

## **Bachelor of Advanced Science (Honours)**

The Bachelor of Advanced Science (Honours) provides flexibility for you to explore the different science disciplines that are right for you. This degree forces you to use your innovative thinking to help delve into the world of scientific discoveries to develop creative solutions that resolve the biggest challenges at hand.

## **Bachelor of Science and Business**

This degree combines both Science and Business together to provide a business component to the different science majors. With two-thirds of your study being science-focused and the remainder being business-focused, the skills developed will prepare you for a career in business within a scientific environment.

## **Bachelor of Science (International)**

Science with International studies prepares students with science majors for the increasingly globalised business and research environment. As part of the international program, students are able to study overseas with a UNSW partner university.

## **Bachelor of Life Sciences**

Life Sciences is a generalised degree that combines biological, environmental and medical science which equips individuals with transferable skills applicable in a range of health and medical fields. Providing fourteen different majors, Life Sciences is a flexible program allowing students to choose the right pathway for them.

## **Bachelor of Science (Honours)**

Building off from the Bachelor of Science, this Honours degree allows you to deepen your knowledge in a specific discipline via the perspectives, approaches and traditions learnt. Here, you can apply the transferable skills grasped via the research and write a thesis on where your interests lie.

## **Bachelor of Biotechnology (Honours)**

This degree focuses on integrating our understanding of cell biology and chemistry to create solutions and products that resolve issues within our environment. Here, you'll get to explore the trends and issues within a particular industry and practice scientific methods that help fight global challenges.

## **Bachelor of Medical Science**

This program combines the study of science and medicine, providing you with an extensive understanding of the human body, which forms the foundation for the practice of medicine. This degree is suitable for those looking for a career in biomedical research, or as a first degree before progressing to graduate medical or paramedical degrees.

## **Bachelor of Medicinal Chemistry (Honours)**

The Bachelor of Medicinal Chemistry (Honours) is a multidisciplinary degree combining biology, pharmacology and chemistry that will provide graduates with unique skills for a career in medicine. You will learn all about new drug design and development, and will undertake a supervised research project in your honours year.

## **Bachelor of Psychological Science (Honours)**

Psychological Science with honours expands on psychological science studies by enabling students to attain a provisional registration of psychology. As part of the honours programs, students undertake an independent research project and thesis on their own selected area of study.

## **Bachelor of Science**

The Bachelor of Science provides a lot of flexibility that allows you to explore the different disciplines that are suitable for you. Whether you are interested in oceanography or chemistry, this degree will provide transferable skills, which compliment the endless career opportunities available.

## **Bachelor of Psychological Science**

Psychological Science, whilst not quite the same as the Bachelor of Psychology program, provides just as strong of a foundation in building towards postgraduate studies. Though unlike Psychology, Psychological Science allows its students to select a major, facilitating them to hone in on an area of their interest.

## **Bachelor of Psychology (Honours)**

Psychology provides a holistic approach towards learning about the field of psychology, giving insights into the many ways our brain operates through behaviour and cognition. In addition to admission into the honours program, Psychology offers a variety of elective courses to choose from to help students realise their interests.

# DOUBLE DEGREES

## FADA (Faculty of Arts, Design and Architecture)

With the combination of a Science and FADA degree, students are set up for the future provided with a foundational background in scientific theory as well as critical thinking and adaptivity, allowing them to stand out from other applicants within the workforce. As transdisciplinary thinkers, students possess imaginatively unique methodologies and skillsets to transform contemporary society.

### Bachelor of Arts

The flexibility of an Arts degree provides students with the licence to explore a broad range of career aspirations while additionally developing transferable skills to think critically and communicate effectively. Covering humanities, social sciences, creative and performing arts, it is an adaptable degree suit to the range of skill, interest and career aspirations of each student.

#### Double Degree:

- Bachelor of Science/Arts\*
- Bachelor of Advanced Science (Honours)/Arts\*
- Bachelor of Environmental Management/Arts\*
- Bachelor of Science (Advanced Mathematics) (Honours)/Arts\*

### Bachelor of Education (Secondary)

As a multifaceted degree individuals are able to learn interpersonal skills and communication in order to make a direct contribution to the community. Through undertaking development in their selected specialisation, students gain professional teaching qualification, with the ability to foster the next generation in with the growing field of STEM.

#### Double Degree:

- Bachelor of Science/Education
- Bachelor of Science/Education (Secondary)

### Bachelor of Fine Arts

With a major in either studio practise or art theory, fine arts sets up students for professional practise and research skills to prepare them for a range of professional contexts. By exploring a range of artistic processes students are able to thrive and lead the future of global contemporary art and culture.

#### Double Degree:

- Bachelor of Science/Fine Arts\*
- Bachelor of Advanced Science (Honours)/Fine Arts\*

### Bachelor of Music

A Bachelor of Music develops students' talents in a diverse range of platforms while simultaneously cultivating expertise in their selected area of speciality. As an intensive pre-professional program, the degree effectively prepares students both theoretically and practically.

#### Double Degree:

- Bachelor of Music/Science

### Bachelor of Social Science

In an increasing interconnected society, Social Science prepares students to understand, analyse and influence the ever changing political, social and economic environment. Following with globalisation and development, students are able to utilise research and analytical skills related to policy-related work, allowing them to make a difference.

#### Double Degree:

- Bachelor of Science/Social Science\*
- Bachelor of Advanced Science (Honours)/Bachelor of Social Science\*

## Faculty of Engineering

Programs in the Faculty of Engineering are heavily rooted in an understanding and application of science, so being able to combine the faculties will undoubtedly bolster your academic standing by mastering the underlying principles. Similarly, having an additional skill set, which is yet closely related to the other, can be highly beneficial in optimising employability and opens your scope for looking for work in either industry.

### Bachelor of Fine Arts

With a major in either studio practise or art theory, fine arts sets up students for professional practise and research skills to prepare them for a range of professional contexts. By exploring a range of artistic processes students are able to thrive and lead the future of global contemporary art and culture.

#### Double Degree:

- Bachelor of Science/Fine Arts\*
- Bachelor of Advanced Science (Honours)/Fine Arts\*

### Master of Biomedical Engineering

As the biomedical industry is quickly becoming a product of ever-advancing technology, developing new solutions to long standing medical issues can allow students to have a profound impact on society.

#### Double Degrees:

- Bachelor of Engineering (Honours) (Materials Science & Engineering)/Master of Biomedical Engineering\*

### Bachelor of Computer Science

Computer Science is rapidly becoming one of the most popular degrees, and not without reason. Understanding the back-end of computing, both hardware and software, will no doubt be a vital skill set to have in the future.

#### Double Degrees:

- Bachelor of Advanced Mathematics (Honours)/Computer Science\*
- Bachelor of Advanced Science (Honours)/Computer Science\*
- Bachelor of Science (Computer Science)/Arts
- Bachelor of Science/Science (Computer Science)

### Bachelor of Engineering (Honours)

Engineering takes the fundamental principles of mathematics, physics and chemistry, and places them in the context of the real world, giving an insight into the intricate, innovative and not least vast developments of our society that engineering has aided. It also has a wide range of variability, offering 19 specialisations to hone in your knowledge in a particular area of interest.

#### Double Degrees:

- Bachelor of Science (Advanced Mathematics) (Honours)/Bachelor of engineering (Honours)\*
- Bachelor of Advanced Science (Honours)/Engineering (Honours)\*
- Bachelor of Advanced Mathematics (Honours)/Engineering (Honours)\*
- Bachelor of Advanced Science (Honours)/Engineering (Honours)\*
- Bachelor of Advanced Mathematics (Honours)/Engineering (Honours)\*

\*This double degree falls under Faculty of Science

\*This double degree falls under Faculty of Science

## Faculty of Law of Justice

Combining a Bachelor of Laws with a science degree will allow you to develop a broad range of transferable skills sought after by a range of industries, thus widening your career options for the future. It is also perfect for those looking to carve out a niche in the legal sector, especially with opportunities across patents, intellectual property and forensics.

### Bachelor of Laws

The Bachelor of Laws provides you with the skills and qualities to become a qualified legal practitioner or excel in other related fields. UNSW Law & Justice emphasises a strong sense of social justice within the program. At UNSW, undergraduate law must be studied as part of a double degree; you will choose a second degree from a wide range of UNSW degrees and graduate with two qualifications.

#### Double degrees:

- Bachelor of Science (Computer Science)/Law
- Bachelor of Psychological Science/Law
- Bachelor of Science and Business/Law
- Bachelor of Data Science and Decisions/Law
- Bachelor of Science/Law
- Bachelor of Science (Advanced Mathematics) (Honours)/Law
- Bachelor of Advanced Science (Honours)/Law
- Bachelor of Psychology (Honours)/Law
- Bachelor of Medicinal Chemistry (Honours)/Law

## Faculty of Medicine and Health

### Bachelor of Exercise Science / Master of Physiotherapy

A deep and detailed understanding of human biomechanics and health is an underrated field that is integral to learning and helping or teaching others about illness and injury. In addition, this program has its own integrated professional experiential learning stream with students of similar educational backgrounds.

### Bachelor of Vision Science/Master of Clinical Optom

This program both provides theory behind vision, and heavily engages students in the practical component to help prepare them for clinical practice in the optometry field.

## UNSW Business School

Combining business with science prepares you for today's increasingly competitive and business driven society. Alongside your science degree you can learn skills in business and management providing you with the knowledge to excel in a diverse range of industries.

### Bachelor of Actuarial Studies

Bachelor of Actuarial Studies allows you to apply advanced analytical techniques to help businesses, governments, not for profit organisations and individuals make critical decisions. This Actuaries Institute accredited degree provides experience in evaluating risks and opportunities and using data analytics for real world purposes.

#### Double Degrees:

- Bachelor of Actuarial Studies/Science
- Bachelor of Actuarial Studies/Science (Advanced Mathematics) (Honours)

### Bachelor of Commerce

Bachelor of Commerce lets you undertake a range of experiences to understand business essentials and begin building a portfolio demonstrating skills to your future employers. This innovative business degree allows you to specialise in a major and expand your skills through guaranteed industry learning experiences.

#### Double Degrees:

- Bachelor of Commerce/Science
- Bachelor of Commerce/Advanced Science (Honours)
- Bachelor of Science (Advanced Mathematics) (Honours)/Commerce\*
- Bachelor of Engineering (Honours) (Materials Science & Engineering)/Commerce\*

### Bachelor of Economics

Economics is an influential social science exploring human behaviour and decision making, providing you the foundation to address traditional economic issues alongside human challenges. This degree teaches highly transferable analytical and critical thinking skills that are valuable in a diverse range of industries and careers.

#### Double Degrees:

- Bachelor of Economics/Science
- Bachelor of Economics/Science (Advanced Mathematics) (Honours)
- Bachelor of Economics/Advanced Science (Honours)

\*This double degree falls under Faculty of Science

\*This double degree falls under Faculty of Science

Q Section 4: Industries X

Q Trends in the Market



## Trend 1: Digitalisation of Health Services

The advancement of technology specifically in healthcare has allowed for the provision of accessible health assistance, improving access to timely services.

### MOSH

Advancing beyond traditional health services Mosh implements telehealth through interactive questionnaires and zoom consultations to challenge stigmas about men's health. Covering services from hair loss, skin conditions, mental health and sexual health issues like premature ejaculation and erectile dysfunction, Mosh demonstrates the effectiveness of a digital-first healthcare system.

- While traditional healthcare will face the challenge of treatment becoming increasingly automated, rather than replacing healthcare practitioners, such technologies instead will compliment them - enabling greater high-level thinking, creativity, and decision-making.
- Despite increasing the effectiveness of treatments and diagnoses, positive patient experiences are imperative to ensure patients feel safe and supported throughout the process. Thus, as medical technologies continue to develop, the labour market in upcoming years will see an increased importance on interpersonal skills.

### RELATED MAJORS :

- Anatomy, bioinformatics, immunology, neuroscience, pharmacology, physiology, psychology and vision science.
  - As medical technologies develop and health services become more digitally accessible science degrees now more than ever are required to fuel innovation and development.

2

## Trend 2: Gig Economy + Self service

The gig economy refers to the workforce based on flexible, temporary or freelance jobs often connecting clients through an online platform.

- With a growing on-demand workforce the gig economy allows businesses to access the right skills and resources at the right time, without the need for large investments of time and cost associated with recruiting and training. Additionally, individuals themselves achieve greater autonomy, providing choice and flexibility in their daily lives.

### CSIRO

By implementing gig economy-based work companies are able to outsource a wide set of skills around the world. Conversely, individuals attain greater self-autonomy with organisations that interest them, potentially leading to more job satisfaction. This is evident through CSIRO's own academic papers based on 'Ocean Futures' through implementing a 'sharing economy'.

- In light of the pandemic, individuals experiencing working from home have recognised the importance of flexibility and independence. Challenging traditional work hours have allowed individuals to gain greater control over their work.
- More people are finding that self-employment is a better option in comparison to conventional employment. This trend will continue to grow in the next 5 years challenging companies to adapt and reflect current values.

### RELATED MAJORS :

- Biotechnology, Earth science, Ecology, marine and coastal science and physical oceanology.
  - As scientific research advances and adopts more flexible approaches to outsourcing, science-based research will experience first-hand the addition of greater autonomy and contribution.

3

## Trend 3: Automation

At its core, automation is about implementing technological systems which reduce the amount of workload placed upon its workers, cutting down the need for human labour for tasks that are repetitive and easily replicated.

- Consequently, automotive processes save time and allow resources to be diverted elsewhere into more necessary tasks, allowing companies to remain smaller while being more efficient and agile.

Evitability, there are growing fears as to whether automation of the workforce will replace jobs, and while this is true to an extent implementing automated technologies would actually increase the enjoyability of tasks.

- By eliminating repetitive and low-value tasks, workers are consequently allowed more time to add more creative and strategic input to the businesses they work for. This could dramatically improve employee engagement and give workers a renewed sense of purpose.

### SIGNALL

The Hungarian company has created the world's first fully automated sign language translation system. By leveraging AI and computer vision through integrated webcams and depth sensors the system is able to translate visual input into sentences for a hearing person to read.

- Over the next ten to 15 years, the adoption of automation and AI technologies will transform the workplace as people increasingly interact with ever-smarter machines. Consequently, just as the workforce continues to implement automatised technologies, likewise, companies will begin to seek out thinkers and strategists - individuals who are able to think creatively and critically, leading innovation for the future.

### RELATED MAJORS :

- Computer science, Bioinformatics
  - With advances in technology science and computer science, degrees alike will be required for the innovation and development of technologies to advance the future

4

## Trend 4: Augmented and Virtual Reality

The development of augmented and virtual reality has become a sophisticated tool with the ability to revolutionise the workforce requiring workers to develop new skills and evolve to work alongside technology in the workplace.

### IRISVR

ZGF Architects have implemented Iris to create a virtual reality to help clients visualise both space and data in three dimensions - used within fields of architecture, engineering and construction.

IrisVR is a leading software company that has developed systems to facilitate the transformation of projects designed in various rendering systems through a VR experience.

- The world is yet to see the best of these technologies however it is evidently clear that as these technologies continue to develop the workforce will place a greater emphasis on individuals with specialized skills and knowledge.
- Thus, due to increasing automation companies will shift their focus toward individuals with “human skills” such as creativity, problem-solving, and quantitative skills - abilities unable to be completed by technology.

### RELATED MAJORS :

- Computer science, Bioinformatics
  - While science-based jobs may continue to experience the integration of technologies such as augmented and virtual reality, degrees such as bioinformatics and computer science will contribute to its growth and development.

5

## Trend 5: Startup and VC rise

Startups aim to respond to changing consumer demands in order to develop a product or service that supports innovation. In a globally interconnected economy, startups act as a catalyst for innovation, generating jobs and boosting the economy.

### CANVA

Canva is an innovative user-friendly website with a no-code graphic design platform. In order to make the design more accessible, the drag-and-drop interface allows for an easier experience in comparison to programming languages and raw code.

- Consequently, startups demonstrate the effectiveness of reflecting consumer needs and societal values in order to create an effective product with the ability to challenge traditional norms.
- Startups are one of the growing industries and sectors within Australia, providing new innovations and services in order to provide tailored services with a strong focus on generating social impact.
- Following the technological boom of automation in the next 10 years the trend will continue to grow, catalysing innovation and technological advancement to meet the needs of an ever-growing and developing market.

## SECTION 5:

# STEM RELATED PROGRAMS



# WOMEN IN STEM- *related programs*

## SCHOLARSHIPS

There is a wide variety of scholarships available for women in STEM related programs. Below is an example, however you're often eligible for many more opportunities than you realise! Don't be afraid to do some research to find scholarships that apply to you!

### Defence Women in STEM Undergraduate Scholarships

[www.dst.defence.gov.au/partner-with-us/university/scholarships/women-in-stem](http://www.dst.defence.gov.au/partner-with-us/university/scholarships/women-in-stem)



#### What is it?

The Defence Women in STEM Undergraduate Scholarships are sponsored by the Defence Science and Technology Group, and are aimed at improving the representation of women in the STEM workforce by “encouraging high-performing women to continue their university study in Science, Technology, Engineering and Mathematics.”

#### Who is it for?

The scholarship is open for any woman-identifying Australian citizen who is commencing their second or third year of study at an undergraduate level, with at least two more years of study in the degree program. It is targeted towards applicants with strong academic results who study in STEM areas relevant to defence, and is also determined by factors such as “community leader-ship, STEM outreach and community involvement”.

#### Why should I apply?

The scholarship provides financial support for students who are studying, opportunities for STEM placements within Defence and mentoring by Defence STEM professionals.



# Networks and Mentoring

Going into a STEM career may result in you facing challenges, and can sometimes make you feel isolated. However, it's important to remember that you are never alone! There is a diverse community of other people in STEM who are there to support you and provide mentoring.

Additionally, UNSW has a range of student-run societies available, which are a great idea to check out if you're looking to meet similar-minded people or for other networking or mentoring opportunities.

## Societies for women in STEM:



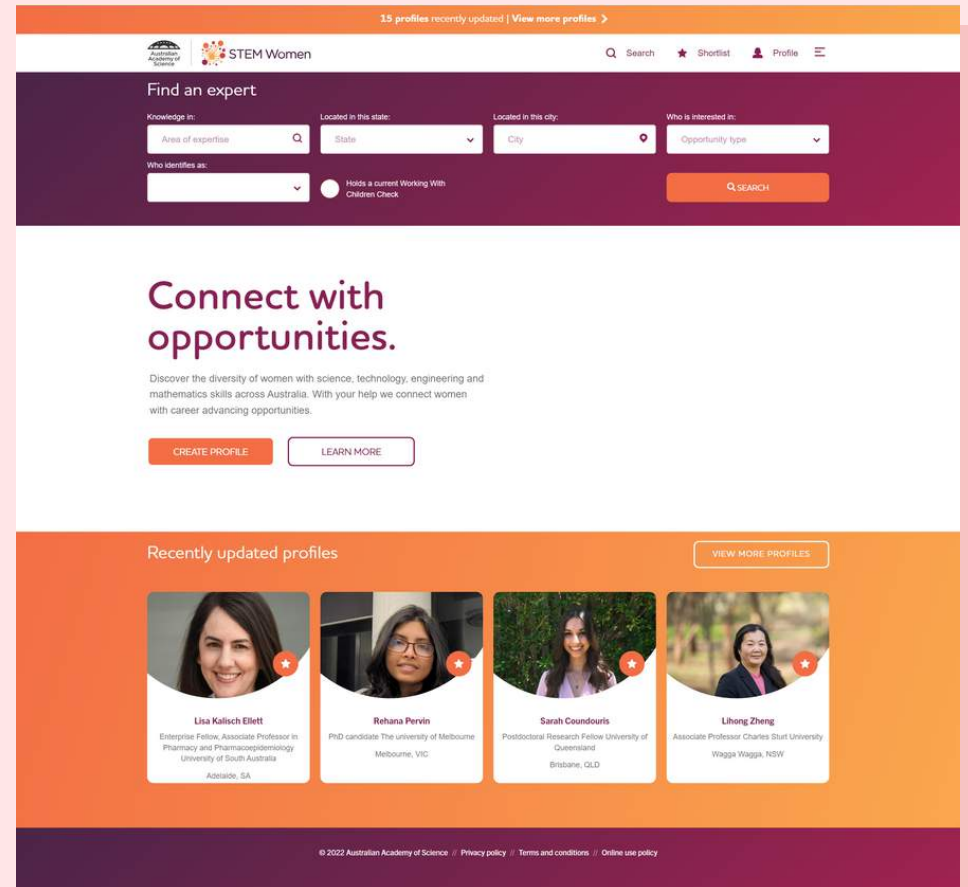
## STEM WOMEN

<https://www.stemwomen.org.au/> 

This website is an online directory of women in Australia working in STEM careers. STEM Women aims to help you discover the diversity of women within science, technology, engineering and mathematics, and connect you with **career-advancing opportunities**.

By enabling you to easily **connect** with diverse STEM experts, it aims to raise the profile and provide opportunities for women who may have experienced barriers, thus promoting **gender equity** in STEM.

STEM Women allows you to use a simple database in order to quickly find, shortlist and **contact a diverse range of STEM experts** for a variety of opportunities. These include reaching out and finding a **mentor**, discovering **speakers** for an event or conference, seeking an **expert opinion** or encouraging **nominations** for boards, committees and awards.



# CAREER DEVELOPMENT *programs*

It is important to develop an understanding of career opportunities and pathways available to you as you complete your degree. Below are two programs that aim to excel your career development journey alongside the completion of your degree, giving you better knowledge of the variety of career pathways available to you, and building your skills and confidence to set you up for success.



## Forage

Virtual Work Experience Programs

[www.theforage.com](https://www.theforage.com)



### WHAT IS IT?

Forage is an “open access platform designed to unlock exciting careers for students by connecting them with our company-endorsed Virtual Work Experience Programs”. These are online programs containing a series of tasks and resources that are designed to simulate the real-life experience of starting a career.

Each program aims to replicate a day in the life of a graduate, and develop skills needed for success. Online modules and resources are built and endorsed by leading companies to understand what skills they are searching for in graduates, and what a graduate will be doing in their company on a day-to-day basis. As you complete each module, you will unlock real work samples showing you how a graduate at that company would have approached each task, allowing you to self-assess your own work.

### WHO IS IT FOR?

Forage is open for everyone! The programs are completely free, and no prior work experience is needed. All you need to do is register to create a Forage account.

### WHY SHOULD I APPLY?

Forage provides a risk-free opportunity to try out a career in a leading firm. It allows you to gain a better understanding of the diverse career opportunities available to you, and build both technical and soft skills to prepare you for the world of work. They allow you to complete these Virtual Internships in your own time, with no pressure or risk of mistakes, where you’ll receive Certificate of Completion after each program.

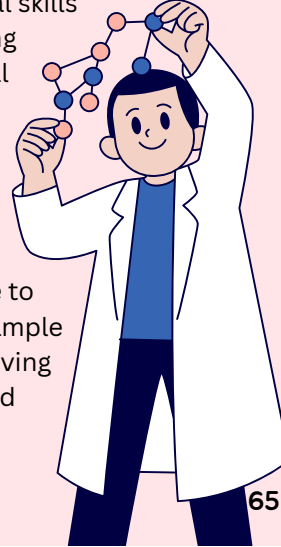
Some examples:

#### Quantum Data Analytics (5-6 hours)

- In this program you will act as a data analyst at Quantum, experiencing the work the data analysts do daily. You will learn “practical skills such as data validation, data visualisation, statistical testing and more”, and will be able to compare your work with real model solutions created by the Quantum team.

#### Lyft Back End Engineering (4-5 hours)

- This program allows you to take on practical tasks similar to those of Lyft engineers, giving you a feel of what it’s like to work as a Lyft back end engineer. You will be given work sample answers from the Lyft team after finishing each module, giving you a chance to see how top engineers would have handled each task.





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# STEM CAREER LAUNCHPAD

<https://www.unsw.edu.au/science/student-life-resources/student-opportunities/stem-careers-launchpad>



## WHAT IS IT?

The STEM Career Launchpad is a “personalised career development journey” that you can complete alongside your degree. Through this program, you’ll “collect professional development badges and earn awards that will help you to prepare for your career, explore different STEM careers and expand your professional network”.

There are three different awards you can work through - Bronze (Career Management Foundations), Silver (STEM Career Management) and Gold (Professional Experience). Each level has a set of badges which you need to collect to complete the level. By the end of the program, you will have a collection of badges and awards to reflect your career development journey.



You can register for the STEM Career Launchpad at any time during your science degree, and complete it at your own pace. This gives you the flexibility to progress as quickly or slowly as you like, ensuring that if you want to finish the program you do so by your last term of study. It is recommended for you to complete program alongside your academic courses over the span of your entire undergraduate degree.

Additionally, if you are only interested in certain aspects of the program you have the option to do as little or as much as you would like, with each badge and award developing your skills and understanding.

## WHO IS IT FOR?

Any student studying an undergraduate science degree (single or double) at UNSW is eligible for this program! You can begin at any stage in your degree, whether it’s first year or final year, however you are encouraged to start the program as early as possible to get the most out of it.

## WHY SHOULD I APPLY?

This program gives you the skills and tools to help you make informed career choices, and gives you the confidence to launch your career in the area of STEM that’s ideal for you. The program aims to help you:

01

Understand what it takes to be employable in an increasingly competitive and unstable job market

02

Develop key employability skills

03

Get work experience before you graduate

Additionally, you will receive AHEGS Accreditation from this course on your secondary transcript. Ultimately, this program will help you get the most out of your time at university and become a competitive graduate.



# STEM Career Launchpad

Launch your career while you study

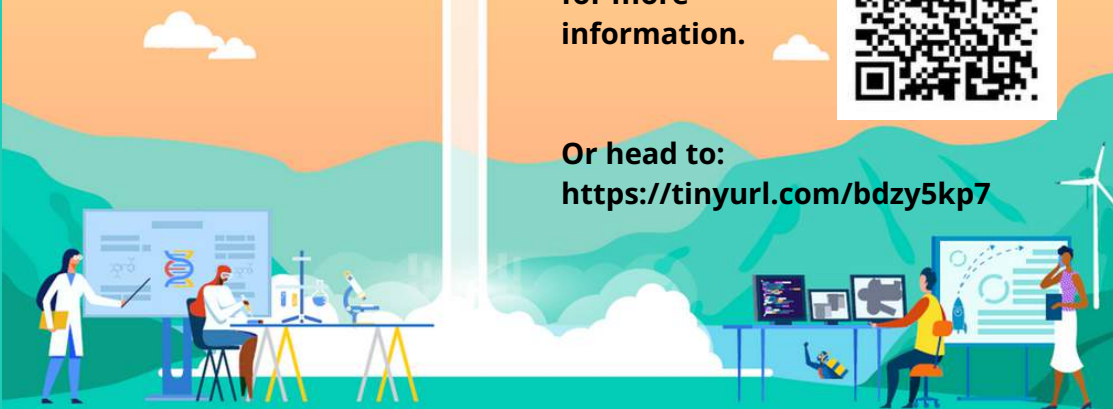
This co-curricular program will take you on a personalised career development journey that you can do alongside your academic courses.

Collect professional development badges and earn awards that will help you to prepare for your career, explore different STEM careers and expand your professional network.

Scan the QR code for more information.



Or head to:  
<https://tinyurl.com/bdzy5kp7>



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SYDNEY



## Work Integrated Learning (WIL)

**Gain genuine work experience in a science or technology-related work placement or project.**

Science WIL courses are credited towards your science program as science or free electives. They can be worth 6 or 12 UOC.

Scan the QR code for more information.



Or head to:  
<https://unsw.sharepoint.com/sites/Science-Student-Opportunities>

Pre-requisites: completed at least 48 UOC and minimum 65 WAM.

# OTHER PUBLICATIONS

<http://WWW.UNSWSCISOC.ORG>



## Meet Your Majors

A compilation of infographics describing each science major so you can find out whether or not a major is for you! It outlines the skills required, internships opportunities and career paths as well as fun facts for each major! We encourage you to read this alongside this Careers Guide! Read more on our website!



## Find Your Future

A compilation of interviews of penultimate students, graduates and alumni of degrees and majors within the Science faculty. To gain insight into how your major can shape, influence and kickstart your professional career, read 'Find Your Future' on our website!



## SCISOC CORE

The SCISOC CORE is a magazine that contains everything you'd want to read about, from interview tips to volunteering opportunities, as well as how to get more involved with our society! Read 'SCISOC CORE' on our website!



# UNSW SCIENCE SOCIETY

E-mail: [hello@unswscisoc.org](mailto:hello@unswscisoc.org)

Website: [www.unswscisoc.org](http://www.unswscisoc.org)

