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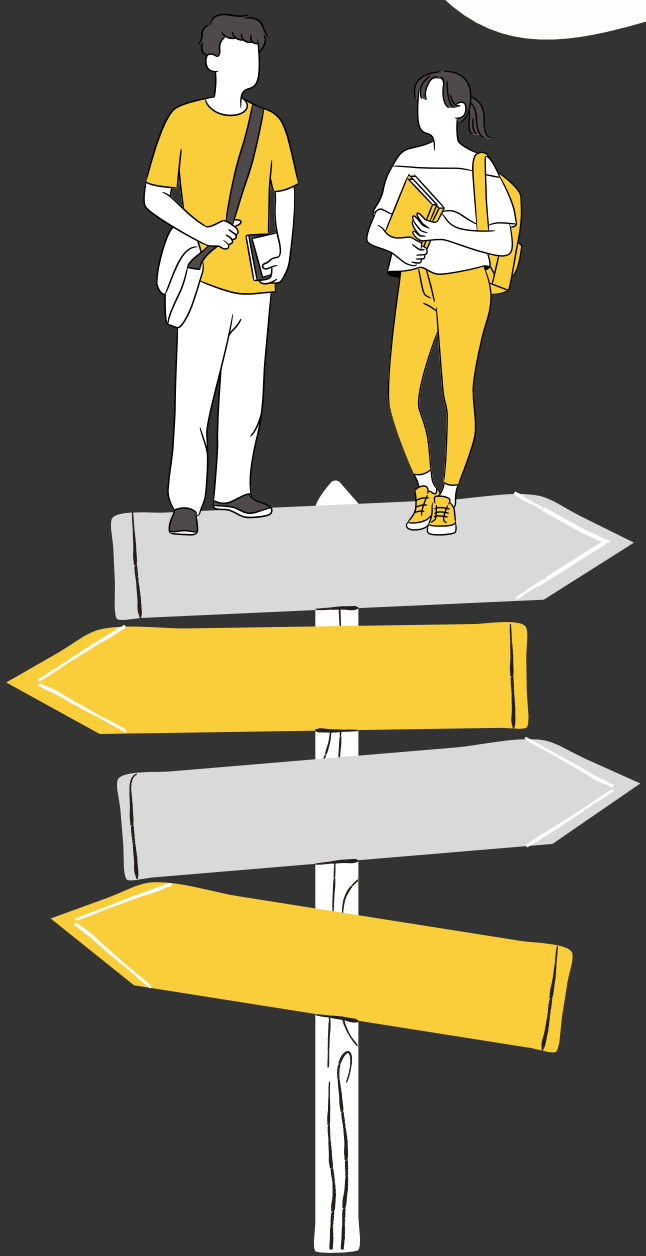
ELSOC

ELSOC FIRST YEAR GUIDE 2024



CONTENTS

PRESIDENT'S ADDRESS

Welcome to Electrical Engineering & Telecommunications (EE&T for short) at UNSW! Being accepted into the most renowned engineering program in the country is no easy feat and you all should be proud of yourself.

EE&T is certainly not easy and adjusting to uni life can be challenging, certainly if faced alone. Depending on the priorities you have and what you find important while you're here, there'll be academic, professional and social challenges you will face.

Here at ELSOC we are the student body of EE&T undergraduate students and our goals have always been to assist you face those challenges and better yourselves. Our 2024 team is more ambitious than ever to deliver newly developed and extended programs and events which we strongly encourage you to participate in.

So stay tuned into your email, keep track on our Facebook and Instagram, and get involved! I hope you share our excitement for 2024! Feel free to email me at president@elsoc.net if you have any questions or just want to chat.

- Brielle Papadopoulos

2024 ELSOC President

HEAD OF SCHOOL'S ADDRESS

Dear First Year Electrical Engineering and Telecommunication Students,

Welcome to the School of Electrical Engineering and Telecommunications at UNSW Sydney ! I would like to welcome each one of you warmly and enthusiastically to our vibrant EE&T community as you begin a new and significant chapter in your academic and personal journey.
We are honoured that you have chosen to be part of the EE&T community, which is the largest school in the field of electrical engineering in Australia. It is also the top school in Australia and consistently recognised within the top 50 globally by multiple international university rankings. It is a pleasure to see we attract promising students like yourselves with the best and brightest minds in the field from Australia and other countries.

Our school has a broad, dynamic and innovative education program. Our education places a strong emphasis on innovation in teaching and curriculum design, reflected in our high student experience scores and various teaching awards. We aim to provide you with an engaging and positive learning environment, supported by our dedicated academic, professional and technical staff, and state-of-the-art laboratories. Our curriculum combines theoretical knowledge with rich laboratory experiments, preparing you for the challenges and opportunities that lie ahead.

Our research was recognised as the 5-star or "well above world-class" in all Excellent in Research Australia (ERA) evaluations. We have world-class research facilities, and renowned experts in the field of electrical engineering (including quantum engineering, telecommunications, signal processing, systems and control, energy systems, Nano/micro systems). We have developed close collaborations with broad industry sectors and continuously establish spin-off companies. You will benefit immensely from being part of an EE&T academic environment where cutting-edge research is taking place, as it provides opportunities to engage in innovative projects and learn from leaders in the field via the Taste of Research programs and honours thesis.

I encourage you to actively engage in both your academic pursuits and the vibrant ELSOC society activities. Embrace curiosity, diversity, and experiences within our community. We are here to support you, so do seek guidance and ask questions. We also welcome your suggestions and feedback on how we can continue to improve.

Once again, welcome to the School of Electrical Engineering and Telecommunications at UNSW Sydney. I look forward to seeing you in class and on campus.

Best wishes for a fulfilling and successful academic year!

Sincerely,
Jinhong Yuan, Professor
Acting Head of School

SAMPLE FIRST YEAR ROADMAP

Here's an example of what your first year of courses might look like. It's totally fine to deviate from this schedule, just make sure you know which terms your courses run (see above) and know any prerequisites!
Remember to enrol ahead of time for your courses! Comp courses especially tend to fill up super quickly.

Term 1

- *MATH1131/1141* Mathematics 1A
- *DESN1000* Intro to Engineering Design and Innovation
- *ELEC1111* Electrical Circuit Fundamentals

Term 2

- *MATH1231/1241* Mathematics 1B
- *COMP1511* Programming Fundamentals
- *PHYS1131* Higher Physics 1A

Term 3

- *MATH2069* Mathematics 2A
- *PHYS1231* Physics 1B
- *COMP1521* Computer Systems Fundamentals

FIRST YEAR COURSES

MATH1131/1141: Mathematics 1A / Higher Mathematics 1A - T1/T2/T3

For most of you this will be the first math course you take at UNSW. You'll probably recognize a lot of the early content from HSC extension 1 and 2 but will find that the course quickly progresses into new and unfamiliar territory. It's normal to feel like you're not on top of everything, but if you feel like you haven't quite grasped a concept from your lectures, I recommend checking out the course notes (you can get these as a PDF from moodle or a physical booklet from the UNSW bookshop). These have quite extensive written explanations and worked examples for many of the topics in the course. If you'd like to see the content presented from another angle, try Milan Pahor's pre-recorded lectures available on moodle. (Note: MATH1141 does not run in T2)

MATH1231/1241: Mathematics 1B / Higher Mathematics 1B - T1/T2/T3

This course follows on from MATH1131/1141, continuing to build on your algebra and calculus knowledge - with a bit of probability/statistics thrown in at the end. It has a basically identical structure to MATH1131/1141, so the strategies which worked for you in that course will likely work again for this one. (Note: MATH1241 does not run T3)

ELEC1111: Electrical Circuit Fundamentals - T1/T3/Summer Term

As an Electrical Engineering major, this is probably the most important course you'll take in your first year. The circuit analysis and laboratory skills that you learn in this course are absolutely foundational for the rest of your degree, so the effort you put in here will definitely pay off. It is absolutely normal to find it hard, since the content can feel very unintuitive. Doing practice questions, from tutorial sheets, past exam papers, or lecture slides can help build your understanding. Trust me, so long as you keep practicing and checking where you went wrong, circuit analysis will become second nature to you in no time.

PHYS1121/ PHYS1131: Physics 1A/ Higher Physics 1A - T1/T2/T3

If you've had some exposure to physics in high school, a lot of the introductory content will also look familiar to you. This course is also pass/fail, meaning that rather than receiving a numerical score, you will simply receive an SY (satisfactory) if your score is 50 or above, or an FL (fail) if it is below 50. If you're the type to stress over getting low marks, this will take some of the pressure off. The best piece of advice I can give you for this course is to do practice problems. The more problems you do, the better your intuition for solving them will become, and you'll have a much easier time than you would otherwise. I strongly advise you to ask questions either at your PSW (Problem Solving Workshop - OTH on your timetable) class or on the course forums if you find particular topics which you have trouble with. This course also has a laboratory component, so make sure you get your pre-lab work done ahead of time and have a read of the lab book so you know what you're expected to complete!

PHYS1231: Higher Physics 1B - T1/T3

Higher Physics 1B mainly expands on the topics you might have had some exposure to in high school, and gives you insight into some of the physical principles behind the electrical circuits you'll be working with throughout your career. In my opinion, this course is a little less intuitive, but much more interesting than PHYS1131 (especially the lab component). The advice I have for PHYS1131 still holds here, do plenty of practice problems and utilize the course forums and your tutors and lecturers for help if need be. This course has a nearly identical structure to PHYS1131, but uses the standard grading scheme.

DESN1000: Introduction to Engineering Design and Innovation - T1/T3

This course will see you complete a term-long engineering project with a group, and is definitely the most hands-on of the first year courses. You'll be given a variety of projects to choose from, so I advise you choose something that interests you, whether it be ELEC related or not. This course doesn't have any formal exams, but you may be asked to create presentations or reports on your project as a group during the term, so try not to leave everything to the last minute! Definitely take advantage of the Makerspaces around campus to build your project, but be aware that these become very full in the final weeks of term. Since this is a group project, make sure you have consistent communication and you split the workload well.

COMP1511/1911: Programming Fundamentals - T1/T2/T3

COMP1511 is the introductory coding course at UNSW! You'll be learning how to code in the C programming language. If you've never coded before, don't stress! This is one of the most well-run courses in the entire program and is designed to be accommodating to novice programmers. If you find yourself having trouble with the work, make a post on the course forums! These are very actively monitored and you should expect to receive a timely response from a staff member. Or, if you prefer face-to-face assistance for a lab or assignment, you can attend a help session. These are run both online and in person, but keep in mind that these can become quite busy around the time assignments are due. So long as you put in effort, this course is definitely an enjoyable experience! COMP1911 covers less content than 1511 in the same amount of time, so it can feel easier, although if you ever decide to pursue more COMP courses, you'll have to sit a bridging course.

COMP1521: Computer Systems Fundamentals - T1/T2/T3

This course continues to build your programming skills by introducing you to MIPS Assembly Language, as well as some more features of C. It's a slight step up from 1511, and you're expected to be a little more independent since you should now have some coding experience under your belt, but you're still free to take advantage of course forums, help sessions and your tutors for help! Although not an official prerequisite, it is definitely recommended to take this course before DESN2000 in second year, due to the overlap.

MATH2069: Mathematics 2A - T3

For some of you, Mathematics 2A will be the first level 2 course you take, focusing on the areas of Vector Calculus and Complex Analysis. As such, it has a slightly different structure to MATH1131/1141 and MATH1231/1241, with much less assigned work during the term and more weighting placed on the final exam. Despite this, I strongly recommend that you try to complete a decent selection of tutorial questions throughout the term. A lot of this subject's content is quite unintuitive and challenging and will require practice to fully grasp. Doing steady practice throughout the term will take a lot of the pressure off and leave you feeling much more confident for the assessments and final exam. If you need extra help with the tutorial questions, the course forums are reasonably active and also check out the video resources on Moodle.

DOUBLE DEGREES

Should I take a double degree?

Double degrees are often a great idea, especially to have a variety of subjects in your study, opening up career opportunities and having more options for your thesis. At the same time, there may be potential drawbacks to consider. Let's hear from Regan Fan, the 2023 ELSOC president!

I am in my 6th year completing a double degree in B.E Electrical Engineering and B. Commerce. During my time as a student I have always considered myself as an engineer first and viewed commerce as secondary. Hopefully my experiences can provide some insight into double degrees with the No. 1 School of Electrical Engineering & Telecommunications (EET) in the country.

- Regan Fan
2023 ELSOC President

What are the pros of doing a double degree?

1. Motivation

When I was in year 12, I was uncertain of what I wanted to study. I knew that I wanted to be in STEM and chose EE based on my fascination with computers and electronics.

2. Time and money

My choice to study a double degree in commerce was based on its value for time and money – let me explain. An engineering degree at UNSW typically is four years long, whereas a commerce degree is three years long. Completing them as a double degree allows you to finish your study in about five and a half years, which is 1.5 years shorter than if you were to complete the degrees separately. This also saves you around $10,000 in course fees due to the educational overlap in certain courses (meaning I study less engineering courses and less commerce courses when compared to the standalone programs).

3. Career Prospects

When completing a double degree, you obtain extra knowledge and skills that may not be typically found in your industry. Completing a double degree may open more career options and help you stand out amongst your peers to employers.

Are there downsides to taking a double degree?

A double degree does extend your stay at UNSW, please consider carefully if your personal circumstances allow for extra years of study. In some cases, you may also be better off completing a single degree and a year of work experience, rather than taking an extra year of subjects you weren't engaged with and didn't pay any attention to. If you are thinking of completing a double degree, I strongly recommend that you choose a second degree that you are genuinely interested in.

What would you change about your double degree?

The recommended program structure from the school of EE&T is to complete your Electrical Engineering units first, and then complete your second degree. This structure can be restrictive as it does not let you explore your passions and interests in your second degree early on. In my case, if I had studied more commerce courses in my earlier years, I would have discovered my specific areas of interest in commerce sooner.

Do keep in mind that degrees at UNSW are very flexible! With a reasonable WAM, you can easily complete an Internal Program Transfer and pick up (or drop!) a double degree. Check in the UNSW handbook if your double degree is offered.

If unsure...

We recommend that you see what you might enjoy first to find out whether a double degree is for you! Exploring subjects in these ways might guide you in a helpful direction:

- First year subjects
- DESN1000 group projects (Don't be afraid to pick a non-elec project or stream!)
- General Education courses/ electives
- Joining different societies
- Speaking to others in various degrees

GETTING INVOLVED

First Year Camp

Our annual First Year Camp is happening during week 2 of term one! Are you an incoming first year looking to know your fellow cohort? Do you want to make life-long friendships and cherish great memories?

Peer mentoring

The Peer Mentoring Program aims to help first year students transition into and easily navigate through university. First year students will be placed in groups and paired with two mentors who will be able to provide academic support and answer all questions about what electrical/telecommunications engineering in UNSW is like.

Attend Society Events

Attending society events such as ELSOC's numerous barbeques, Beer and pizza night or Industry night will be a great way to make new friends in and outside of the society. Get involved with whatever society's events interest you, and you'll be sure to find friends who share your interests!

Subcommittee recruitment

As a subcommittee member, you will have the opportunity to have your unique skills recognised and you will work alongside other motivated students. Apply during T1 so that you don't miss this opportunity to develop your interpersonal skills and make lasting friendships.

STUDY TIPS

ACTIVELY ENGAGE with lectures! Jot down notes to follow along with exercises as the lecturer does them. The more you're able to understand in class, the less of your own time you'll need to spend on catching up!

SEEK HELP if you need. Don't be afraid to ask the lecturer questions about the content if you're confused! They have all been in your position before, and are often more than happy to help. Many courses also have active online forums where students can post questions about the content. Utilizing these is a great way to speed up the learning process!

USE A PLANNER to organise your tasks! Uni moves at a faster pace than high school. Using a planner to keep track of due dates and to allocate time for completing specific tasks helps feeling as overwhelmed. My preference is for a physical planner, but digital planner apps like Notion and Google Calendar are great options as well!

ORGANISE your work. Keeping your lecture notes neat and ordered will make the process of revision much easier as you approach exams. If you're using a physical notebook, using a small page marker to keep track of each lecture's content is a great way to stay organized. If you're using a drawing tablet, I recommend taking notes on a copy of the lecture slides themselves!

FIND A BALANCE between study, work and life. It's far too easy to get burnt out due to overcommitment, so I advise you to carefully consider how extra commitments will factor into your weekly schedule before taking them on. Remember, your health is more important than getting high marks!

DO REGULAR PRACTICE! At a university level, diligence and application matter far more than natural talent. Doing practice questions/exercises is generally the best way to learn across STEM courses, and spacing your practice throughout the term will save you from having to cram at exam time!

FAQS

Should I do Higher Maths/ Physics?

Both of these courses share the same essential content and structure, although MATH1141 will have some significantly harder questions. If you're in doubt about which one to pick, I recommend you take 1131. You won't be at any disadvantage for later courses compared to your peers who did 1141. That being said, if you're particularly good at math (or are doing a double major with math) and want an extra challenge, feel free to give 1141 a shot.

What's the best way to make friends?

The best way to make friends is to put yourself in situations where you can interact with new people. Showing up to in-person classes and attending society events and first-year camps are great ways to do this! Joining a society as a subcom member or director is a great idea as well! It only takes a little bit of effort to start a conversation with someone. Even just introducing yourself and asking how they're going is enough. People will appreciate it if you initiate!

Do I have to attend lectures and tutorials?

For just about all the courses in engineering, attendance for tutorials and lectures is optional. But this doesn't mean you should skip class! In my experience, you tend to be much more engaged when you attend a lecture in person as opposed to watching a recording on a computer screen. Tutorials are also a great way to solidify your understanding of the content, especially if you attend with specific questions in mind. Keep in mind that while most lectures will be recorded for later viewing, tutorials are not.

How do I become a part of ELSOC?

You can become officially integrated into ELSOC by applying to be a part of a subcommittee, or for a director or executive position. Many of the current directors and execs started by joining a subcom during their first year - applications should open within the first few weeks of term so if you're keen to get involved and make some friends, make sure to apply!

How do I plan my timetable?

CSESoc (Computer Science and Engineering Society) have created some helpful tools to save you the stress of degree planning. If you want to plan your timetable for next term before class selection opens, head to notangles.csesoc.app . If you want to plan the order you take your future courses, you can head to circles.csesoc.app. The Nucleus Student Hub (found on the ground floor of the main library) is also available to answer questions about your degree. (Disclaimer: circles doesn't support every double degree combination)

How much concern should I give to my WAM?

In general, it's healthy to aim to do as well as you reasonably can. But don't fall into the trap of believing you WAM is the be all and end all of your future success. Your courses focus primarily on building your technical and analytical skills, and while these are definitely important, you'll find that what employers value is much broader than this. Whether it be from your coursework or extracurricular involvements like societies or practical projects - the skills and mindset you develop as an undergraduate will serve you far longer than your WAM will.

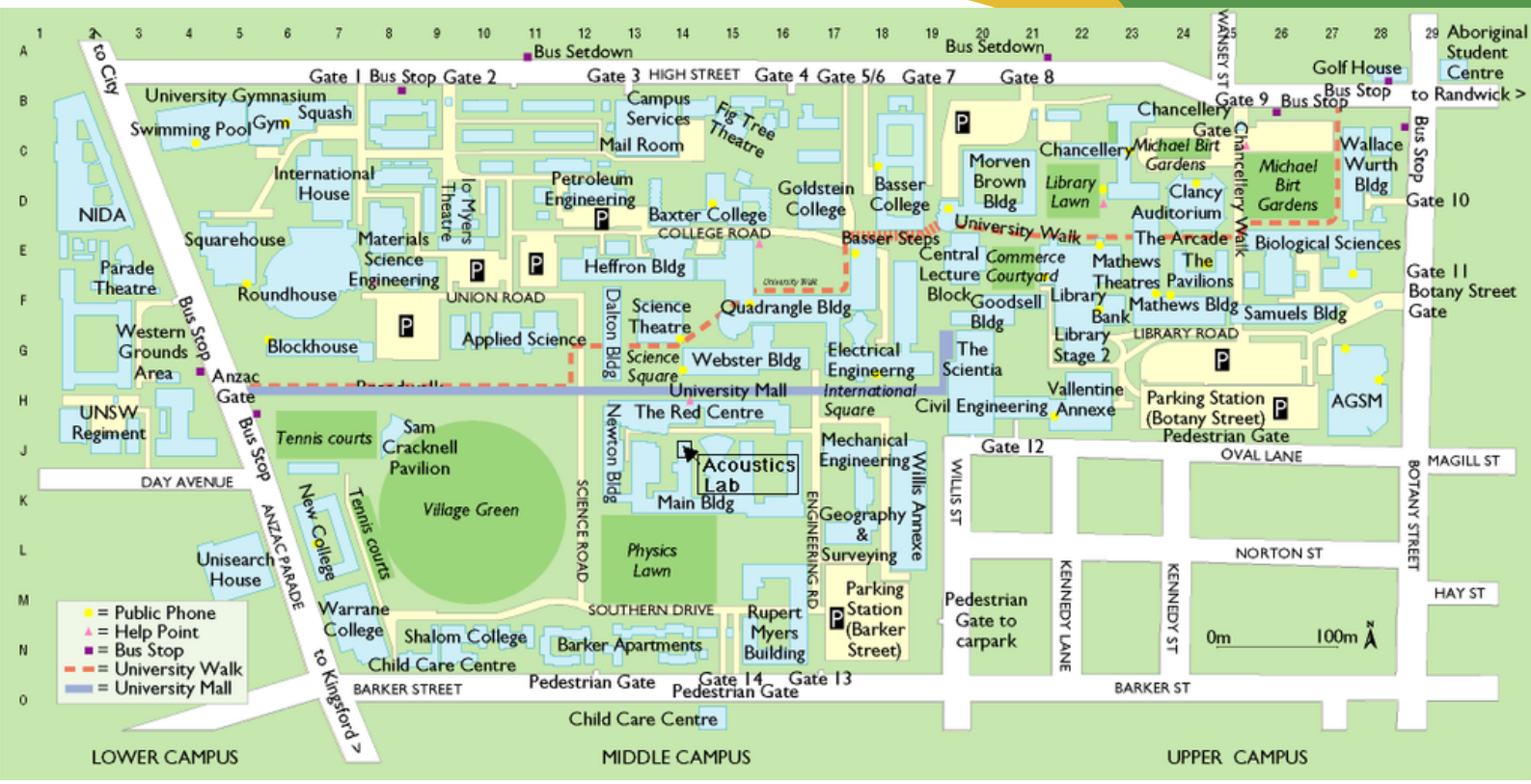
How much time should I spend studying?

The official UNSW recommendation is to spend 40 hours a week of study for a full time university student. However, this is not necessarily realistic - especially if you have work commitments. While 40 hours of study per week will certainly net you very good results, most students do well with significantly less. Rather than worrying about how much time you spend studying, it is more advisable to focus more on learning effectively from your assigned tasks and making sure you have a solid understanding of the content.

Do I need to buy textbooks?

NO! Physical textbooks are typically expensive, but thankfully they aren't necessary for the vast majority of your courses. You'll usually find that the material provided by the course is more than enough for you to learn effectively, the use of textbooks is entirely optional and up to your discretion. If you'd like to supplement your learning with a textbook, ask an older student about it or look for them online.

CAMPUS GUIDE



Getting to UNSW

- The L2 from Central Station will take you to Upper Campus via High St
- The L3 from Central station will take you to Lower Campus via Anzac Pde
- Buses like 391, 393 and 395 all take you to Lower Campus via Anzac Pde
- Casual parking is paid using the CellOPark app

Finding your way around

- The Lost On Campus app directs you anywhere on campus, including specific rooms
- UNSW's online interactive map shows all important locations
- Google Maps will only direct you to major buildings

CAMPUS RECOMMENDATIONS

Places to eat

Here are some of our go-to places for lunch or for a snack!

Upper Campus

- Subway
- Boost
- XS Expresso - favourite desserts
- Cafe Brioso

Quad Food Court

- Soul Origin
- PapaRich - a popular lunch option!
- NeNe Chicken

Lower Campus

- Yallah Eats - cheap eats
- Guzman Y Gomez
- Sharetea - favourite drinks on campus
- IGA

Study Spots

(Apart from main library and law library)

- Electrical Engineering Building (Mid campus) - heaps of booths and large tables (perfect for group study)!
- Morven Brown Building (Upper Campus) - modern and cosy study spot
- SEB (Science and Engineering Building, Lower Campus) - Open underground study space

Have free time?

- Come to Roundhouse (Lower Campus) to play pool, grab drinks at the bar and have burgers!
- Check out UNSW's Bouldering wall!

STUDENT SUPPORT

Health and Wellbeing

It's so important to take care of yourself at uni, so visit the Support and Development page or the UNSW Wellbeing landing page for links to other services, or consider talking to a counsellor at UNSW Counselling and Psychological Services (CAPS).

Financial Support

Australian Citizens and permanent residents can get Commonwealth assistance like HECS-HELP, in addition to Centrelink payments and access to the National Disability Insurance Scheme.

Make sure to apply for your concession opal card for cheaper fares!

For Indigenous students

Nura Gili is a UNSW space that offers study and meeting places for First Nations students and researchers. The Nura Gili team provides tutoring, workshops and events. Check out the Indigenous Tuition Program (IPT).

For International students

Check out the UNSW International student portal for links to peer support, details on UNSW policies, and more.

ELS

If you have a physical disability, medical condition, learning disability, or are dealing with personal circumstances that affect your study, Equitable Learning Services may be able to provide you with assistance. Don't be afraid to apply for Special Consideration if an unexpected event affects your assessment or exam.

LGBTQIA+

The Ally Network is a group of trained students and staff who are committed to making UNSW a welcoming place for everyone.

The SRC Queer Collective is an Arc group that aims to support and represent all queer students on campus. They run Queer Collective meetings and provide a Queerspace to relax and connect with other LGBTAQ students.

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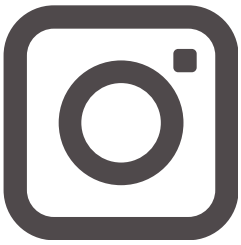

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