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Welcome to UNSW Engineering

There are many people who can imagine the world to come, but it takes an engineer like you to make the future real.

It doesn’t matter which career path excites you the most, because the influence of engineering knows no bounds. People will turn to you as an engineer to solve problems and to improve our society, whether your passion is construction, economics, technology, energy, manufacturing or medicine. Engineers are creating intelligent machines (mechatronics), bionic limbs (biomedical engineering) and harnessing geothermal energy (petroleum engineering) to name just a few exciting examples.

UNSW Engineering is consistently ranked as the number one engineering faculty in Australia and one of the top 50 in the world. As a student you will be inspired by internationally renowned teachers who are also leading researchers. You will develop problem solving skills and learn to think like an engineer. Our one billion dollar investment in new facilities includes state-of-the-art laboratories, virtual reality cinemas and modern teaching spaces to enhance your experience.

By choosing UNSW Engineering, you’re placing your future among the brightest engineering students in the country. Our student-led projects are the most highly regarded in Australia and are internationally renowned for their sophistication, variety and success. They include the world record breaking sUNSWift solar car, the world champion RoboCup team and the amazing UNSW Redback Racing team.

As a UNSW Engineering graduate you will be highly sought after in Australia and internationally. Your career opportunities will be enhanced through our strong industry partnerships and an extensive international alumni network.

If you’re looking to make an impact and improve the world we live in, we’ll be happy to help show you the way.

Professor Mark Hoffman
Dean of Engineering

*The 2014 ARWU/SHJT Rankings place the faculty at #1 in Australia and #42 in the world*
Why choose UNSW for your Engineering Degree?

No.1 Faculty in Australia

Source: The 2014 ARWU/SHJT Rankings place the faculty at #1 in Australia and #42 in the world

Largest engineering faculty in Australia.

$3,000,000 in engineering scholarships for students provided each year

More technology entrepreneurs than any other university in Australia. (Crunchbase Report 2013)

$1 billion invested in new facilities for students and research over the past 5 years (since 2009).

18% of the top 100 most influential engineers in Australia are UNSW Graduates*

*Engineers Australia Top 100 list in 2014.

Globally recognised engineering degrees with Engineers Australia accreditation
A degree that gives you options
What is it you think of when you think of engineering? Is it flying in a zero gravity simulator? Or trekking across the wonder of Antarctica? Perhaps it’s breaking the land speed record in a solar powered car or sending satellites into orbit? Maybe you imagine fossicking deep below the ground in huge caverns, or among microscopic human cells creating life-saving medicines? Well, you should think of all these things, and plenty more.

Completing a degree in engineering is about building the solid foundation you need to launch into a vast number of exhilarating careers that have a tangible and valuable impact on the way we live our lives. It will ask you to master every facet of your mind and, in return, will offer you the most rewarding experience of your life.

Valuable skills in any career
Engineering is diverse, versatile and fun, and the options once you graduate can be staggering. In fact, many CEOs have a degree in engineering, as he or she has the knowledge and skills to solve any of the problems a company may face. The skills you learn in engineering can be used in any industry and any job.

Engineers shape the future; from medicine to renewable energy, and food technologies to sustainable mining.

There is no limit to what an engineer can do.

UNSW Engineers
Solving tomorrow’s problems today
- We’re teaming with NASA to launch Earth observation satellites
- Delivering better sanitation to communities in developing countries
- Revolutionising drug delivery in cancer treatments
- Helping switch on the Southern Hemisphere’s largest solar photovoltaic power station
- Developing wound-healing bandages
- Enhancing the taste, nutrition and safety of our foods
- Adopting artificial intelligence to improve our transport networks
- Developing a watch for the elderly that contains a fall detection alarm
- Helping to restore degraded wetlands
- Pioneering a robotic tractor and seeding machine
- Launching a low-cost wastewater treatment system built entirely from recycled materials
- And so much more...

Hungry for innovation?
For more UNSW Engineering innovations check out our e-magazine, available at unswengineers.net

SEARCH FOR UNSW Engineering
Our graduates are changing the world

UNSW Alumni making their mark
Did you know that UNSW Engineering graduates make up 18% of the top 100 most influential engineers in Australia? Here are just a few exciting stories...

Dr Lydia Ng
Bachelor Science (Computer Science), Bachelor Engineering (Electrical), PhD (Electronics)
Job: Director, Technology   Company: The Allen Institute
“The Allen Institute is a non-profit organisation [that serves] the scientific community by creating resources to help understand the brain. As director of technology, I lead a team of data scientists and software engineers who turn hundreds of thousands of high-resolution serial sections of different brains into one unified resource. The fun comes after a large chunk of data has been processed: I love finding spatial relationships. We pivot, cluster, regress and correlate the data to create data-driven maps of the brain, which are interesting scientifically and quite mesmerising.”

Dr Raji Ambikairajah
Bachelor Engineering (Electrical) (Hons), PhD (energy systems and smart grids)
Job: Chief Operating Officer   Company: Women in Banking and Finance
Upon completing her degree in 2006, Dr Raji Ambikairajah was snatched up by Personal Audio to work on MyEars technology, which combines neuroscience, psychophysics and digital signal processing to create true 7.1 headphone sound. Soon after, she became Sydney chapter leader for Room to Read, an award-winning non-profit committed to transforming the lives of millions of children across Asia and Africa through education. Following her PhD, she worked with venture capitalists to ensure engineering strategy was at the forefront of new business. She is now the Chief Operating Officer of WiBF, promoting and providing gender balance opportunities to the finance sector.

Alex North
Bachelor Science (Computer Science) (Hons 1)
Job: Founder   Company: First Order
Since he graduated in 2006, Alex North has lectured in cryptography and security at UNSW, founded Deep Grey Labs and JamCode, worked as a senior software engineer at Google, served as vice-president of engineering at start-up Posse and made a bunch of award-winning apps. Wow! He turns great ideas into products that empower and delight, living by the motto “building the right thing is as important as building it right.” His latest career twist? Founding a consultancy company, First Order, which matches the best engineers with software startups.

Rami Banna
Bachelor Engineering (Electrical and Telecommunications)
Job: Consultant   Company: Startups all over the world
“Before finishing my degree I’d worked with Telstra and Alcatel-Lucent thanks to UNSW’s excellent Co-op Program Scholarship. After graduating I worked with Lucent Microelectronics (later Agere Systems) designing the world’s first chips for 3.5G and 5G mobile phones. From there I transitioned into medical devices [developing groundbreaking implantable hearing aids] and the wonderful world of product development, and last year I started an MBA at the London Business School to combine my love of product and technology with commercialisation and start-ups. I now run my own consulting company, working with start-ups all over the world.”

For extended profiles and more great stories, visit unswengineers.net
Meet our lecturers

Learn from the best of the best

While thousands of UNSW Engineering graduates enjoy fruitful careers all around the world, UNSW also attracts some of engineering’s best minds. They’re the world’s leading researchers and they’re here to share their knowledge. Here are just a few of our great personalities...

**Associate Professor Andrea Morello**

**Expertise:** Quantum Nanosystems

**Highlight:** His multiple award winning, cutting-edge quantum research recently won him the 2014 NSW Science and Engineering Award for Emerging Research.

**Future:** Powerful quantum computers capable of complex calculations in medical research, data security and modelling biological molecules and drugs. Andrea delights in sharing his research findings with students at UNSW, which he describes as the “quantum capital of the world.”

**Doctor Alice Lee**

**Expertise:** Food manufacture and allergens

**Highlight:** Using nanotechnology to detect microorganisms, allergens and chemical traces in our foods in order to help make food safer.

**Future:** To devise a rapid test for pathogens like Escherichia coli (aka E. coli) and salmonella – a breakthrough that could potentially save millions of lives.

**Doctor Megan Lord**

**Expertise:** Working on the body’s integration of implantable devices.

**Highlight:** Winning a NSW Young Tall Poppy Award for her work in developing materials that replicate tissue components and help medical devices interface with the body.

**Future:** To continue her groundbreaking research, share her love of biomedical engineering with students, researchers and the community. She also aims to be an inspiration to other women who are interested in engineering.

**Associate Professor Richard Buckland**

**Expertise:** Computer Security, Cybercrime and Cyberterror

**Highlight:** Teaching, face to face and online. He was the Australian ICT educator of the year in 2013 and, in 2008, he was the Engineering Educator of the Year for Australia and New Zealand.

**Future:** Passing on his love for both education and learning.

Check out Richard’s lectures on his YouTube channel: BucklandRichard

UNSW is “the quantum capital of the world”
Women in Engineering

Many major employers of engineering graduates are actively working to recruit more women. They recognise that diversity is important to the success of their business and, as a result, female engineering graduates are in high demand.

UNSW Engineering has above-average female enrolments at 20% (the national average is closer to 16%), but we are actively recruiting women and have set a goal of boosting female enrolments to 25% by 2020.

As part of this goal, we have a dedicated Women in Engineering Manager – Dr Alex Bannigan – who works with high schools, current university students, alumni and the industry to create a sustainable pipeline for the growth of outstanding, qualified women in all sectors of engineering.

For more information:
Women In Engineering Manager: Dr Alex Bannigan
Email: a.bannigan@unsw.edu.au  Visit: unsw.to/wie
Phone: +61-2-9385-7458

Engineering is a versatile career
- Engineering is creative
- Engineering Involves working with people
- Engineering Is focused on problem-solving
- Engineering can help people and the environment
- Engineers are in demand
- Engineers are well-paid

Women in Engineering resources at UNSW
- Scholarships
- Workshops
- Seminars
- Networking events
- Extensive alumni network
- Academic and career development
- Student societies
Note to parents – gender equality

There is no area of engineering that is inaccessible to women in today’s business landscape. A rise in the number of exceptionally talented female graduates, combined with a concerted effort by large employers to hire more female staff, promises a happy career in a supportive environment.

Graduate profile

Deep in the jungles of Tanzania...

Dr Jacqueline Thomas
BSc/BA, PhD (civil engineering, water quality)

Job: Senior Scientist – Water, Sanitation and Hygiene Research

Company: Ifakara Health Institute, Tanzania

In the East African country of Tanzania, 9% of all deaths of children aged under five occur from diarrhoeal disease due to poor water supply and low level sanitation. Dr Jacqueline Thomas is working on hygiene interventions that can reduce contamination of drinking water and make a huge difference to not just Tanzania, but people all around the world.

The task involves affordable, chemically-dosed ceramic water filters that are effective at removing bacteria and killing viruses. The system also collects and treats human waste for safe use in agricultural production and for creating fuel bricks, replacing wood taken from cutting down virgin forests.

She hopes her work will continue to make a difference and that more local communities can benefit from the technology her project has developed.

Student profile

Truly experiencing it

Annette Au
BE (Hons) Mining Engineering

Role: Student Representative, Engineers Australia’s Women In Engineering Sydney Division

Annette Au believes diversity in engineering is very important. She understands that women can bring new and creative solutions to complex problems, providing flexibility, adaptability and strength to companies in a rapidly changing world.

With that in mind, she and another student conceived, managed and ran the inaugural Engineers’ Australia Sydney Women in Engineering Experience It! Student Conference 2014 – a day full of exciting hands-on activities and inspiring talks to show girls in years nine to twelve the diverse possibilities of engineering. After receiving positive feedback, it’s set to become a yearly event.
Opportunities to travel

Take your engineering degree further

An essential part of being a world-class university is giving our students global engineering experience. After all, how can you make a world of difference without seeing the world? North America, Asia, Europe, the Middle East – in fact, why not head to a country where English is not the first language. As well as experiencing a new culture you might even pick up a second language and open yourself up to more career options.

Engineering students at UNSW Australia are actively encouraged to pursue interesting and contemporary educational experiences through exchange scholarships or industry placements overseas. We have connections with universities around the globe and you may receive credits towards your degree for your international exchange achievements.

Student exchange destinations

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Globalise your study experience

- Exchange scholarships available (see page 15)
- Internships overseas
- Volunteering opportunities
- You may receive credits towards your degree
- Industry training placements
- Short courses and study tours

For more information:
Visit: international.unsw.edu.au
Phone: +61-2-9385-7276

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CANADA

Canada – 8 universities

USA

USA – 60 plus universities

LATIN AMERICA

Mexico – 2 universities
Chile – 1 university
ASIA
China – 8 universities
Hong Kong – 5 universities
Japan – 2 universities
Korea – 6 universities
Malaysia – 1 university
Singapore – 21 universities
Taiwan – 1 university
Thailand – 2 universities

EUROPE + UK
Austria – 1 university
Denmark – 3 universities
France – 3 universities
Germany – 5 universities
Italy – 3 universities
Norway – 2 universities
Spain – 4 universities
Sweden – 4 universities
Switzerland – 6 universities
Iceland – 1 university
Ireland – 1 university
UK – 7 universities

NEW ZEALAND
New Zealand – 1 university

LATIN AMERICA
Mexico – 2 universities
Chile – 1 university

MIDDLE EAST
Israel – 2 universities

Opportunities to travel
“You may receive credits towards your degree for your international exchange achievements”
Amazing hands-on opportunities

There are many student led projects at UNSW, allowing you to gain important leadership and project management skills. Some of these projects are in diverse areas such as electronics, photovoltaics and artificial intelligence.

Each school offers its own opportunities, allowing you to challenge yourself and have fun with practical, real-world engineering while studying. It hones your teamwork skills and makes for an impressive resume entry, too. Here are some of our favourites...

**UNSW Redback Racing**

*Opportunity:* Building and driving a race car

UNSW Redback Racing is a student led team that designs, constructs and races an open-wheeled race car. Every year since 2000 the team has competed in the challenging Formula SAE Australasian competition run by the Society of Automotive Engineers, and has been rewarded with several top five positions clocking speeds of up to 150km/h. Entrants are also judged on the car’s performance, fuel consumption, design, cost to manufacture and commercial viability.

Students from all disciplines at UNSW work together to gain valuable manufacturing experience, but also put their design theory into practice and develop leadership, management and communication skills.

*More information:* [redbackracing.unsw.edu.au](http://redbackracing.unsw.edu.au)

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**Engineers Without Borders**

*Opportunity:* Finding sustainable solutions to world problems

The UNSW chapter of Engineers Without Borders offers students the opportunity to align their university study with community needs and to play a part in ensuring clean water, sanitation and sustainable energy. UNSW students have been demonstrating how engineering can make a profound difference in biomedicine by challenging high school students to make prosthetic limbs out of everyday products.

*More information:* [ewb.org.au](http://ewb.org.au)

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**BLUEsat**

*Opportunity:* Space engineering

The BLUEsat Group at UNSW is dedicated to creating practical engineering projects that give undergraduate students hands-on experience in space technology. Current projects include a microsatellite test flight on a stratospheric balloon, and a rover suitable for asteroid, lunar and Mars-like environments.

Exciting opportunities exist for students from a wide variety of engineering backgrounds, across all years.

*More information:* [www.bluesat.unsw.edu.au](http://www.bluesat.unsw.edu.au)
The UNSW student-led sUNSWift program began back in 1996. It is helping to shape a clean energy future by developing a practical solar sports car using existing technology. In doing so, it’s challenging current notions about renewable energy technology. In 2014, eVe, as the car is fondly known, broke a world speed record for the fastest long-range electric car, averaging 107km/h for over 500km. Next step? Have eVe on the road as a fully road-legal solar-powered sports car.

More information: sunswift.com

Robogals is a student-run organisation that aims to increase female participation in engineering, science and technology through fun and educational initiatives aimed at girls in primary and secondary school. There are chapters at fifteen other universities across Australia, the UK, Ireland, Japan and the USA. Join them and help show the world just how rewarding and enjoyable a career in engineering can be.

More information: sydney.robogals.org.au

RoboCup

Opportunity: Designing world champion autonomous robots

believe that a team of bipedal robots can beat the FIFA World Cup champions by 2050? The members of this student research project do! They code robots for RoboCup, an annual international tournament where the best universities in the world compete in leagues such as soccer, work, home and rescue. In 2014, the UNSW team, rUNSWift, came home from Brazil as world champions. Aside from having a blast, the project also aims to develop technologies that can be used to help humanity, from assisting mobility-challenged people around the home to finding and helping victims of a building collapse.

Video: Search for “UNSW COMPUTING” on YouTube
Campus life

Embracing all the sights, sounds, tastes and events unique to UNSW campus life is an important way to get the most out of your university experience. With a broad range of activities available, there’s truly something for everyone. Whether you’re into sport, music, meditation or simply enjoy hanging out, our friendly and well-appointed campus caters to everyone. After all, university should be the adventure of a life time.

Location
The main UNSW campus in Kensington unfolds over a gorgeous, 38-hectare site. It is well signposted and maps are available, but we recommend taking the free one hour campus tour. It’s conducted by our well-informed student ambassadors and runs on most Fridays, as well as the first Saturday of every month during university semesters.

More information: campustours.unsw.edu.au

Facilities
UNSW has everything you need – from cafes, food outlets and a number of bars, to banks, a bookshop, supermarket, newsagency and post office. We also have medical and dental centres, a pharmacy and optometry clinic, plus a free counselling service.

In addition to our excellent library, The Hub gives our students a place to meet for study and group work activities, or to catch up with friends. You’ll also find our professional student participation advisors there to help with welfare, study and uni-related matters.

More information: student.unsw.edu.au/facilities

Recreation
Why not join one of more than 100 clubs and societies supported by Arc, UNSW’s student organisation. It’s a great way to make friends who share your interests and to really become a part of the campus community.

more information: arc.unsw.edu.au

Peer mentoring program
We appreciate that it’s a big step starting university so to support new students we offer a peer mentoring program, where you can ease into uni life guided by a mentor during the starting month of your first semester.

More information: student.unsw.edu.au/peer-mentoring

The social scene
One of the most valuable benefits you can gain from studying engineering at UNSW is building a large network of friends who are also future professionals in various fields. People who may one day open doors to employment, or even co-found a company with you. Staying in touch with what’s on and fun around campus is easy, and it’s a great way to form friendships that will stay with you for life.

More information: studentlife.unsw.edu.au

Accommodation
From fully-catered colleges with live-in support staff to self-catered apartments on or near campus, UNSW has student accommodation to suit all tastes and budgets. There are also many rental properties available in surrounding suburbs, as well as numerous short term options.

More information: housing.unsw.edu.au

Sport and fitness
The UNSW Sport and Recreation Centre is equipped with an indoor heated pool, steam room, gym, various fitness and training studios, tennis and squash courts, and offers a variety of sporting clubs to join.

More information: sportandrec.unsw.edu.au
Note for parents – extra information

UNSW understands that it’s extremely important to you that your child makes the best decision for their future and ends up with a career where they feel happy, secure, successful and driven. Engineering can be all that and more, and we want to help you help them get the most out of their potential.

UNSW has produced a guide especially for parents that gives you all the information you’ll need to feel confident in helping your child make a decision about where and what to study. It explains the benefits of UNSW, includes a useful timeline and provides details on enrolments, costs, contacts, scholarships and more.

For more information:
Parent Information Guide: unsw.to/gfp  Phone: +61-2-9385-1844
Aaron Hargraves
Bachelor of Civil Engineering

"Not only have I been able to spend more time focusing on my studies rather than working all the time, the scholarship has provided me with three summer industrial training placements."

For more information:
Phone: +61-2-9385-1078
Email: scholarships@unsw.edu.au
Scholarships

UNSW Engineering provides more than $3 million worth of scholarships each year, a substantial proportion of which is due to the generosity of our corporate and private donors.

Applying for scholarships

Our scholarships are designed to provide financial support to full-time students. Many are awarded for academic merit, but some also consider leadership qualities and community or school participation. There are also scholarships designed to help certain individuals – including women, elite athletes, students living outside of metropolitan areas and indigenous students – to fulfil their dream of becoming an engineer.

With the generosity of our corporate and private donors, UNSW Engineering is able to provide over $3 million in scholarship support each year to our students.

Scholarships can make a huge difference, so if you qualify for any of those offered, then you have everything to gain from applying. If you aren’t sure whether you qualify, please contact us to discuss eligibility.

FAQ

How much? Scholarships range from $1,500 to $20,000 per annum. For example, a rural scholarship can provide a student with $11,000 per annum for up to four years, while co-op scholarships offer $16,750 per annum plus industry training and professional development.

Should I apply? If you meet the selection criteria you should take the time to apply. We encourage you to apply for as many scholarships as are applicable to you.

Am I eligible? Different scholarships require different attributes. Many are based on academic merit and performance, but some consider factors such as leadership and community or school participation.

What is an “elite athlete”? If you have reached a high level in sport, you may be eligible for a scholarship. Scholarships are awarded on your sporting achievements plus leadership qualities and community involvement.

What does “rural student” mean? If you don’t live in a “major city of Australia,” you are probably considered a rural student. However many rural scholarships list specific requirements so it’s best to double check.

How do I apply? You apply for UNSW Australia scholarships via the online process, but some may require a different process. Review the application process carefully.

When do applications close? Usually on September 30 of the year prior to study, however some scholarship application dates are different. Late applications are not accepted so check the website for application dates.

Do I also need to apply for admission to UNSW? Yes. Applying for a scholarship is separate to applying to study at UNSW. See page 16 to find out more about applying to UNSW. You also need to make sure you enrol in the correct program for the scholarship you are applying for.

Can I hold more than one scholarship? Generally students can only hold one scholarship at a time. However, there are exceptions; you’ll be advised when you receive your offer.

What do I need to do to keep my scholarship? There are specific conditions of your scholarship, like certain grades you need to maintain. These conditions vary, and will be clearly outlined in the offer letter we send you.

Can I defer my scholarship? Most scholarships cannot be deferred, however there are some exceptions. Contact UNSW Scholarships to find out more.

Can I reapply or apply for other scholarships if I don’t receive one in first year? Yes! Scholarships in some schools may be available in later years. Check the website for details.

“UNSW Engineering provides over $3 million in scholarship support each year”
The how, what and when of getting in

1. **Current Australian HSC Student**
   (including off-shore, New Zealand NCEA and IB students)
   > Apply through UAC
   VISIT: uac.edu.au
   Or check out the alternative entry options to the right.

2. **International Students in Australia**
   > Apply through UAC International
   VISIT: uac.edu.au/international

3. **International Students not in Australia**
   > Apply through UNSW
   VISIT: apply.unsw.edu.au

**Changed your mind?**
Enrolled undergraduate students sometimes discover that their first program choice may not have been their wisest. UNSW gives you the chance to transfer between programs within the same faculty and across single and dual degree programs generally in Semesters 1 and 2. Performance-based criteria apply and transfers are subject to availability, but in most cases you do not have to apply through the Universities Admissions Centre. For more information, visit unsu.edu.au/ifpt
Increasing your chances

The ATAR entry cutoffs for engineering degrees at UNSW are among the highest in the country. If you don’t achieve the ATAR required for direct entry, there are some other entry options to consider.

Via interview – FEAS
If you think your ATAR will be between 81.00 and 90.95, there’s still a good chance of being accepted into UNSW Engineering. We strongly encourage putting in an application for an interview under the Faculty of Engineering Admissions Scheme or FEAS. You still must apply via UAC, too.

More information: engineering.unsw.edu.au/feas

Via ATAR and HSC Plus bonus points
We award bonus points towards entry for students who have achieved outstanding results in relevant HSC subjects like Physics, Mathematics and Mathematics Extension 1 and 2.

More information: unsw.edu.au/hscplus

Via Elite Athletes and Performers Program
The Elite Athletes and Performers Program (EAP) supports students with a flexible entry process (including eligibility for bonus points on their ATAR) and flexible study arrangements while at UNSW.

More information: unsw.edu.au/eap

Alternative pathways
There are a number of other avenues you can take to seek admission to a UNSW undergraduate program, including:

- Completing first year in another degree at UNSW or at another university
- UNSW University Prep Program
- Completing an AQF accredited Diploma or Advanced Diploma
- Pathway programs for mature age students through TAFE

More information: unsw.to/nhss

Special entry
UNSW Australia is committed to the goals of equal opportunity and affirmative action in education. The following special entry programs are available:

- Access Scheme – students experiencing special circumstances unsw.edu.au/access-scheme
- Nura Gili Indigenous Programs nuragili.unsw.edu.au
- Students with disabilities studentequity.unsw.edu.au

Key application dates

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<th>Key application dates</th>
<th>Closes on</th>
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<td>UAC applications (on time)</td>
<td>September 30, 2015</td>
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<td>Scholarships</td>
<td>September 30, 2015</td>
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<td>EAP applications</td>
<td>November 30, 2015</td>
</tr>
<tr>
<td>Access scheme applications</td>
<td>September 30, 2015</td>
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</tbody>
</table>
UNSW Engineering

The source of Australia’s engineering future

Choosing to study engineering at UNSW is one of the smartest moves any aspiring engineer can make. At UNSW Engineering you have the choice of the widest range of engineering degree course specialisations in the country through our nine engineering schools.

There are also opportunities to combine your engineering degree with a degree from another faculty, or boost your bachelor degree by combining it with a concurrent masters program. Whichever way you look at it, you’ll be exposed to a rich and challenging experience on all levels, surrounded by other students and teaching staff who are inspiring, passionate and driven.
Bachelor of Engineering (Hons)

The foundation of engineering study at UNSW is the Bachelor of Engineering (Honours) degree. This program offers students a choice of 21 different specialisations, which are described over the coming pages.

However, since most of the specialisations have a common set of courses in the first year, you don’t necessarily need to choose right away thanks to our Flexible First Year option, or you may be able to transfer between specialisations. What’s more, with so many electives available to choose from, UNSW Engineering offers plenty of scope for you to design a degree that reflects your personal interests and passions.

**Program structure**

**Year 1**

All first-year engineering students (except those in Bioinformatics, Civil with Architecture and Software Engineering) study five common subjects to gain the same basic engineering science knowledge: mathematics (two subjects), physics, computing and engineering design.

Those enrolled in a specific engineering degree complete one additional core subject and two electives, while Flexible First Year students (see below) complete three electives.

**Year 2**

Engineering degrees begin to diverge in second year, when you start to focus on the core principles of your chosen discipline. Subjects consolidate the essential skills gained in first year, but also introduce new concepts and practical skills used later in the course.

**Year 3**

Third year expands on core engineering subjects and introduces a major design project. You also start to choose further electives and specialise.

The design project provides valuable experience in project management, problem-solving, marketing, budgeting and teamwork – all necessary skills of a good engineer. At the end of third year you are required to undertake at least 60 days of industry training.

**Year 4**

A thesis project is the main component of your final year. This is typically a year-long engineering project on a topic that you and your academic supervisor have agreed upon. Engineering management and ethics subjects are usually taken in the final year, too. You may also choose professional electives to develop areas of specialisation.

**Internal transfer**

At the end of the first year, UNSW’s internal transfer program allows students to apply to switch from one engineering discipline to another, subject to availability and grades. This can also be done later in your degree, but you may not complete your studies within the minimum timeframe. However, you could discover a career path better suited to your strengths and talents.

**Flexible First Year**

If you really don’t know which area of specialisation to choose, don’t fret – you’re not alone. In fact, many of our engineering students choose to enrol in the Flexible First Year program. As well as core subjects, students can choose electives that appeal to them, without committing to a specific discipline until the end of the first year. For more information, see page 47.
A dual degree = less time + more jobs

Those who are interested in taking their study to the next level might consider extending their bachelor degree by combining it with another degree or, in some cases, by completing a masters program. Making this decision up front allows you to get more achieved in less time, and gives you more options when you graduate.

Bachelor + Masters

A masters degree provides a deeper specialisation and a higher level of understanding. By completing a masters and a bachelor degree concurrently, you can not only save a large amount of time, but you’ll get significant exposure to cutting edge research and project work.

Master of Biomedical Engineering/Bachelor of Engineering (Hons)

UAC code: 425950
2015 cut-off: 91.30
Program length: 5 years

Ideal for: Students interested in bridging the career gap between clinical medicine and the complex world of medical technologies. Biomedical Engineering is only available as a masters program – see page 24.

Bachelor of Engineering (Hons)/Bachelor of Science

UAC code: 425850
2015 cut-off: 91.00
Program length: 5 years

Ideal for: Combining problem-solving skills with the fundamental principles of science to create a valuable qualification for many industries, such as government positions and research careers.

Bachelor of Engineering (Hons)/Bachelor of Commerce

UAC code: 425900
2015 cut-off: 96.30
Program length: 5.5 years

Ideal for: Combining structured and technical studies in engineering with a broad and flexible arts degree. It’s a great way to expand career options in the social sciences, creative and performing arts, humanities and technology sectors.

Bachelor of Engineering (Hons)/Bachelor of Science in Computer Science

UAC code: 425850
2015 cut-off: 91.00
Program length: 5 years

Ideal for: Students who want to build the software and hardware for use in specific engineering fields.

Bachelor of Engineering (Hons)/Bachelor of Arts

UAC code: 425850
2015 cut-off: 91.00
Program length: 5-5.5 years**

Ideal for: Combining problem-solving skills with the fundamental principles of science to create a valuable qualification for many industries, such as government positions and research careers.

Bachelor of Engineering (Hons)/Bachelor of Laws

UAC code: 426000
2015 cut-off: 99.70*
Program length: 6-6.5 years**

Ideal for: Students who wish to become familiar with the legal and social aspects of the engineering profession, and skilled in technical management or as a legal practitioner, to add a deeper dimension to their training.

Bachelor + Bachelor

Combining two degrees is a great way to enhance your career prospects without extending your studies too long. It takes five or six years to complete a dual degree, but it can put you at a distinct advantage when applying for consulting and management positions. Dual degrees are especially suited to those who liked a range of disciplines at high school.

Bachelor of Engineering (Hons)/Bachelor of Science

UAC code: 425850
2015 cut-off: 91.00
Program length: 5 years

Ideal for: Combining problem-solving skills with the fundamental principles of science to create a valuable qualification for many industries, such as government positions and research careers.

Bachelor of Engineering (Hons)/Bachelor of Commerce

UAC code: 425900
2015 cut-off: 96.30
Program length: 5.5 years

Ideal for: Students who wish to become more aware of the economic and social aspects of engineering. Useful for work in the commercial sector, including banking and consultancy work.

Bachelor of Engineering (Civil)/Bachelor of Engineering (Mining or Environmental)

UAC code: 425401
2015 cut-off: 91.10
Program length: 5 years

Ideal for: Students keen to broaden their skillset via two related disciplines.

Bachelor of Engineering (Hons)/Bachelor of Science

UAC code: 425850
2015 cut-off: 91.00
Program length: 5 years

Ideal for: Combining problem-solving skills with the fundamental principles of science to create a valuable qualification for many industries, such as government positions and research careers.

Bachelor of Music/Bachelor of Engineering (Hons)

UAC code: 422525
2015 cut-off: 91.00 + Audition
Program length: 6.5 years

Ideal for: Musicians looking to receive solid pre-professional training alongside their engineering degree.

Bachelor of Engineering (Hons)/Bachelor of Arts

UAC code: 425850
2015 cut-off: 91.00
Program length: 5-5.5 years**

Ideal for: Combining structured and technical studies in engineering with a broad and flexible arts degree. It’s a great way to expand career options in the social sciences, creative and performing arts, humanities and technology sectors.

Bachelor of Engineering (Hons)/Bachelor of Laws

UAC code: 426000
2015 cut-off: 99.70*
Program length: 6-6.5 years**

Ideal for: Students who wish to become familiar with the legal and social aspects of the engineering profession, and skilled in technical management or as a legal practitioner, to add a deeper dimension to their training.

Note: BE (Hons) Civil with Architecture and BSc Food Science and Technology cannot be combined with any other degree

*Check the UNSW Law UG Guide and Law website for current entry requirements
**Depends on subjects selected
<table>
<thead>
<tr>
<th>Program name</th>
<th>Master of Biomedical Engineering</th>
<th>Arts</th>
<th>Commerce</th>
<th>Law</th>
<th>Science</th>
<th>Includes Advanced Science and Advanced Maths</th>
<th>Music</th>
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### Bachelor of Science in Computer Science/Bachelor of Commerce

UAC code: 424100  
2015 cut-off: 96.30  
Program length: 4 years  

**Ideal for:** Equipping students with the latest thinking in business and technology for today and the future: think app entrepreneur or software mogul.

### Bachelor of Science in Computer Science/Bachelor of Media Arts

UAC code: 425800  
2015 cut-off: 91.00  
Program length: 5 years  

**Ideal for:** Students who want both a technical and creative foundation for the development and use of computer graphics and associated fields.

### Bachelor of Science in Computer Science/Bachelor of Arts or Science

UAC code: 425800  
2015 cut-off: 91.00  
Program length: 4 years  

**Ideal for:** Students who wish to broaden the scope of their technical qualification with another major from Science or Arts.

### Bachelor of Science in Computer Science/Bachelor of Law

UAC code: 426000  
2015 cut-off: 99.70  
Program length: 5 years  

**Ideal for:** Students who wish to explore the legalities of the digital age, including intellectual property, computer forensics and cyberspace laws.

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*Check the UNSW Law UG Guide and Law website for current entry requirements*

For more information:  
UNSW Online Handbook: [handbook.unsw.edu.au](http://handbook.unsw.edu.au)
When I was a child, I vividly remember being amazed by how something as heavy as an aeroplane could fly through the sky. It was the combination of that and a passion for problem-solving and technical challenges that got me interested in aerospace engineering. I then received a Taste of Research scholarship, which gave me the chance to develop my critical thinking skills, and has led me to seriously consider research as a career path.
Bioinformatics Engineering

> UAC code 425770

Bioinformatics Engineering is the fusion of computing and life sciences aimed at the development of technologies for storing, extracting, organising, analysing, interpreting and using biological and genetic information.

What does it involve?
Length of study: 4 years
2015 cut-off: 91.00

Bioinformatics Engineering covers the foundation disciplines of bioinformatics, which includes biology (biochemistry, molecular biology and genetics), computing (algorithms, databases and programming), and mathematics and statistics.

The degree gives you the skills to design and implement computer software. For example, it may help you identify which genes to target in order to diagnose particular cancer types, or engineer bacteria to produce more efficient fuel.

Career Opportunities
You could work in:
- Pharmaceutical or biotech companies
- Medical technology
- Agriculture
- Consulting and finance industries

Use your skills to:
- Create and analyse biological databases
- Use mathematics to find patterns in bio data
- Map the human genome
- Develop new drugs
- Discover advances in crops and livestock
- Recommend new systems to improve results

Assumed Knowledge
HSC Mathematics Extension 1, Chemistry

Bioinformatics Engineering is the fusion of computing and life sciences aimed at the development of technologies for storing, extracting, organising, analysing, interpreting and using biological and genetic information.
Biomedical Engineering

> UAC code 425950

Biomedical Engineering is the application of engineering analysis and techniques to problem-solving in medicine and life sciences. Biomedical engineers bridge the gap between clinical medicine and the increasingly complex world of medical technologies.

What does it involve?

Length of study: 5 years (dual degree)
2015 cut-off: 91.30

Biomedical Engineering is a masters degree taken concurrently with an undergraduate engineering degree in Bioinformatics, Chemical, Computer, Electrical, Mechanical, Mechatronic, Software, Telecommunications or Materials Science (offered by the Faculty of Science).

The BE/MBiomedE degree integrates a four-year BE degree and the 18-month MBiomedE degree into a single five-year full-time degree, with Biomedical Engineering courses taken from Year 1.

Assumed Knowledge

HSC Mathematics Extension 1, Physics

Career opportunities

You could work in:
- Hospitals
- Regulatory bodies
- Research institutions
- Tertiary education
- The medical devices or biotechnology industries

Use your skills to:
- Develop systems to maintain and enhance life
- Design body parts or tissues
- Develop artificial organs and organ replacement devices
- Design, develop and refine medical imaging systems
- Manage technology in the healthcare system
- Improve robotic surgery
- Invent health technologies

Find out more

gsbme.unsw.edu.au
biomedeng@unsw.edu.au
+61-2-9385-1148

Tsing Lee
Mechanical Engineering/Biomedical Engineering

“I have always loved maths and science, so I chose engineering because I knew that it would allow me to combine these fields. I decided on Mechanical Engineering because I love moving things and figuring out how they work, and opted to combine it with Biomedical Engineering because the emerging technologies in this field are so exciting. Going to uni for the first time, I thought the lecturers would be much scarier, but it turns out they are very nice people who genuinely want to help you learn.”
I was drawn towards the numerical, problem-solving nature of engineering, yet it was my interest in chemistry and the ability of chemical engineers to tackle some of the world's biggest challenges, which led me to choose the 'universal engineering' field – chemical engineering. Undertaking a Chemical Engineering degree at UNSW has already provided me with priceless skills and I am looking forward to a stimulating and rewarding career.

Tom Perfremnt
Chemical Engineering

Chemical Engineering

> UAC code 425550

Chemical engineers design, create and optimise the systems and equipment used in chemical, industrial, biological and environmental processes. They produce a range of materials, from fuels and fertilisers to processed foods, beer and wine, polymers, and pharmaceuticals.

What does it involve?
Length of study: 4 years
2015 cut-off: 91.00

Chemical Engineering bridges the study of the chemical and physical sciences with engineering.

The major study activities in Chemical Engineering are: the design and development of chemical processes and equipment; optimisation and control of industrial operations; plant operation and management; and environmental management and pollution control.

Management, critical analysis and economics are very important components of the undergraduate training.

Assumed Knowledge
HSC Mathematics Extension 1, Physics

Career opportunities
You could work in:
• Water treatment and recycling
• Environmental health and safety management
• The energy and petrochemical industries
• Manufacturing
• Food processing
• Research, from molecular level up to full heavy-industry scale

Use your skills to:
• Manufacture products such as nanomaterials
• Produce energy
• Provide food and clean water
• Design systems and processes to manage environmental impacts
• Improve chemical processes in manufacturing

Find out more
che.unsw.edu.au
che@unsw.edu.au
+61-2-9385-4319

* sample degree structure
Civil Engineering

What does it involve?
Length of study: 4 years
2015 cut-off: 91.10
This exciting UNSW degree provides students with an excellent grounding in civil engineering fundamentals and applications.

You'll study subjects in structural engineering, geotechnical engineering, transport engineering and water engineering, as well as construction and management.

Students have the opportunity to specialise in their fourth year with a full suite of electives offered in each area of Civil Engineering.

Assumed Knowledge
HSC Mathematics Extension 1, Physics

Career opportunities
You could work in:
- Specialist consulting firms
- Construction companies
- Large public companies
- Government organisations that construct, manage and maintain public utilities
- Financial and management consultants
- Both the office and in the field
- Australia and around the world

Use your skills to:
- Investigate, plan, design and manage projects
- Build bridges, dams, buildings, towers or roads
- Design and construct transport systems
- Manage city infrastructure, like the water, gas and railway systems

Career opportunities

What does it involve? Length of study: 4 years 2015 cut-off: 91.10 This exciting UNSW degree provides students with an excellent grounding in civil engineering fundamentals and applications. You'll study subjects in structural engineering, geotechnical engineering, transport engineering and water engineering, as well as construction and management. Students have the opportunity to specialise in their fourth year with a full suite of electives offered in each area of Civil Engineering. Assumed Knowledge HSC Mathematics Extension 1, Physics Career opportunities You could work in: - Specialist consulting firms - Construction companies - Large public companies - Government organisations that construct, manage and maintain public utilities - Financial and management consultants - Both the office and in the field - Australia and around the world Use your skills to: - Investigate, plan, design and manage projects - Build bridges, dams, buildings, towers or roads - Design and construct transport systems - Manage city infrastructure, like the water, gas and railway systems
Civil Engineering with Architecture

> UAC code 425450

Civil engineers essentially design and manage the infrastructure of our built environment. This innovative degree extends the current Civil Engineering bachelor degree by including a number of subjects in Architecture.

What does it involve?

Length of study: 4 years
2015 cut-off: 95.10

This degree incorporates classes in architecture to provide civil engineers with an appreciation and understanding of architectural principles. Creativity and inventiveness are the key attributes of this degree.

The ultimate aim is to help students become great engineers as well as conceptual thinkers, with an appreciation for beauty and the mathematical ability to challenge the traditional boundaries of structural design.

Assumed Knowledge

HSC Mathematics Extension 1, Physics

Career opportunities

You could work in:

- Specialist structural engineering consultancies
- Construction and contracting companies
- Federal, state and local government organisations
- Airport and harbour authorities
- Project development
- As financial and management consultants in large corporations
- Australia and around the world

Use your skills to:

- Create structures that require in-depth technical knowledge
- Collaborate with architects and other professionals in built environment teams
- Produce integrated and sustainable designs

BE (Hons) in Civil Engineering with Architecture

Year 1*

Mathematics x 2
Physics
Enabling Skills
Engineering Mechanics
Engineering Design
Electives x 2

Year 2*

Architectural Design Studio 1
Architectural Communications
Engineering Computations
Engineering Construction
Architectural Design Studio 2
Mechanics of Solids
Structural Analysis and Modelling
Engineering Mathematics

Year 3*

Soil Mechanics
Principles of Water Engineering
Engineering Operations
Applied Geotechnics and Engineering Geology
Steel Structures
Concrete Structures
FBE Elective
Water and Wastewater Engineering

Year 4*

Architectural Design Studio 3
Thesis
Design Practice
Plus Electives in Engineering and FBE

* Sample degree structure

Find out more

civeng.unsw.edu.au

cven.enquiries@unsw.edu.au

+61-2-9385-5033/4198

Michael Chernyavsky
Civil Engineering with Architecture

“I chose my degree because I was fascinated with bridges, buildings and dams in high school. I wanted a degree that would be challenging and would lead to a dynamic job. The Civil Engineering with Architecture degree is perfect for me because it’s teaching me to look not only how things are built, but why. It also provides a more complete outlook into the civil engineering industry.”
Computer Engineering

> UAC code 425700

Computer Engineering is concerned with the theory, design and development of computer systems, and their integration into a wide range of systems such as consumer electronics, transportation, medical equipment and in the telecommunications industry.

What does it involve?

Length of study: 4 years
2015 cut-off: 91.00

The Computer Engineering degree, jointly developed by the schools of computer science and Engineering, and Electrical Engineering, aims to produce graduates with a sound knowledge in both the hardware and software aspects of computer systems.

Computer engineers learn theoretical concepts in engineering, Computer Science, mathematics and physics, along with the skills to utilise that theory in practice.

Assumed Knowledge

HSC Mathematics Extension 1, Physics

Career opportunities

You could work in:
- Digital electronics
- Processor chip designs
- Image processing
- Commercial systems
- Telecommunications
- The power industry
- Defence
- The development of gaming machines

Use your skills to:
- Develop hardware and software systems
- Design chips
- Research and construct networks
- Write enabling software that makes systems work seamlessly

Samantha McGrath
Computer Engineering/Biomedical Engineering

"I initially chose Electrical Engineering as my undergraduate degree, however I found that I really enjoyed the introductory computing courses, so I transferred to Computer Engineering. My program has been challenging and rewarding; there are so many interesting areas of computing to study. I have particularly enjoyed Algorithms and Programming Techniques, which focuses on problem-solving. I am also being taught how to think rather than just what to think."
Bachelor of Computer Science

Year 1*
Computing x 2
Discrete Mathematics
Mathematics x 2
Electives x 3

Year 2*
Software Construction
Microprocessors and Interfacing
Engineering Design in Computing
General Education
Electives x 4

Year 3*
Management and Ethics
General Education
An Elective
Third or Fourth Year
Computing Electives x 5

Year 4 honours (optional)
Thesis
Fourth Year Computing
Electives x 5

* sample degree structure

Computer Science

> UAC code 425800

Computer Science is concerned with the core principles and technologies that make up the entire range of computer-based systems. It studies the principles underlying computer hardware, algorithms, operating systems, networks, databases, graphics and artificial intelligence, and also the practice of building these systems.

What does it involve?

Length of study: 3 years, plus optional 4th year
2015 cut-off: 91.00

Computer Science is the most flexible degree in computing. One-third of the subjects are free electives, which means you can easily combine your study in computing with other areas, including law, languages, philosophy, sciences and commerce.

Computer Science focuses on the design and development of hardware and software tools that are used to create computer applications, rather than the applications themselves. Particular emphasis is given to understanding the basic principles behind computing tools, operating systems, compilers and translators, and computer hardware.

Assumed Knowledge

HSC Mathematics Extension 1

Career opportunities

You could work in:
- A software company
- Commercial institutions
- Internet-related companies
- IT units for most private sector and government organisations
- Research organisations or universities

Use your skills to:
- Program computers
- Support system users
- Work in network administration
- Create software
- Develop robots and artificial intelligence
- Improve device efficiency

Dan Padilha
Computer Science/Aerospace Engineering

“I was given the opportunity by my high school IT teacher to form a team to compete in the UNSW programming competition. When it came time to choose a uni, I decided on UNSW mainly because of its extremely strong reputation in engineering. They were offering the engineering field I’m most passionate about, and the possibility to combine it with other programs like science.”

Find out more
computing.unsw.edu.au
undergrad@cse.unsw.edu.au
+61-2-9385-4329
James Roberts-Thomson
Electrical Engineering/Commerce

“I chose to study Electrical Engineering because I’m fascinated by the way technology can improve the lives of everyone around us. UNSW has been a fantastic place to do this. I have really enjoyed being surrounded by other passionate people and all of the opportunities there are to get involved in student-led projects so you can apply the skills you’re learning!”
# Electrical Engineering
(Combined Bachelor/Master)

> UAC code 425150

The Bachelor of Engineering/Master of Engineering (BE ME) in Electrical Engineering is a five year integrated program that gives students the opportunity to choose a minor in one of many areas of interest. Students experience improved flexibility, better specialisation and more design opportunities as they study to be awarded two degrees in five years.

## What does it involve?

### Length of study:
- 5 years

### 2015 cut-off:
- 95.00

### Improved flexibility
- After your first year, you can choose from more than 20 postgraduate electives.

### Better specialisation
- Maximise your learning by being at the cutting edge of the Electrical Engineering disciplines of your choice.

### More design
- Be a step ahead thanks to a coursework thread in engineering design that unfolds from years one to four.

### Easy integration with international exchange
- Study up to six courses overseas as a part of the minor.

## Career opportunities

You could work in:
- Because the BE ME provides the benefit of a bachelor degree in electrical engineering alongside a much more in-depth study of a particular area, students are able to focus their career in a particular area of their choice. You will have the skills and knowledge to step into a career with more ease and confidence.

During engineering study, students can pursue their interests in the following areas:
- Satellite systems
- Nuclear engineering
- Geospatial systems
- Photovoltaics
- Mechatronics
- Computing
- Music
- Language
- Psychology

## Assumed Knowledge

HSC Mathematics Extension 1, Physics

## Sample degree structure

### Year 1*
- Mathematics x 2
- Physics x 2
- Higher Computing 1
- Introduction to Engineering
- Design and Innovation
- Electrical Circuits
- Digital Circuits

### Year 2*
- Mathematics x 2
- Analogue Electronics
- Circuits and Signals
- Embedded Systems Design
- Electrical System Design
- Subject for Chosen Minor
- An Elective

### Year 3*
- Electromagnetic Engineering
- Digital Signal Processing
- Electrical Energy
- Control Systems
- Electrical Engineering Design
- Subject for Chosen Minor
- An Elective
- General Education

### Year 4*
- Thesis
- Strategic Leadership and Ethics
- Electrical Design Proficiency
- Subject for Chosen Minor
- Electives x 3

### Year 5*
- Project Report
- Engineering and Technical Management Course
- Subject for Chosen Minor
- Electives x 6

---

**Jake Linnenbank**

BE/ME in Electrical Engineering

>*The best part of my program is being able to see the theory that we learn in lectures applied in real-life scenarios. We can physically experience these new ideas and develop a much better understanding of both the topics and our role as engineers. At UNSW the staff and students are really friendly, which makes for a fantastic place to be.*
Environmental Engineering

> UAC code 425470

Environmental engineers protect and improve human health and safety, and the natural environment. They apply their broad knowledge of engineering and environmental processes to developing effective solutions for various environmental problems and the provision of sustainable infrastructure.

What does it involve?

Length of study: 4 years
2015 cut-off: 91.00

Environmental Engineering embraces aspects of civil engineering – including management, systems design, and water, geotechnical and transport engineering – and combines them with elements of chemical engineering, applied and biological sciences, and environmental studies.

The degree places an emphasis on sustainability, environmental processes, environmental management, planning projects to reduce environmental impact, and rehabilitation of environmental damage.

Assumed Knowledge

HSC Mathematics Extension 1, Physics

Career opportunities

You could work in:

- The water industry
- Construction
- Energy
- The manufacturing industry
- International aid groups
- All levels of government

Use your skills to:

- Work on water loss initiatives
- Consult on major tender projects like recycling or desalination
- Work in wastewater treatment plants
- Plan sustainable infrastructure
- Contribute to environmental impact assessments
- Improve water use in developing countries

Career opportunities

You could work in:

- The water industry
- Construction
- Energy
- The manufacturing industry
- International aid groups
- All levels of government

Use your skills to:

- Work on water loss initiatives
- Consult on major tender projects like recycling or desalination
- Work in wastewater treatment plants
- Plan sustainable infrastructure
- Contribute to environmental impact assessments
- Improve water use in developing countries

Belinda Lau
Civil Engineering/Environmental Engineering

“I’d like to have a career where I can make a tangible difference in our world and help to build a sustainable future for ourselves and the environment. By studying Environmental Engineering, I’m learning how to create practical solutions to everyday problems like keeping our drinking water safe and improving public transport services. I chose UNSW because it has the most flexibility and some interesting double degree combinations.”
Food Science and Technology is about using chemical, biological and physical science to understand the nature of foods and the changes that occur both naturally and as a result of handling and processing. From the components of flavours and nutrition, to product development, food storage and safety.

What does it involve?
Length of study: 4 years
2015 cut-off: 91.00
Food Science and Technology builds on fundamental knowledge in sciences such as chemistry, microbiology, biochemistry and biotechnology to optimise the quality and safety of foods. This is achieved through appropriate processing and packaging for a wide variety of food markets, both national and international.

Students are encouraged to obtain as much professionally oriented or industry experience as possible before the completion of the degree.

Assumed Knowledge
HSC Mathematics, Chemistry

Career opportunities
You could work in:
• Processing and production
• Research and development
• Quality assurance
• Information technology
• Nutrition
• Fitness
• Management
• Companies, or in state and federal governments

Use your skills to:
• Design and develop products
• Do research in agriculture or aquaculture
• Work with ingredient manufacturers
• Operate in the food industry’s retail sector
• Work in marketing or PR
• Educate consumers
• Work in community nutrition

Find out more
che.unsw.edu.au
che@unsw.edu.au
+61-2-9385-4319

Chloe Paton
Food Science and Technology

“I didn’t know whether I wanted to study science or engineering and this degree gave me the flexibility to do both. Plus, I can also specialise in whatever area I want, whether that be nutrition or the technology side of food science.”
Geospatial Engineering

> UAC code 425500

Geospatial engineers use high precision measurement technologies to link information in space and time. They utilise satellites, aerial imagery, laser scanners and GPS, combined with IT tools for spatial analysis of everything that can be mapped – cities, vegetation, populations and even disease.

What does it involve?

Length of study: 4 years
2015 cut-off: 91.00

The undergraduate degree in Geospatial Engineering is the pathway to an amazing range of careers. It focuses on GIS, spatial analysis, satellite imagery and Earth observation, and includes a significant component of Computer Science subjects.

The geospatial revolution has created a skills shortage globally and we offer excellent scholarships.

Assumed Knowledge

HSC Mathematics Extension 1, Physics

Career opportunities

You could work in:
- Emergency services
- Urban planning
- Health
- Management of natural resources
- Insurance
- Transport planning
- The United Nations
- Google

Use your skills to:
- Use and improve GPS
- Work in geodatabase systems
- Utilise geoinformation technology
- Create and analyse satellite imagery
- Use remote sensing
- Assist business and government in decision-making

Career opportunities

You could work in:
- Emergency services
- Urban planning
- Health
- Management of natural resources
- Insurance
- Transport planning
- The United Nations
- Google

Use your skills to:
- Use and improve GPS
- Work in geodatabase systems
- Utilise geoinformation technology
- Create and analyse satellite imagery
- Use remote sensing
- Assist business and government in decision-making

Assumed Knowledge

HSC Mathematics Extension 1, Physics

Find out more

civeng.unsw.edu.au
cven.enquiries@unsw.edu.au
+61-2-9385-5033/4198

Timothy Kerr
Geospatial Engineering

“I chose to study this degree because it’s a very interesting and challenging area of engineering, plus I had heard there was a good job market. Choosing UNSW was a no brainer because it has the best engineering programs in NSW and it’s the largest faculty of engineering in Australia. I don’t know what I was expecting when I came to UNSW, but I can tell you uni is a lot different from school: there’s much more freedom, flexibility and independence.”
**Industrial Chemistry**

> **UAC code 425550**

Industrial chemists are responsible for the research and operation of chemical processes in industries such as cosmetics, pharmaceuticals, food, mineral processing, paint, polymers, fertilisers and wine. They are often solving problems at the cutting edge of environmental management.

**What does it involve?**

Length of study: 4 years

2015 cut-off: 91.00

Industrial Chemistry involves researching, developing and improving the properties of products we use every day. This occurs through the selection of raw materials, the design of chemical processes and also the conditions for production.

Industrial chemists are able to take ideas from inception as a research proposal, through product development and on to commercialisation and manufacture. Since Industrial Chemistry prepares graduates for a broad range of careers, management and economic subjects are very important components of the degree.

**Assumed Knowledge**

HSC Mathematics Extension 1, Physics, Chemistry

**Career opportunities**

You could work in:

- Research and development
- The food industry
- Pharmaceuticals
- Polymers
- Chemicals
- Petrochemicals and minerals
- Energy
- Materials and manufacturing

Use your skills to:

- Research new processes and materials
- Develop new chemicals
- Be a technical representative
- Manage a plant or company
- Invent a range of new manufacturing processes
- Streamline environmental treatment
- Improve efficiency in certain fields

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*I chose Industrial Chemistry because I enjoyed chemistry and wanted to put my skills into use in the industry. Industrial Chemistry is better than anything I could have imagined. I have completed experiments with extremely toxic chemicals (and some fun ones like liquid nitrogen), worked at two international companies, had numerous site visits to large-scale industrial plants, and was involved with ground-breaking research for my thesis project (which may get published internationally).*

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**Joseph Tannous**

Industrial Chemistry
Mechanical and Manufacturing Engineering

> UAC code 425050

Manufacturing engineers take charge of the entire product cycle. They ensure both efficient design and manufacture, and also control and operate all of the systems used.

What does it involve?
Length of study: 4 years
2015 cut-off: 91.00

Mechanical and Manufacturing Engineering is designed to provide comprehensive academic training for those wishing to become an engineer who can design and also build. These attributes benefit not only the aerospace, mechatronics and shipbuilding industries, but also industry in general.

In the third and fourth years of the degree, the focus is on applications of engineering with an emphasis on management, the operation of systems, economics, product design and manufacturing technology. Each student is required to submit a thesis at the end of the final year and to deliver a seminar on the topic of the thesis.

Assumed Knowledge
HSC Mathematics Extension 1, Physics

Career opportunities
You could work in:
- Manufacturing companies
- Process engineering
- Warehousing and logistics
- Consulting companies
- Service industries such as transport and banking
- Business and operations modelling

Use your skills to:
- Plan and implement strategies for process improvement
- Automate a manufacturing facility
- Design processes to reduce costs and improve product quality
- Schedule machines and equipment for optimum performance
- Implement fabrication processes for nano-devices
- Identify the most cost-effective facility layout

BE (Hons) in Mechanical and Manufacturing Engineering

Year 1*
Mathematics x 2
Physics
Computing for Engineers
Engineering Mechanics 1
Introduction to Engineering Design and Innovation
Electives x 2

Year 2*
Design and Manufacturing
Mechanics of Solids 1
Thermodynamics
Engineering Mathematics
Engineering Mechanics 2
Fluid Mechanics
Engineering Design 2
Electrical and Telecommunications Engineering

Year 3*
Process Technology and Automation
Design for Manufacturing
Linear Systems and Control
Mechanical Design 1
Numerical Methods and Statistics
Professional Engineering and Communication
General Education x 2

Year 4*
Process Modelling and Simulation
Design and Analysis of Product-Process Systems
Engineering Management
Reliability and Maintenance Engineering
Thesis
Professional Electives x 2

* sample degree structure

Find out more
mech.unsw.edu.au
mech@unsw.edu.au
+61-2-9385-4093

Titro Yuandi
Manufacturing/Materials Science

“UNSW is a world-class university in the field of engineering. It’s also really flexible. I moved from Mechatronic to Mechanical and then to Manufacturing because of the practical knowledge being taught. I believe that having broad problem-solving and analytical skills is a very important aspect of being an engineer. I am thrilled that my degree will allow me to consider many different career options.”
Mechanical Engineering

> UAC code 425050

Mechanical Engineering addresses the design of all types of mechanical plants, the supervision of construction, operation and maintenance, and the planning and supervision of large engineering projects. They also design simple devices like door locks and fishing reels. In fact, mechanical engineers play a role in most of the things that people drive, play with or live in.

What does it involve?

Length of study: 4 years
2015 cut-off: 91.00

Mechanical Engineering is the broadest of all the available disciplines students can tackle in the School of Mechanical and Manufacturing Engineering.

In second and third year, students take specialised Mechanical Engineering courses, including fluid dynamics, mechanics of solids, thermodynamics and heat transfer, power generation, noise and vibration, and composite mechanics and structures.

Students also learn computer-aided design and manufacturing, and undertake design projects.

Assumed Knowledge

HSC Mathematics Extension 1, Physics

Career opportunities

You could work in:
- Mechanical engineering consultancies
- The automotive industry
- Building services
- The environmental sector
- Transport
- The construction industry
- Management consultancies
- Power generation
- Refineries
- The mining industry
- Insurance industries

Use your skills to:
- Design vehicles and machines
- Design transport and transport systems
- Design consumer goods
- Integrate manufacturing technology, such as robotics and automation, for optimum performance

Find out more

mech.unsw.edu.au
mech@unsw.edu.au
+61-2-9385-4093

Joanna Iskandar
Bachelor of Mechanical Engineering

“The best part of my studies is that I get to work on a real industry project. I’m currently working with Caterpillar on automating the drilling process of mining equipment and have secured a graduate position with Rio Tinto.”
Find out more
mech.unsw.edu.au
mech@unsw.edu.au
+61-2-9385-4093

“It was the wealth of extra-curricular projects available for students that attracted me to UNSW Engineering. I chose Mechatronics because I wanted my degree to give me a wide skill set, and I wanted to be able to pursue all of my three passions – computing, electronics and mechanical engineering – without having to compromise.”
Find out more
mining.unsw.edu.au
mining@unsw.edu.au
+61-2-9385-5006

Mining Engineering
> UAC code 425300

Mining Engineering is concerned with the planning, design, operation, management and sustainability of mines. Mining engineers are responsible for the safe, economic and environmentally sound extraction of minerals and resources from the earth.

What does it involve?
Length of study: 4 years
2015 cut-off: 91.00

Mining Engineering at UNSW gives students access to world class lecturers and industry experts. They experience innovative learning methods in a 3D virtual reality simulator, and undergo field trips and industrial training.

The degree covers mine design and planning, mining systems, geotechnical engineering and mining technologies including ventilation, rock breakage, mine management and sustainability. Students also deliver a seminar and a thesis as part of the research project in their final year.

Assumed Knowledge
HSC Mathematics Extension 1, Physics

Career opportunities
You could work in:
• Mining companies
• Service supply companies
• Consultancy firms
• Universities
• Investment firms
• State and federal governments
• All around the world

Use your skills to:
• Manage mines
• Plan and design mines
• Manage operations within the mine
• Oversee technical services
• Be an investment analyst
• Inspect mines

* Mining Engineering is all about discovering the most efficient and effective way to mine the ore or mineral that is needed, and the different techniques required for each unique site. There are so many aspects in mining engineering to learn and work with; you have important minerals such as gold, silver and copper, and ores such as iron and coal. It is a universal degree where you have a real chance to work overseas (which in itself is a learning experience). Mining engineering is just one door that leads to a thousand others.*

Adrian Cumerlato
Mining Engineering
Naval Architecture

> UAC code 425050

Naval Architecture is concerned with the design, construction and operation of all types of ships and marine vehicles, including commercial, recreational and military vessels. Naval architects ensure their fitness-for-purpose, seaworthiness, efficiency and environmental friendliness.

What does it involve?

Length of study: 4 years
2015 cut-off: 91.00

Students are introduced to Naval Architecture through industry visits where they can see first-hand the design, maintenance and operation of ships. Naval Architecture courses include resistance and propulsion, hydrostatics and hydrodynamics, ship structures, marine engineering and contracts and tendering.

In the third and fourth years of the degree, students undertake the specialised Naval Architecture courses, including, in the final year, the design of yachts and high-speed craft, as well as your own ship design project.

Assumed Knowledge

HSC Mathematics Extension 1, Physics

Career opportunities

You could work in:
- Naval architecture firms
- Shipbuilding yards
- Government
- Ship classification societies
- Defence
- Ship management
- Consultancies
- Ship owner organisations

Use your skills to:
- Design high-speed ferries, high-performance yachts, tankers, container vessels, submarines or deep-sea oil rigs
- Manage regulatory activities
- Build and repair ocean-going vessels
- Practise offshore engineering
- Survey ships
- Conduct research and development

Find out more

mech.unsw.edu.au
mech@unsw.edu.au
+61-2-9385-4093

James Heydon
Naval Architecture

“At university everyone is a lot more friendly and focused than at school, and it’s great to learn with people who take an interest in their studies. I did work experience in second year, which landed me a job with the Department of Defence. Now I live at a college on campus; it’s very social and I’ve had some amazing experiences I wouldn’t have had living at home. UNSW has been a great place to meet new people and create new memories.”
**BE (Hons) in Petroleum Engineering**

**Year 1**
- Mathematics x 2
- Physics
- Engineering Design
- Computing for Engineers
- Engineering Materials and Chemistry
- Electives x 2

**Year 2**
- Fluid and Particle Mechanics
- Fundamentals of Petroleum Geology
- Engineering Mathematics
- Introduction to Petroleum Industry
- Business Practices in the Petroleum Industry
- Introduction to Petrophysics
- Reservoir Engineering A
- General Education

**Year 3**
- Reservoir Engineering B
- Reservoir Characterisation and Simulation
- Field Development Geology and Geophysics
- Well Drilling Equipment and Operations
- Petroleum Engineering Design Project
- Formation Evaluation
- Petroleum Economics
- An Elective

**Year 4**
- Oil and Gas Field Evaluation Thesis
- Enhanced Oil and Gas Recovery
- Well Technology
- Natural Gas Engineering
- Petroleum Production Engineering
- General Education
- An Elective

*sample degree structure

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**Petroleum Engineering**

> UAC code 425650

Petroleum Engineering is concerned with the recovery of gas and oil from the earth in an efficient, safe and environmentally responsible manner, in order to satisfy the world’s ever-increasing energy needs for many decades to come.

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**What does it involve?**

**Length of study:** 4 years

2015 cut-off: 91.00

The Petroleum Engineering degree is internationally accredited. It prepares graduates for work in all aspects of oil and gas development and production, coal seam gas production, geothermal energy, and carbon dioxide storage.

Major studies include; petroleum geology and geophysics, reservoir characterisation, drilling and completion, formation evaluation, oil and gas production, reservoir engineering and petroleum economics.

**Assumed Knowledge**

HSC Mathematics Extension 1, Physics

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**Career opportunities**

You could work in:

- Petroleum and gas companies
- Coal seam gas production
- Geothermal energy production
- Carbon dioxide sequestration
- Banks and finance companies
- Legal firms
- Environmental organisations

Use your skills to:

- Find new ways to extract oil and gas from old wells
- Design equipment to extract oil and improve gas profitability
- Research new drill locations
- Analyse and monitor well performance
- Use computer simulation to determine optimal well placement

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**Find out more**

[petrol.unsw.edu.au](http://petrol.unsw.edu.au)

[peteng@unsw.edu.au](mailto:peteng@unsw.edu.au)

+[61-2-9385-5189](tel:+61-2-9385-5189)

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*To become an engineer was my childhood dream and after ‘digging’ about, I discovered that UNSW is Australia’s top engineering university. Deciding on the type of degree to do wasn’t as easy – I decided on Petroleum Engineering because I wanted to be part of the solution to the world’s energy problems.*

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Jay Ye Zuo  
Petroleum Engineering  

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41
Photovoltaics and Solar Energy Engineering

> UAC code 425200

Photovoltaics Engineering is a degree focused on the manufacture and use of photovoltaic solar cells to generate electricity from sunlight, as well as the use of that energy to power practically any electrical load.

What does it involve?

Length of study: 4 years
2015 cut-off: 91.00

The Photovoltaics and Solar Energy degree provides education in Photovoltaic (PV) technology development, PV device manufacturing, PV system design and maintenance, as well as the use of other renewable energy technologies.

The degree also allows a student to specialise in a second strand of study. UNSW is a world leader in the field of photovoltaic engineering.

Assumed Knowledge

HSC Mathematics Extension 1, Physics

Career opportunities

You could work in:

- Solar cell manufacturing companies
- Research organisations
- Universities
- System design and integration
- Energy utilities
- Communications companies

Use your skills to:

- Improve existing solar cell technology
- Research and develop new photovoltaic cells
- Design integrated solar systems, both large and small
- Monitor quality and safety in large-scale solar installations

Career opportunities

You could work in:

- Solar cell manufacturing companies
- Research organisations
- Universities
- System design and integration
- Energy utilities
- Communications companies

Use your skills to:

- Improve existing solar cell technology
- Research and develop new photovoltaic cells
- Design integrated solar systems, both large and small
- Monitor quality and safety in large-scale solar installations

Year 1

Mathematics x 2
Physics x 2
Engineering Design
Computing for Engineers
Electives x 2

Year 2

Engineering Mathematics 2E
Numerical Methods and Statistics
Engineering Materials and Chemistry
Project in Photovoltaics and Solar Energy
Sustainable and Renewable Energy Technologies
Introduction to Electronic Devices
Applied Photovoltaics

Year 3

Photovoltaics Technology and Manufacturing
Low Energy Buildings and Photovoltaics
Solar Cells
General Education
Strand Electives x 3

Year 4

Strategic Leadership and Ethics
Grid-Connect Photovoltaics Systems
Thesis
PV Stand-Alone System Design and Installation
Electives x 3

*sample degree structure

Find out more

pv.unsw.edu.au
pv.course@unsw.edu.au
+61-2-9385-6848

Oscar Wilkie
Photovoltaics and Solar Energy Engineering

“This is a rapidly expanding field with an increased need for specialised photovoltaics engineers and there are constantly new opportunities arising. You could find yourself working with manufacturers of solar cells, research organisations, system design and integration companies, energy utilities and communications companies. Your career can take you to a number of exciting places both in Australia and overseas and can see you working on cutting-edge projects.”
Renewable Energy Engineering

> UAC code 425200

Renewable Energy Engineering is concerned with the generation or use of energy by sustainable methods. This includes biomass, energy efficiency, photovoltaics, solar architecture, solar thermal and wind.

What does it involve?
Length of study: 4 years
2015 cut-off: 91.00
Renewable Energy Engineering encompasses a wide range of renewable energy technologies and their use. It draws together resources from around UNSW into a coherent degree that supports learning of this growth industry.

Study areas include renewable energy technologies and systems, as well as applications such as; biomass, complementary technologies, environmental and policy issues, solar architecture, solar thermal systems, photovoltaics and wind generators.

Assumed Knowledge
HSC Mathematics Extension 1, Physics

Career opportunities
You could work in:
• Energy utilities
• Government
• Universities
• Design consultancies
• Environmental organisations
• Consultancies
• Planning authorities
• Both here and overseas, especially in developing countries

Use your skills to:
• Manufacture renewable energy equipment
• Maintain quality control and system reliability
• Affect computer-aided design of devices and systems
• Research and educate
• Design and analyse systems
• Diagnose and model faults

Find out more
pv.unsw.edu.au
pv.course@unsw.edu.au
+61-2-9385-6848

“After an open day I was impressed with the engineering facilities at the UNSW campus and the amount of information provided. UNSW was the only university offering Renewable Energy Engineering and it has a great engineering reputation, so my choice was easy. The best part of the program is the people. All of the lecturers and staff in my school are passionate about what they do and I share common values with the other students. As a result I’ve made a lot of great new friends.”
Software Engineering

> UAC code 425750

Software Engineering concentrates on the processes, methods and tools for the design and development of high-quality, reliable software systems. Completing this degree involves the study and application of software specification, design, implementation, testing and documentation.

What does it involve?
Length of study: 4 years
2019 cut-off: 91.00

Students will develop strong skills in software design and development, and will also gain a thorough grounding in fundamental computer science. There will also be substantial exposure to applications, giving a broad experience in aspects of software systems from the machine level to applications in both business and industry.

A feature of the degree is a software engineering workshop, which spans the first three years and enables students to work in teams and gain hands-on experience in software development.

Assumed Knowledge
HSC Mathematics Extension 1

Career opportunities
You could work in:
• Software development and computing
• Telecommunications
• Defence
• Finance
• Electronics
• Medical professions
• The power industry
• Transport

Use your skills to:
• Design advanced information systems
• Build technical systems
• Develop new network technologies
• Test and evaluate software
• Create artificial intelligence

BE (Hons) in Software Engineering

Year 1*
Computing x 2
Mathematics x 2
Engineering Design
Discrete Mathematics
Software Engineering Workshop 1
An Elective

Year 2*
System Modelling and Design
Engineering Design in Computing
Two Software Engineering Workshops
Microprocessors and Interfacing
Probability, Statistics and Information
Finite Mathematics
Software Construction
An Elective

Year 3*
Software System Design and Implementation
Software Engineering Workshop 3
Computer Networks and Applications
Database Systems
Two General Education Electives x 2

Year 4*
Professional Issues and Ethics
Thesis
Electives x 4

* sample degree structure

Find out more
computing.unsw.edu.au
undergrad@cse.unsw.edu.au
+61-2-9385-4329

Matt Saxby
Software Engineering/
Commerce

“A combined degree at UNSW has given me a unique opportunity to study both my passions, software and business. I found that the two complement each other well and offer a unique perspective on the business world. I have a co-op scholarship, which means I’ve been able to apply what I’ve learnt at university to real-life situations. It’s also given me the opportunity to work at industry leading companies, learning from some of the best and brightest people in the world.”
Surveying

> UAC code 425500

Surveying uses hi-tech tools to precisely map the natural and built environment. Surveyors work with other engineers, environmentalists, architects and developers to establish legal boundaries and support the construction and development of everything from infrastructure to mines.

What does it involve?
Length of study: 4 years
2015 cut-off: 91.00
The Surveying degree leads to registration in NSW as a cadastral or mining surveyor, with a focus on land management, town planning and modern satellite positioning, with options for transport, construction and water engineering.

Major studies include surveying for land development and management, land law, engineering and mining. Industrial surveying, offshore and hydrographic surveying, precise GPS surveying and navigation, and the preparation of maps and digital products is also included.

Assumed Knowledge
HSC Mathematics Extension 1, Physics

Career opportunities
You could work in:
- Government
- Mining firms
- Private surveying firms
- Construction firms
- Architectural and civil engineering firms

Use your skills to:
- Establish legal land boundaries
- Define and position new construction
- Optimise mining operations
- Map an area using GPS, lasers and aerial scanners
- Draft plans with measurements
- Study the natural and urban environment

Surveyors are currently in very high demand. As a surveyor you are able to work in the private sector or apply for positions in government organisations. A good surveyor is able to successfully deal with the outside elements, including nature and any obstacles that exist in a construction area. Plus, you often have the option of working outdoors or in an office environment. It provides variety.

BE (Hons) in Surveying

Year 1*
Mathematics x 2
Physics
Engineering Design
Computing for Engineers
Surveying and Geospatial Engineering
Electives x 2

Year 2*
Surveying and Geospatial Technology
Surveying Computations A and B
Engineering Mathematics
Principles of Water Engineering
Geodesy and Geospatial Reference Frames
Civil Engineering Computations
General Education

Year 3*
Sustainable Transport or Soil Mechanics
Water Resource Engineering
Geospatial Information Systems
Cadastral Surveying and Land Law
Surveying Applications and Design
Surveying Field Projects
Remote Sensing
Geodetic Positioning and Applications

Year 4*
Thesis
Design Practice
Engineering Operations and Control
Electives x 3
General Education

* sample degree structure
Telecommunications

> UAC code 425100

Telecommunications Engineering is concerned with the design, development, testing and maintenance of all aspects of voice and data communications systems. This ranges from satellite and optical fibre networks, to data encoding, compression and encryption.

What does it involve?
Length of study: 4 years
2015 cut-off: 91.00

Telecommunications is concerned with communicating information at a distance. The telecommunications degree will appeal to you if you're interested in satellite communications, signal and image processing, mobile communications and also optical fibres and photonics.

Other areas of study include data networks, data coding, compression, encryption and transmission, software systems including e-commerce, microelectronic devices and systems, and real-time embedded systems.

Assumed Knowledge
HSC Mathematics Extension 1, Physics

Career opportunities
You could work in:
- Telecommunications service providers
- Major equipment and device manufacturers
- Start-up companies
- Government
- University research labs
- Banks and financial institutions

Use your skills to:
- Develop computer and communications networking
- Design and manufacture electronics
- Conduct research and development
- Design software and systems
- Manage projects
- Design and install communications systems

BE (Hons) in Telecommunications Engineering

Year 1*
Mathematics x 2
Physics x 2
Computing x 2
Engineering Design
Electrical Circuits

Year 2*
Mathematics x 2
Circuits and Signals
Analogue Circuits
Digital Circuit Design
Embedded System Design
General Education x 2

Year 3*
Digital Signal Processing
Electronics
Electromagnetic Engineering
Systems and Control
Telecommunications Engineering Design
Network Technologies
Analogue and Digital Communications
Trusted Networks

Year 4*
Thesis
Strategic Leadership and Ethics
Telecommunications Design Proficiency
Electives x 4

* sample degree structure

Michael Vincent Solis
Telecommunications Engineering

“The most interesting part of my degree is the application of theories in real life, which is fulfilled in the laboratories and during design courses. With the high quality facilities at UNSW Engineering, I am getting the most out of my university experience. This world-class faculty teaches students how to become great engineers who can really make a difference in today’s industry.”
What does it involve?
Length of study: 1 year (of a 4 year degree)
2015 cut-off: 91.00
Flexible First Year allows you to explore a number of areas before deciding upon your final specialisation. The first year of engineering study has a core of common subjects, plus a wide choice of electives, which allows you to study a number of areas that appeal to you without making a formal commitment to a specific engineering degree until the end of your first year.

Flexible First Year students need to enrol in five core subjects. You are then encouraged to select electives from the options listed, focusing on those required in the degree you are considering for future years. Upon your successful completion of the Flexible First Year degree, you can transfer to any of the engineering degrees on offer, subject to available places and grades.

Assumed Knowledge
HSC Mathematics Extension 1, Physics

Career opportunities
From your second year you can specialise in a particular field of engineering, which opens up a range of career options. Due to the core of common subjects in the first year of any engineering degree, you will complete your degree in the same time and will graduate fully qualified in the area of your choice with as much knowledge as those who have chosen this path from year one.

Refer to the various degree pages for more details on your career opportunities.

For more information:
Visit: unsw.tolffyp  Phone: +61-2-9385-6437
Email: engineering@unsw.edu.au

“...If you’re looking to study engineering, but you’re unsure about which discipline to choose, I recommend the Flexible First Year program. It enabled me to learn more about the different paths I could take as an engineer and you can transfer straight into your favourite discipline at the end of the year. I feel as though I have weighed up every option and made an educated decision for my future.”

Flexible First Year
> UAC code 425000
A key part of UNSW’s commitment to help students grow into their career, the Flexible First Year degree is for those who know they want to be an engineer, but have yet to work out which direction to take.
Get great advice at our fun events

Keep up-to-date via the What’s On website - whatson.unsw.edu.au - and the Faculty of Engineering Facebook page: search for “UNSW Engineering”.

1. **First Robotics Team**
   A global high school competition to design and construct a robot. Free to join. Find out more at first.unsw.edu.au

2. **High School Computing**
   Do a first year computing course while you’re still at school. No programming experience is required: you can register online through unsw.tolusp

3. **Engineers Australia – Engineering Camps ASE (April) and HESS (December)**
   Visit universities, go on industry site tours, and talk to academics and engineers at this week-long program for year 11 students. Visit bit.ly/engcamps

4. **UNSW Year 10 Information Evenings**
   Find out recommended subjects for year 11 and 12. Register online through whatson.unsw.edu.au

5. **Engineering High School Information Days**
   These fantastic hands-on, free workshop days let students try out three areas of engineering, visit the campus and meet current students and lecturers. For more info visit unsw.tolhsid2015

6. **Engineering Student-Parent Information Evening**
   Talk directly to academics from each engineering school. Register online from April through unsw.tolengspie

7. **UNSW Scholarships Evening**
   Discover the scholarships available to students wishing to study at UNSW Australia. Register online through whatson.unsw.edu.au

8. **UNSW ProgComp**
   Teams of students complete programming tasks as fast as possible over two rounds. Scholarships and prizes are up for grabs; register online at unsw.tolusp

9. **UNSW Computing Winter School**
   A week of workshops for high school students that ranges from an introduction to programming, to game design. You can apply for one or multiple workshops; for more information visit unsw.tolusp

10. **Great Engineering Challenge**
    Take on real engineering, team-based challenges over a day on campus. Visit bit.ly/gechallenge

11. **UNSW Open Day**
    The whole Kensington campus on Anzac Parade comes to life on September 5 for one special day. The event runs from 9am to 4pm and for more information, you should visit openday.unsw.edu.au

12. **Taste of Electrical Engineering Workshops**
    Running from September 21 to 23, year 10 and 11 students can enjoy three days of hands-on workshops. Apply online before August 31 through unsw.tolfee

13. **UNSW Computing Summer Workshop**
    A week of free workshops for high school students where you can apply for one or multiple workshops that explore the evolving world of computing. For more information visit unsw.tolusp

14. **Women in Engineering Camp**
    Five-day residential camp for year 11 and 12 female students to explore the amazing world of engineering. Visit unsw.tolwic

15. **UNSW Minerals Summer School**
    Applications open in July for this four-day residential camp, including visits to mine sites. For more information you should visit: unsw.tolumss
## Key dates to remember

### January 2015

**ALL YEAR:** First Robotics Team (Global high school competition to design and construct a robot)

**FRI 27:** UNSW Career Adviser’s Seminar

**FEB-JUNE:** High School Computing Course

**TUE 3:** Registration opens for High School Info Day 1

### April

**MON 13-FRI 17:** Autumn School of Engineering (Engineers Australia)

**TUE 12:** UNSW Year 10 Info Evening

**THU 14:** UNSW Year 10 Info Evening

**WED 20:** Engineering High School Info Day 1

**THU 21:** UNSW Year 10 Info Evening

**THU 28-SUN 31:** The HSC and Careers Expo Moore Park

### May

**TUE 12:** UNSW Year 10 Info Evening

**THU 11:** Engineering Student Parent Info Night

**THU 18-SUN 21:** Western Sydney Careers Expo

**WED 24:** UNSW Scholarships Evening

### June

**THU 11:** Engineering Student Parent Info Night

**THU 18-SUN 21:** Western Sydney Careers Expo

**WED 24:** UNSW Scholarships Evening

### July

**JUL-SEPT:** UNSW ProgComp

**JUL:** UNSW Computing Winter School

### August

**MON 3:** Registration opens for High School Info Day 2

**TUE 4:** Women in Engineering Camp applications OPEN

**WED 5:** The Great Engineering Challenge

### September

**THU 14:** UNSW Year 10 Info Evening

**THU 21:** UNSW Year 10 Info Evening

**THU 28-SUN 31:** The HSC and Careers Expo Moore Park

**SAT 5:** UNSW Open Day

**MON 21-WED 23:** Taste of Electrical Engineering Workshops

**SUN 27:** Women in Engineering camp applications CLOSE

### October

**WED 28:** Engineering High School Information Day 2

**MON 7-FRI 11 DEC:** Honeywell Engineering Summer School (Engineers Australia)

**DEC:** UNSW Computing Summer Workshop

### November/December

**MON 7-FRI 11 DEC:** Honeywell Engineering Summer School (Engineers Australia)

**DEC:** UNSW Computing Summer Workshop

### January 2016

**EARLY JAN:** UNSW Information Day

**MID JAN 16:** Women in Engineering camp applications CLOSE

**MID JAN 16:** UNSW Minerals Summer School

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For more information:
Visit: whatson.unsw.edu.au
Facebook: Search for UNSW Engineering