WHY UNSW?

Top World Ranking
The University is ranked 46th in the 2015 QS World University Rankings.

Top Choice
UNSW graduates are the most hired by LinkedIn’s top 30 most in-demand employers in 2015.

Campus Development
UNSW has invested $1.2b in student facilities.

New Facilities
$150 million is being invested in a new Life Sciences building, opening in 2017.

Highest NSW ATAR
UNSW Bachelor of Science has the highest ATAR cutoff in the state (2016 published ATAR of 85.00).
Science is the gateway to the future, underpinning society's advancement.
– Professor Merlin Crossley, Dean UNSW Science

Welcome

UNSW Science is where the brightest minds converge to LEARN, EXPLORE, DISCOVER.

We provide a vibrant and welcoming community that will prepare you for real-world challenges and future leadership opportunities. Our programs provide a breadth of choice and a depth of knowledge to suit your talents and interests. And our state-of-the-art facilities, award-winning researchers and excellent teachers will help you achieve your goals.

We’re motivated not only by passion at UNSW Science, but also by a well-defined purpose.

We solve complex scientific mysteries, investigate issues of global importance and invent and build the technologies that will shape the future – and we do it in collaboration with high profile industry partners and leading research institutions around the world.

It’s the extended-team effort which makes us so successful.

We welcome your interest and participation as we journey into the future. We’re glad to have you along for the ride.

Professor Merlin Crossley
Dean, UNSW Science
UNSW Australia

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Science at UNSW

You should think about studying science if you:

- Have a curious mind
- Would like to help advance our society
- Want a fulfilling career in a wide variety of sectors
- Are enjoying your high school Maths and Science subjects

And most importantly, possess an insatiable desire for pioneering the unknown.

Prestige

Our Bachelor of Science degree has one of the highest entry requirements in NSW (85.00 ATAR in 2016). Your fellow students will be bright and inquisitive high achievers, attracted by the University’s international reputation and the high ranking of our scientific research schools.

Staff

We offer excellence and innovation in teaching and our staff are award-winning researchers and leaders in their fields, including:

- Professor Emma Johnston, the inaugural recipient in 2014 of the Australian Academy of Science’s Nancy Millis Medal for Women in Science for her leadership and ground-breaking research in marine ecology, as well as winning the 2015 Science Eureka Prize for Promoting Understanding of Australian Science Research.
- Scientia Professor Michelle Simmons, winner of 2015 CSIRO Eureka Prize for Leadership in Science, winner of the Australian Academy of Science’s 2015 Thomas Ranken Lyle Medal, and NSW Scientist of the Year 2011 for her research in quantum physics.
- Scientia Professor Veena Sahajwalla, one of Australia’s best known engineers and scientists, developed the internationally commercialised “green steel” technology in collaboration with industry partner OneSteel, an Arrium company.

Outstanding career prospects

Our graduates are highly sought after in government, industry and the not-for-profit sectors. In the 2016 Good Universities Guide, UNSW obtained a five-star rating for graduate employment and starting salaries. More than 44 per cent of recently surveyed UNSW Science alumni reported earning annual salaries greater than $100,000 (UNSW Science Graduate Survey 2014).

Science is an ideal first degree for students who want to go on to study for another profession or to undertake postgraduate research.

Size

In our case, big really is better. With a population of over 50,000 students as well as more than 200 university partnerships, you will enter a welcoming, vibrant and culturally diverse community at UNSW and an internationally focused learning environment.

State-of-the-art facilities

At UNSW Science you’ll have access to world-class laboratories, clinics and simulators that will equip you with the tools to challenge knowledge, explore new frontiers and make mind-blowing discoveries.

Talented students’ program

The Talented Students’ Program (TSP) offers elite students access to an academic mentor and exposure to leading edge research and renowned researchers within the Faculty.

If you achieve outstanding results during high school (ATAR or equivalent) and have nominated to study either the Bachelor of Science or the Bachelor of Advanced Science (Honours) you may be invited by the Dean of Science to join the program.

Your participation in the TSP is noted on your official record and is listed on your secondary transcript.

For more information on the TSP, including eligibility, see: science.unsw.edu.au/tsp.

Scholarships

We aim to reward excellence and make a university education accessible to all, with a wide range of scholarships available to suit a diverse range of students and interests. A scholarship could cover your living expenses, subsidise tuition fees, provide an industry partnership, or facilitate overseas travel. Be sure to have a look at our comprehensive scholarships website and find the scholarship that is right for you.

Applications are usually due in late September of every year. Visit scholarships.unsw.edu.au to apply.

Key industry partners

Our industry-relevant research is focused on serving society. In the last five years our science researchers have entered into various agreements with industry, government and other collaborators. We have had strong ties with the following companies and organisations:

- ANSTO
- Arrium Ltd
- Boral
- Brickworks
- Cochlear
- Commonwealth Bank of Australia
- CSIRO
- EY
- Google
- IBM
- OneSteel
- SAS Institute Australia Pty Ltd
- Schneider Electric
- SIRCA
- Weir Minerals
- Woolworths

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- EY
- Google
- IBM
- OneSteel
- SAS Institute Australia Pty Ltd
- Schneider Electric
- SIRCA
- Weir Minerals
- Woolworths
Willem Huiskamp

B. Science (Advanced)

In Science you have the opportunity to help solve problems of vital importance. The critical issue of human-induced climate change has now been recognised internationally and the world is responding to the challenge.

Willem Huiskamp is keen to help address that challenge as well. That’s why he is passionate about finding out how the world’s oceans affect our climate. After completing the Bachelor of Science (Advanced) at UNSW, Willem joined the Climate Change Research Centre as a PhD candidate in oceanography.

Willem has gained practical experience at UNSW by joining more experienced scientists on research expeditions. His adventures have included working as a research assistant on a trip to the Antarctic islands to study the ocean currents surrounding Antarctica.

Like this career? Check out:
• Bachelor of Science
• Bachelor of Advanced Science (Honours)
• Bachelor of Environmental Management

Catherine Beehag

B. Science (Communications)

Science isn’t exclusively about research and labs. Science needs communicators. These people share and explain the magic and wonder of science. When it comes to a career in science communication, there’s plenty to talk about.

Catherine Beehag studied science communication at UNSW, which led to her role as Science Communication Manager at the Australian Museum. Catherine leads a team who help bring events like the Australian Museum Science Festival to life. Catherine’s work with the festival has allowed thousands of children all over NSW to experience the fun of science through experiments and interactions with animals.

While studying at UNSW, Catherine had the opportunity to be involved in science radio. Experiences like these were the catalyst for her working with Quasitacon, before taking up her position at the museum.

Like this career? Check out:
• Bachelor of Science
• Bachelor of Advanced Science
• Bachelor of Science/Arts

Daniel Tan

B. Science

Biotechnology has the capacity to improve the lives of many people. Daniel Tan uses biotechnology to improve scientific testing processes and standards by making them smarter and more ethical. He is running a biotech startup based in Singapore that specialises in creating in vitro three dimensional skin tissue models to test for reactions to cosmetics and consumer products.

This technology provides an alternative to animal testing and, with further development, there may be applications for treating burns and wounds as well.

While Daniel’s main role at Denova Sciences is to focus on business development and marketing, his Bachelor of Science degree has equipped him with the scientific knowledge to better understand the technology his company is creating.

Like this career? Check out:
• Bachelor of Science
• Bachelor of Science and Business
• Bachelor of Biotechnology (Honours)
<table>
<thead>
<tr>
<th>Major areas of study</th>
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<tbody>
<tr>
<td><strong>Anatomy</strong> is the study of the structure of the human body. It focuses on how our body parts interact to create our capacity to move, feel and think.</td>
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<tr>
<td><strong>Archeology &amp; Palaeoenvironments</strong> focuses on the physical and cultural evolution of human cultures and the environments that they inhabited. You can study the relationship between extinct species like the Australian megafauna and environmental change, or specialise in the interaction between humans and their natural environment using case studies of hunters and gatherers from Australasia, Africa and the Americas.</td>
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<tr>
<td><strong>Bioinformatics</strong> draws upon both computer science and biology, and involves developing technologies for managing biological information. It also includes biochemistry and molecular biology.</td>
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<tr>
<td><strong>Biological Chemistry</strong> places an emphasis on organic and inorganic chemistry. It also includes biochemistry and molecular biology.</td>
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<tr>
<td><strong>Biological Oceanography</strong> is the study of life and living organisms. UNSW has an international reputation for quality teaching and research in this area, offering expertise in botany, ecology, marine biology and zoology. Botany looks at all aspects of plants and their relation to the environment. Ecology studies the distribution and abundance of organisms as well as the structure and function of ecosystems. Marine Biology is about life in the ocean, estuaries and other coastal environments. Zoology looks at the structure, behaviour, habits, genetics, distribution, evolution and classification of animals.</td>
</tr>
<tr>
<td><strong>Biotechnology</strong> is a mix of the natural sciences and engineering. It is the innovative use of all living organisms and their parts to improve existing industrial processes. Biotechnology is the future of sustainable development, from bio-manufacturing and bio-remediation to the development of biomaterials for medicine, including processes such as tissue engineering and stem cell therapies.</td>
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<tr>
<td><strong>Chemistry</strong> is a central science that deals with the properties, analysis, design and synthesis of molecules. Courses will equip you with skills relevant to the design of new therapies, new materials and new technologies necessary for meeting the real-world challenges that face us today. You'll develop analytical and problem-solving capabilities in demand by employers in scientific and non-scientific fields.</td>
</tr>
<tr>
<td><strong>Climate Science</strong> studies the past, present and future climate systems and the impact on the physical, biological and human environments. It can be studied with a focus on Climate Dynamics or Climate Systems. Climate Dynamics has a particular emphasis on understanding the dynamical systems within the atmosphere and oceans. This understanding has applications in climate and weather research, forecasting, and environmental and resources management. Climate Systems Science provides a broad introduction to the science of the Earth's climate system and an understanding of the fundamentals of atmospheric science, oceanography and chemistry. You can focus your studies in areas such as climate and vegetation, hydrology, biology, biogeochemistry or environmental and resource management.</td>
</tr>
<tr>
<td><strong>Food Science</strong> involves the understanding and application of basic sciences from paddock to plate. You'll study production, processing, preservation, distribution and marketing through to consumption and utilisation by consumers. Food Science is concerned with food processes, food commodities, food composition and food quality (including sensory properties, safety and nutritional value).</td>
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<tr>
<td><strong>Geology</strong> explores environmental relationships. The significance of geology lies in its contribution to an understanding of the total environment. Geographers work in areas such as city and town planning, regional planning and environmental assessment. Many courses in geography include laboratory and field work, which involve the use of qualitative and quantitative techniques.</td>
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<tr>
<td><strong>Marine &amp; Coastal Science</strong> offers a unique opportunity to study across both physical and biological aspects of the marine environment. Biologists, geologists and oceanographers learn more about the seas so we can both use and protect this valuable resource. UNSW is a leading Australian hub of marine science research and teaching, with excellent facilities and diverse research groups.</td>
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<tr>
<td><strong>Materials Science</strong> is the underlying science of materials including metals, ceramics, plastics, composites, nanomaterials and biomaterials. Materials scientists and engineers develop these high performance materials. Engineer new applications, develop and customise innovative processing techniques, predict and analyse material performance, and manage commercial materials production.</td>
</tr>
<tr>
<td><strong>Mathematics &amp; Statistics</strong> provides the language for a fundamental understanding of nature, technology and commerce. Data and statistical information can be understood using the techniques and theory of statistics. Graduates are highly sought after for employment in a diverse range of jobs including finance, insurance, computing, and environmental modelling.</td>
</tr>
<tr>
<td><strong>Microbiology</strong> examines environmental systems and the relationships between organisms and their environment. Ecologists study the distribution and abundance of organisms, and the structure and function of ecosystems. To conserve our natural environment we need to understand how animals and plants interact with each other as well as their environment, either on land or in the sea.</td>
</tr>
<tr>
<td><strong>Geophysical Oceanography/Advanced Physical Oceanography</strong> involves an understanding of the mathematical equations that describe fluid flow, and how these are used in the prediction of the ocean. This background can be applied to disciplines such as climatology, the dynamics of marine populations and the dynamic structure of marine and coastal habitats. Physical Oceanography is essential to understanding climate change and global warming. At UNSW it is the focus of the Climate Change Research Centre (CCRC) and the marine science group in the School of Biological, Earth and Environmental Sciences.</td>
</tr>
<tr>
<td><strong>Statistics</strong> studies the smallest organisms and their impacts. Micro-organisms are the oldest known and most diverse forms of life that we know of. Many are used beneficially in areas such as baking, brewing, the manufacture of dairy foods and pharmaceuticals. Knowledge of bacteria, fungi, viruses, protozoa and archaea is important in both the environmental and medical fields.</td>
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<tr>
<td><strong>Molecular &amp; Cell Biology</strong> studies the discovery and use of resources, sustainable development and the control or remediation of environmental pollution.</td>
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<tr>
<td><strong>Pathology</strong> examines how our nervous system processes information, how our sense organs provide us with information, and how our muscles and joints interact with the environment. Pathology is the study of human behaviour and disease, and how these processes can be applied to fields such as forensic and clinical medicine. Pathologists examine tissues and cells, work as part of an integrated system. It describes the fundamental properties of living systems.</td>
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<tr>
<td><strong>Psychology</strong> is the scientific study of the chemical and biochemical phenomena that occur in natural places. Environmental Chemistry can be defined as the study of the sources, reactions, transport, effects and toxicities of chemical species in the air, soil, and water environments; and the effect of human activity and biological activity on these.</td>
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<tr>
<td><strong>Pharmacology</strong> is the study of the laws of nature that govern the behaviour of the human body, from molecular interactions of drugs at the organ-tissue and cellular level.</td>
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<tr>
<td><strong>Physics /Advanced Physics</strong> is the study of the laws of nature that govern the behaviour of the human body, from molecular interactions of drugs at the organ-tissue and cellular level. Physics applies these laws to the solution of practical and theoretical problems and to the development of new technologies. Physicists are highly employable in a range of industries including research, teaching, finance, medical physics, computing, and environmental modelling.</td>
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<tr>
<td><strong>Physiology</strong> examines how our body is designed to function. It also deals with the brain, perception, learning and memory, abilities, origins of personality, and emotional states.</td>
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<tr>
<td><strong>Vision Science</strong> is the science of human vision. It examines the optical and neural mechanisms that enable us to see better. You'll develop skills that enable you to create new instruments and vision technologies.</td>
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</tbody>
</table>
Bachelor of Life Sciences

Assumed knowledge
Mathematics plus one or more of Biology, Chemistry, Earth and Environmental Science (depending on chosen area of study).

Majors
Anatomy | Biology | Biological Chemistry | Biotechnology | Chemistry | Earth Science | Ecology | Genetics | Marine Science | Microbiology | Molecular and Cell Biology | Pathology | Pharmacology | Physiology | Psychology

Careers
Life sciences have valuable applications in health, agriculture, medicine and the pharmaceutical and food science industries. In fact, many of the jobs available to science graduates originate from the study of life sciences. If you enjoy working in interesting and varied outdoor locations, majors such as biology and ecology involve fieldwork and can be the beginning of a life of intellectual and geographic adventure.

Degree structure:
- 16 courses: Major + Science electives
- 6 courses: Free electives - Any UNSW faculty course
- 2 courses: General education - Non science courses
- 1 Year: Optional Honours

Bachelor of Science and Business

Assumed knowledge
Mathematics and Chemistry plus one or more of Biology, Earth and Environmental Science, Physics or HSC Mathematics Extension 1 (depending on chosen area of study).

Majors

Careers
Our graduates work in a variety of fields in science and technology-based industries. They are skilled in the context of working in the scientific industry as well as having an understanding of the commercial environment in which they are employed.

Dual degrees
The Bachelor of Science and Business may be studied with the following degree:
- Law

Degree structure:
- 16 courses: Major + Science electives
- 4 courses: Foundation Business Courses
- 4 courses: Business Electives
- 1 Year: Optional Honours
Bachelor of Science

When the choices seem never ending, knowing how to get started can be harder than the study itself. We make getting started easy and then we help you explore all the options along the way. The Bachelor of Science sets you in and gets you heading in the right direction.

Tailoring your degree

In first year you can ask, listen and learn about anatomy, ecology, pathology, psychology and so on... and then decide on neuroscience if that excites you the most.

The Bachelor of Science starts with an open study pathway that you refine along the way. By second year, you’re in control and the choices become more obvious. It’s a ride you will feel confident taking, knowing the foundation knowledge you’re building is the springboard into a career you will love. Free electives give you the flexibility to tailor your degree in a way that works for you.

Assumed knowledge

Mathematics and Chemistry plus one or more of Biology, Earth and Environmental Science, Physics or HSC Mathematics Extension 1 (depending on chosen area of study).

Degree structure:

The degree structure above is for a single degree and varies for a dual degree.

Majors

- Anatomy
- Bioinformatics
- Biology
- Biotechnology
- Chemistry
- Earth Science
- Ecology
- Food Science
- Genetics
- Geography
- Marine Science
- Materials Science
- Mathematics
- Microbiology
- Molecular and Cell Biology
- Neuroscience
- Pathology
- Pharmacology
- Physical Oceanography
- Physics
- Physiology
- Psychology
- Statistics
- Vision Science

Bachelor of Advanced Science (Honours)

The Bachelor of Advanced Science (Honours) is the degree of choice for innovative thinkers with exceptional scientific knowledge and skills. It’s designed for talented students and offers you some flexibility to take your degree in a way that works for you.

Course content:

The Bachelor of Advanced Science (Honours) degree offers you access to advanced level courses and includes an honours year. You’ll study foundation courses such as biology, chemistry, physics and maths, before getting the chance to knuckle down, choose your major (or two) and really explore what inspires you most. You will also be given the option to choose free electives from other areas of the university such as arts and social science, business, engineering, law or the built environment.

Your final year is an honours year where you get the opportunity to undertake a research project. This degree is aimed at developing critical and integrative thinking. You will work hard but with a globally recognised degree in hand you will be in the best possible position to chase the career you want.

Assumed knowledge

Mathematics and Chemistry plus one or more of Biology, Earth and Environmental Science, Physics or HSC Mathematics Extension 1 (depending on chosen area of study).

Majors

- Advanced Physical Oceanography
- Advanced Physics
- Anatomy
- Archaeology and Palaeoenvironments
- Bioinformatics
- Biological Science
- Biotechnology
- Chemistry
- Climate Science
- Earth Science
- Ecology
- Genetics
- Geochemistry
- Geography
- Marine and Coastal Science
- Materials Science
- Mathematics
- Microbiology
- Molecular and Cell Biology
- Neuroscience
- Pathology
- Pharmacology
- Physical Geography
- Physiology
- Psychology
- Statistics
- Vision Science

Careers

Our graduates gain employment with research institutes, innovative start-ups, university or industry in Australia or overseas. Areas include technology management, analysis in business or finance, psychology, medical research and development, environmental protection and forensic science.

Dual degrees

The Bachelor of Science (Advanced) may be studied with the following degrees:

- Arts
- Commerce
- Computer Science
- Economics
- Engineering
- Fine Arts
- Law
- Music
- Social Research and Policy

Degree structure:

The degree structure above is for a single degree and varies for a dual degree.
Bachelor of Science (International)

Assumed knowledge
Mathematics and Chemistry plus one or more of Biology, Earth or Earth and Environmental Science, Physics or HSC Mathematics Extension 1 (depending on chosen area of study).

Majors

Careers
Our graduates work in Australia and overseas. They are employed in a variety of science and technology-based industries and businesses, in management, research and communication, within industry, government and the private sector.

Career in science and travel the world at the same time? The Science (International) degree offers you just that opportunity.

Course content
The Science (International) degree recognises that science involves a global network; the aim of this degree is to prepare you for an increasingly globalised world environment. You will not only get a science degree but you’ll also take courses in languages, international relations, politics, and international law, ensuring a truly global education.

This four year degree includes overseas study at one of our partner universities, giving you the essential knowledge and skills you need to work in a rapidly changing global environment. With this world-recognised degree you will be ready to work for global organisations and companies, local or international governments, or in scientific research. The world is yours.

Bachelor of Science (Advanced Mathematics) (Honours)

Assumed knowledge
HSC Mathematics Extension 1

Recommended knowledge
HSC Mathematics Extension 2

Majors
Applied Mathematics | Pure Mathematics | Advanced Statistics | Quantitative Risk (by invitation only)

Careers
Our graduates go on to work in banking, insurance and investment, environmental modelling, oceanography, meteorology, computing, information technology, government, education and research.

Dual degrees
The Bachelor of Science (Advanced Mathematics) may be studied with the following degrees:
- Actuarial Studies
- Arts
- Commerce
- Computer Science
- Economics
- Engineering
- Law

Course content
The Advanced Mathematics degree is a four-year degree which includes an honours year. The honours year integrates advanced level coursework with a research project that’s both challenging and rewarding.

Degree structure:

- 16 courses
  - Major + Science electives
  - 4 courses Directed Electives
  - 6 courses Language Minor
  - 1 Year Optional Honours

- 6 courses Free electives - Any UNSW faculty course

- 2 courses General education + Non science courses

- 1 Year Honours

The degree structure above is for a single degree and varies for a dual degree.
Aviation is a multi-faceted sector that requires people skilled in many disciplines. It is uniquely international in its application and demands a level of cultural and political awareness. If you are looking to be influential in the aviation industry, an Aviation degree is right for you.

Aviation focuses on developing skills relevant to every aspect of the aviation profession. We operate our own aircraft from Bankstown Airport and our Aviation Management lecturers include senior and active members of the industry.

Course content
The Flying stream of the Aviation degree educates and trains pilots to the highest commercial standards. In this degree you’ll learn the core science behind aviation management as well as gain your pilot licence. As part of the Professional Pilot Program you will have up to 240 hours of flight training and approximately 30 hours of simulator training.

On completion of the degree, you will have attained, at a minimum, a Commercial Pilot Licence (CPL) with a Multi Engine Command Instrument Rating and an Air Transport Pilots Licence (frozen) with advanced options including Instructor Rating, Multi-Crew Coordination Course or a research project.

You will need to pay for the flight training costs portion of this degree. The estimated flight training cost is approximately $138,000 over three years, depending on the chosen options.

Additional selection criteria
- Interview
- Class 1 Civil Aviation Authority (CASA) medical examination

Completion of the Internal Application for Admission to Bachelor of Aviation is required. The application form can be obtained from the School of Aviation:

T: +61 (2) 9385 6767
E: aviation@unsw.edu.au

Applications due by 30 September 2016

Assumed knowledge
Mathematics (not general Mathematics)

Recommended knowledge
Physics

Careers
Our graduates work as pilots for regional or major commercial airlines, training centres, charter flights, or as aerial surveyors, and later often take roles as management pilots.

Course content
The Management Stream might be right for you if you’re seeking a career in flight operations — on or off the flight deck. If you have aviation industry experience or licenses you might be looking to further your qualifications to a tertiary level.

The degree shares a common academic core with the Flying Stream but offers a range of additional courses in management areas including Operations Management, Aviation Economics, Law and Regulations, Airline Marketing, Air Traffic Control and Regional Airlines.

Assumed knowledge
Mathematics

Recommended knowledge
Physics

Careers
Our graduates have gained employment as managers in airlines, freight companies, regulatory authorities and airports.

Dual degrees
The Bachelor of Aviation (Management) may be studied with the following degree:
- Commerce

Degree structure:
- 21 courses
- Aviation Flying Core
- 1 course
- Aviation Flying elective
- 2 courses
- General education - Non science courses
- 16 courses
- Aviation Management Core and Electives
- 6 courses
- Free electives - Any UNSW faculty course
- 2 courses
- General education - Non science courses

The degree structure above is for a single degree and varies for a dual degree.
Bachelor of Biotechnology (Honours)

Assumed knowledge
Mathematics, Chemistry

Recommended knowledge
Biology

Careers
Our graduates gain work as scientists or researchers with medical, biological or pharmaceutical research organisations.

Course content
As with all our science degrees, you will start your degree building on the fundamentals of science with courses such as biology, chemistry and maths. You’ll also begin your journey as a biotechnologist with introductory biotechnology.

Your following two years will see you delve deeper into the multi-disciplinary world of biotechnology, with courses in molecular biology, microbiology, chemistry, genetics and biotechnology.

You’ll explore current trends and professional issues in the biotechnology industry including the commercialisation of biotechnology.

In your final year you’ll complete a research project as part of your honours year.

Our ability to cope with many of the world’s medical, environmental, agricultural and manufacturing problems in the 21st century will depend heavily on advances in biotechnology. This is your time to shine.

Bachelor of Environmental Management

Assumed knowledge
Mathematics and Chemistry

Recommended knowledge
Biology, Earth and Environmental Science, Physics

Majors
Biology | Earth Science | Ecology | Environmental Chemistry | Geography | Marine Science

Careers
Our graduates become qualified environmental professionals and gain employment as environmental consultants and officers within industry, or with local, state or federal government. Employers may include National Parks and Wildlife or the Environmental Protection Authority.

Dual degrees
The Bachelor of Environmental Management may be studied with the following degree:
- Arts

Degree structure:
- 20 courses
  - Biotechnology core and electives

- 2 courses
  - General education - Non science courses

- 1 Year
  - Honours

Degree structure:
- 20 courses
  - Environmental Management core + major + electives

- 2 courses
  - General education - Non science courses

- 1 Year
  - Optional Honours

The degree structure above is for a single degree and varies for a dual degree.
The Bachelor of Engineering (Honours) in Materials Science and Engineering offers unlimited possibilities for innovation and development. As a materials engineer, you could be involved in developing environmentally friendly and economical metals, advanced surface coatings, biomedical materials, advanced composites, and much more.

Course content
The first two years are the same for everyone completing this degree. You’ll study areas such as chemistry, physics, mathematics, engineering, computing, the fundamental properties and structures of materials, aspects of engineering design, and the application and selection of materials. In your final two years, you become more focused on your chosen specialist area, which ultimately results in your final research project and seminar.

This degree is designed to give you an edge; we are the only school in Australia to offer specialisations in Ceramic Engineering, Metallurgical Engineering, and Materials Engineering, and we have well-equipped facilities to put you ahead of the field.

Course content: Materials Science and Engineering

- Biomedical Engineering
- Chemical Engineering
- Commerce

Bachelor of Medical Science

Degree structure:

- 22 courses
  - Materials Science Core
- 4 – 5 courses
  - Professional Electives
- 3-4 courses
  - Materials Science Project
- 2 Courses
  - General Education - Non science courses

Bachelor of Engineering (Honours) in Materials Science and Engineering

Degree structure:

- UAC code: 429600
  - UNSW code: 3131
  - Course duration: 4 Years Full-time
  - Entry ranks: 2016 ATAR 85.00, 2017 CE 85.00

Assumed knowledge
HSC Mathematics Extension 1, Physics

Recommended knowledge
HSC Mathematics Extension 2, Chemistry, Engineering Studies

Majors
Physical Metallurgy | Process Metallurgy | Materials Engineering | Ceramic Engineering

Careers
Our graduates work in research and development, quality, technical support, process improvement, team leadership and management, technical sales, marketing, and more for companies producing engineered materials, metals, ceramics, and plastics.

This world-recognized degree is accredited with the Institute of Engineers Australia.

Dual degrees
The Bachelor of Engineering (Materials Science and Engineering) may be studied with the following degrees:

- Biomedical Engineering
- Chemical Engineering
- Commerce

Graduate entry stream for UNSW Medicine
If you are interested in studying Medicine at UNSW, there is a pathway for high-performing Medical Science students. If you are intending to apply for entry to the degree via the Bachelor of Medical Science, you must have completed all compulsory courses by the end of Stage 2.

For information visit: med.unsw.edu.au

Majors
Human Anatomy | Molecular Biology | Molecular Genetics | Medical Microbiology | Neurobiology | Human Pathology | Medical Pharmacology | Medical Physiology

Careers
Our graduates work in areas such as medical research, paramedical professions, health policy, medical laboratory science, pathology, forensic science, pharmaceutical and related industries.

Bachelor of Medical Science

Assumed knowledge
Mathematics, Chemistry

Recommended knowledge
Biology and/or Physics

Careers
Our graduates work in research and development, quality, technical support, process improvement, team leadership and management, technical sales, marketing, and more for companies producing engineered materials, metals, ceramics, and plastics.

This world-recognized degree is accredited with the Institute of Engineers Australia.

Dual degrees
The Bachelor of Engineering (Materials Science and Engineering) may be studied with the following degrees:

- Biomedical Engineering
- Chemical Engineering
- Commerce

Graduate entry stream for UNSW Medicine
If you are interested in studying Medicine at UNSW, there is a pathway for high-performing Medical Science students. If you are intending to apply for entry to the degree via the Bachelor of Medical Science, you must have completed all compulsory courses by the end of Stage 2.

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Majors
Human Anatomy | Molecular Biology | Molecular Genetics | Medical Microbiology | Neurobiology | Human Pathology | Medical Pharmacology | Medical Physiology

Careers
Our graduates work in areas such as medical research, paramedical professions, health policy, medical laboratory science, pathology, forensic science, pharmaceutical and related industries.

Course content
Medical Science is offered over three years and run jointly by the Science and Medicine faculties.

You will learn about the human body, how it functions down to its smallest parts and how it reacts to disease and the drugs that are used to treat disease. Discover the processes of development from the fertilised ovum to why we all look different. Learn about the role genetics plays, how and why we have natural defences and which structures and parts of our brain command how we move, think, and feel. Medical science truly incorporates many facets of the scientific disciplines.

You will have the opportunity, if you choose and your performance permits, to undertake a fourth year that involves research leading to an honours degree.

Degree structure:

- 22 courses
  - Medical Science core + electives
- 2 courses
  - Medical Science Project
- 2 Courses
  - General Education - Non science courses
- 1 Year
  - Optional Honours
- 2 courses
  - General Education - Non science courses
- 3-4 courses
  - Materials Science + electives
Medicinal Chemistry is an exciting, rapidly-expanding area within the broad discipline of chemistry that has seen enormous growth recently both within Australia and globally.

It is, quite simply, the development of new pharmaceutical agents from concept to clinic.

Course content

The Bachelor of Medicinal Chemistry is a professionally oriented, truly interdisciplinary degree. It has been designed to ensure that you will have a strong background in contemporary biology, biochemistry and pharmacology, based upon a solid foundation of essential chemistry. Your first year includes study in chemistry, maths and biology.

As you move into your second and third year you will take more advanced chemistry as well as biochemistry, contemporary pharmacology and related courses.

By the time you graduate you will be equipped with a unique set of skills, in demand both locally and globally in pharmaceutical companies involved in modern drug design.

Assumed knowledge

Mathematics, Chemistry

Recommended knowledge

Biology, Physics

Careers

Our graduates are equipped with skills in modern molecular biology and pharmacology, underpinned with a comprehensive background in chemistry with relevant skills necessary for synthesising complex drug candidates. They find employment opportunities in the pharmaceutical and biotechnology industries, research, government, management, legal, and education sectors.

Dual degrees

The Bachelor of Medicinal Chemistry may be studied with the following degree:

- Law

Nanoscience covers the exciting and extremely broad area of science on the really small scale. Nanoscience is already revolutionising everything from advanced materials to medicine and even makeup.

Course content

The Bachelor of Nanoscience (Honours) is a truly multi-disciplinary degree taught by the Schools of Chemistry, Physics and Materials Science and Engineering. By featuring a wide range of sciences, students are poised to make advances in the understanding, development, application and engineering of new nanoscience systems.

Your first year involves courses in areas such as biology, chemistry, materials science, physics, mathematics and nanotechnology. In your second year you can specialise in Nanodevices or Nanomaterials, with various courses in physics, chemistry, biotechnology, materials science and nanotechnology. In the third year you’ll move to specialist courses in nanoscience such as Nanomedicine and Nanomaterials, and other courses depending upon your major.

Assumed knowledge

HSC Mathematics Extension 1, Chemistry, Physics

Recommended knowledge

Biology

Careers

By focussing on both nanoscience and conventional science our graduates work in developing and commercialising products in the emerging nanoscience industry, research, government, management, legal, education sectors and the rapidly growing (nano) medicine sector. A significant number of our graduates continue on nanoscience research projects.

Degree structure:

Bachelor of Medicinal Chemistry (Honours)

- 20 courses
  - Medicinal Chemistry core
  - and electives
  - 2 courses
    - Free electives - Any UNSW faculty course

Bachelor of Nanoscience (Honours)

- 1 Year Honours
  - Nanoscience project
  - 6 courses
    - Nanoscience core
  - 16 courses
    - Nanodevices or Nanomaterials specialisation
  - 8 courses
    - Nanoscience Nanotechnology

Degree structure:
The Bachelor of Optometry/Bachelor of Science degree provides students with an understanding of the theoretical disciplines of vision science and the clinical art of primary eye care.

The School of Optometry and Vision Science at UNSW is the largest optometry school in Australia that links its academic learning with clinical practice. It has a modern clinic providing a full range of optometry services.

Course content
The Bachelor of Optometry (Honours)/Bachelor of Science degree is taken over five years. In your first year you’ll cover foundation sciences including physics, chemistry, mathematics and biology as well as three vision science courses which include Geometrical and Physical optics, and Visual Optics. During your second and third years you will become more focused on vision science courses such as physiology, pathology, pharmacology, ocular disease, advanced vision science and clinical examination of the eye and the optics behind visual instruments.

Years four and five begin your development as a practicing optometrist, establishing your clinical skills in problem-solving and patient management, while introducing you to research. Specialised on-campus clinics provide you with practical examination experience in areas such as contact lenses, colour vision, low vision rehabilitation, ocular photography, children’s vision assessment and ocular disease management. In your fifth year there will be external clinical experience, including a four week posting outside the University.

Note: This program is currently undertaking a review with changes and improvements planned for implementation starting 2017.

Additional selection criteria
You must apply to sit the Undergraduate Medicine and Health Sciences Admissions Test (UMAT) with the Australian Council for Educational Research (ACER) in the year prior to entry. For up-to-date information on registration deadline and test date please visit: umat.acer.edu.au. UMAT results will be assessed in conjunction with ATAR for entry into the program.

Assumed knowledge
Mathematics, Chemistry, Physics, English (Advanced)

Alternative entry into Optometry
Alternative entry to Optometry/Science is possible via the Bachelor of Science or the Bachelor of Advanced Science (Honours) with a Vision Science major. You can apply after your first year of study for one of a limited number of transfer places to Optometry/Science, commencing in second year. Assessment will be based on UMAT, performance in first year courses, and UMAT results.

However, this option is available only to those who have not done any post-secondary studies other than their first year of the Bachelor of Science or Bachelor of Advanced Science (Honours) at UNSW.

Careers
The majority of our graduates go on to become accredited optometrists in Australia, New Zealand and most parts of Asia. You may choose to specialise in clinical practice, paediatric optometry, contact lenses, public health, sports vision, low vision rehabilitation or behavioural optometry.

As a guide an ATAR or equivalent of at least 95.00 is required.

Degree structure:
- 38 courses Optometry core
- 2 courses General education – Non science courses

Bachelor of Psychological Science

Assumed knowledge
Mathematics

Recommended knowledge
English Advanced, Biology, and one of Chemistry, Earth and Environmental Science or Physics

Optional Complementary Majors
- Criminology
- Human Resource Management
- Linguistics
- Management
- Marketing
- Neuroscience
- Philosophy
- Vision Science

Careers
Our graduates work in a wide variety of different contexts would be available; including clinical, legal, organisational, educational and research settings in both private and public sector. Psychologists are employed across several industries including health care and social assistance; public administration and safety; education and training; and administrative and support services.

Course content
The Psychological Science degree allows you to combine your interest in psychology with other interest areas across the University.

If you’re commercially minded, you might choose to combine this degree with a major in human resources, marketing or management. Alternatively, you might like to combine psychology with areas in the arts and social sciences such as philosophy, criminology, or linguistics. Or, if you’d prefer to pursue a career in healthcare or biomedical research, you could combine your degree with vision science or neuroscience.

As with the Bachelor of Psychology (Honours), if pursuing a career as a professional psychologist is what you’re after, you can choose to complete an additional fourth year honours (subject to satisfying the minimum entry criteria), paving your way towards professional registration. Your honours year will prepare you for the Masters degree. The Masters degree will allow you to specialise in your chosen area of psychology, Clinical and Forensic – and allow you to practice as a professional Psychologist.

Degree structure:
- 13 courses Psychological Science core + electives
- 9 courses Electives/ Complementary major/ Free majors
- 2 courses General education – Non science courses

The degree structure above is for a single degree and varies for a dual degree.

Bachelor of Optometry (Honours)/Science

Course content
The Bachelor of Optometry/Bachelor of Science degree provides students with an understanding of the theoretical disciplines of vision science and the clinical art of primary eye care.

The School of Optometry and Vision Science at UNSW is the largest optometry school in Australia that links its academic learning with clinical practice. It has a modern clinic providing a full range of optometry services.

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Assumed knowledge
Mathematics, Chemistry, Physics, English (Advanced)

Alternative entry into Optometry
Alternative entry to Optometry/Science is possible via the Bachelor of Science or the Bachelor of Advanced Science (Honours) with a Vision Science major. You can apply after your first year of study for one of a limited number of transfer places to Optometry/Science, commencing in second year. Assessment will be based on UMAT, performance in first year courses, and UMAT results.

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Bachelor of Psychological Science

Assumed knowledge
Mathematics

Recommended knowledge
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- Linguistics
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- Philosophy
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Degree structure:
- 13 courses Psychological Science core + electives
- 9 courses Electives/ Complementary major/ Free majors
- 2 courses General education – Non science courses

The degree structure above is for a single degree and varies for a dual degree.
The Bachelor of Psychology is your chance to study the human mind, its development, how it perceives the world and more – it’s the School of Psychology’s flagship degree, attracting the most elite applicants. Psychology is the scientific study of human behaviour. It is a diverse discipline that covers:

- the relationship between the brain and behaviour
- the processes of perceiving, learning and memory
- the assessment of abilities and attitudes
- the origins of personality and emotional states
- the nature and effects of social interactions
- the causes of abnormal behaviour

Course content
Your first year focuses on introductory psychology courses, with plenty of space for free elective courses from Science and across the University.

In your second year you will focus more on psychological training; and administrative and support services.

The final year sees you embark on your honours year conducting a research project in your chosen area of psychology. You could undertake research in abnormal and clinical psychology, behavioural neuroscience, cognitive science, cognition and perception, data analysis and psychometrics, industrial and organisational psychology, and social, personality and developmental psychology.

This professional and highly competitive degree will prepare you for the Masters degree. The Masters degree will allow you to specialise in your chosen area of psychology – Clinical or Forensic – and allow you to practice as a professional Psychologist.

Assumed knowledge
Mathematics

Recommended knowledge
English Advanced, Biology, and one of Chemistry, Earth and Environmental Science or Physics

Careers
Our graduates work in a wide variety of different contexts including clinical, legal, organisational, educational and research settings in both the private and public sectors. Psychologists are employed across several industries including health care and social assistance; public administration and safety; education and training; and administrative and support services.

Bachelor of Psychology (Honours)

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In your second year you will focus more on psychological training; and administrative and support services.

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Bachelor of Psychology (Honours)
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<tr>
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<td>429420</td>
<td>3987</td>
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<td>Bachelor of Science (International)</td>
<td>429420</td>
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<tr>
<th>Major study area</th>
<th>Relevant degrees</th>
<th>UAC code</th>
<th>UNSW code</th>
<th>Duration</th>
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<td>Materials Science and Engineering</td>
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<td>Mathematics and Statistics</td>
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<td>3991</td>
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<tr>
<td>Molecular and Cell Biology</td>
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<td>Optometry</td>
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<tr>
<td>Pharmacology</td>
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<tr>
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<tr>
<td>Psychosurgery</td>
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<td>4 FT</td>
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<tr>
<td>Vision Science</td>
<td>Bachelor of Science (Honours)</td>
<td>429350</td>
<td>3962</td>
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</tbody>
</table>
International Admission Requirements

If you're an international student looking to study at UNSW Australia, visit international.unsw.edu.au

This table is a guide only and actual entry points may be higher or lower than those indicated. In all cases admission will be determined upon the receipt of an application. The University reserves the right to vary entry requirements to those published without further notice.

ATAR entry requirements for international students are lower to account for their ineligibility for bonus points. Scores for other qualifications are based on 2015 data and will be updated online after April 2016.

*Aviation (Flying)*
This program has compulsory additional selection criteria. All applicants must submit an internal application form to the School of Aviation. During the first year of study, all students must obtain a Class 1 medical from a designated aviation medical examiner and be assessed for ICAO English requirement for pilots.

**Optometry**
UMAT is required for those residing in countries where it is available – currently this includes Australia, New Zealand, Singapore, United Kingdom and the USA.

Important Information regarding UAC
The Universities Admissions Centre (UAC) processes undergraduate program applications for institutions in the Australian states of New South Wales and the Australian Capital Territory.

As an international student, you may need to apply to study at UNSW Australia via either UAC or directly to UNSW Admissions. Please refer to Page 34 of this guide for information on admission to UNSW.

### University of New South Wales (UNSW)

<table>
<thead>
<tr>
<th>Degree</th>
<th>2017 ATAR*</th>
<th>UNSW UFS</th>
<th>GCE A Levels</th>
<th>IB</th>
<th>SAT 1</th>
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<tr>
<td>B Aviation (Flying)*</td>
<td>75.00</td>
<td>7.0</td>
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<tr>
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<td>8.0</td>
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<td>7.8</td>
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<td>B Advanced Science (Honours)</td>
<td>90.00</td>
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<tr>
<td>B Biotechnology (Honours)</td>
<td>80.00</td>
<td>7.0</td>
<td>10</td>
<td>29</td>
<td>1580</td>
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<tr>
<td>B Science (International)</td>
<td>83.00</td>
<td>7.8</td>
<td>10</td>
<td>30</td>
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<tr>
<td>B Nanoscience (Honours)</td>
<td>80.00</td>
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<tr>
<td>UNSW Foundation Studies – Transition Program into UNSW Bachelor degree</td>
<td>70.00</td>
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<td>8</td>
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<td>1540</td>
</tr>
</tbody>
</table>

### Guides

- [Singaporean A Levels](#)
- [Gao Kao](#)
- [HKDSE](#)
- [Malaysian UEC](#)
- [Canadian OSSD](#)
- [Korean CSAT](#)
- [Taiwanese GSAT](#)

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This table is a guide only and actual entry points may be higher or lower than those indicated. In all cases admission will be determined upon the receipt of an application. The University reserves the right to vary entry requirements to those published without further notice.

If you’re an international student looking to study at UNSW Australia, visit international.unsw.edu.au
How to Apply

Domestic Applicants
If you’re a domestic applicant you will need to apply online through the Universities Admissions Centre (UAC) at uac.edu.au.

International Applicants
If you’re an international applicant currently completing an Australian year 12 (either in Australia or offshore), NZ NCEA level 3 qualification or the International Baccalaureate (IB), you must apply through UAC at uac.edu.au.

If you’re an international applicant who has completed or is completing qualifications other than those listed above you will need to apply directly at apply.unsw.edu.au.

BONUS POINTS

Bonus Points are awarded in recognition of outstanding performance and achievement, and in some cases are awarded without you having to do any paperwork.

Please note: Bonus points are only awarded to domestic applicants applying through UAC. The estimated scores for international students reflect this difference. For more information on international scores, please see page 32 of this guide.

HSC PLUS

HSC Plus automatically awards up to five bonus points for achievement in subjects that are highly relevant to our degrees in science. HSC courses considered by the Faculty of Science may include:

- Biology
- Chemistry
- Earth and Environmental Science
- English Advanced
- English Ex 1 and Ex 2
- Geography
- Mathematics
- Mathematics Ex 1 and Ex 2
- Physics

To see which subjects are relevant to your degree of interest visit unsw.edu.au/hscplus.

The Elite Athletes and Performers (EAP) Program
If you excel in sport, academia, performance, leadership or music, this program may offer you the possibility of bonus points. To see if you’re eligible and for information on how to apply, visit unsw.edu.au/eap.

ACCESS Scheme

UNSW is committed to the goals of equal opportunity and affirmative action in education. The ACCESS Scheme is part of this commitment and is provided for students new to higher education who have experienced long-term educational disadvantage. These range of circumstances considered include financial hardship, English difficulties, refugee status, disability or long-term illness and attendance at a rural or disadvantaged high school. For additional information, visit unsw.edu.au/access-scheme.

GUARANTEED ENTRY (GE)

UNSW provides clarity by publishing the Guaranteed Selection Rank that assures your entry to UNSW in a particular degree. If your selection rank — your ATAR plus any eligible bonus points — meets or exceeds the stated GE rank for each degree listed in this guide, and you have that degree selected as your highest eligible preference, you are guaranteed to receive an offer for that degree. For more information, visit unsw.edu.au/guaranteedentry.

Assumed and recommended knowledge

All of our degrees have assumed knowledge and many have recommended knowledge, such as mathematics. If you don’t have the assumed knowledge for a degree, it won’t stop you from getting in but you may find it a bit difficult to keep up. We recommend the Bridging Courses if you find you haven’t got the assumed knowledge for your degree of interest.

Bridging Courses

Bridging Courses in chemistry, mathematics and physics can assist in getting you up to speed and are highly recommended for those who do not meet our assumed knowledge levels. The courses are held in late January and are completed before you start your studies in Semester 1. Please note that this is not a form of admissions pathway. Visit science.unsw.edu.au/bridging for further information.

No Maths or General Maths at high school?

Maths comes recommended for most of our degrees. If you haven’t got the high school maths level assumed for your degree, the Mathematics Essentials for Higher Education course offered at TAFE Randwick, can get you on track.

Visit science.unsw.edu.au/bridging and click Mathematics for more information.

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UNSW PREG

Sometimes circumstances beyond your control can get in the way of results that reflect your true potential. If you are keen to study at UNSW, are eligible for the ACCESS Scheme and you don’t meet the cut-off for degree entry, consider UNSW Prep. UNSW Prep is a one year pathway to a UNSW degree place. Visit unsw.edu.au/unswprop17-19.

UNIVERSITY PREPARATION PROGRAM (UPP)

At UNSW it’s not a case of how much you are willing to pay or how ‘mature’ you are, it’s about hard work and potential. By completing the UPP you can build your academic skills, experience part-time study in a subject area of your interest and decide if you will make the decision to study at university as a mature student.

Visit unsw.edu.au/upp.

INDIGENOUS STUDENTS

Advice and applications for Indigenous Preparation Programs are available at the UNSW Indigenous Programs and Student Centre, Nura Gili. Visit nuragili.unsw.edu.au.

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UNSW Sydney NSW 2052

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W science.unsw.edu.au

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Environmental statement:
The UNSW Undergraduate Guide 2017 is printed on environmentally responsible paper stock using environmentally friendly inks and varnishes.

Compliance: The Education Services for Overseas Students (ESOS) Act 2000 sets out the legal framework governing delivery of education to overseas students studying in Australia on a student visa. UNSW in providing education services to overseas students complies with the ESOS framework and the National Code of Practice for Registration Authorities and providers of Education and Training to Overseas Students 2007 (The National Code). A description of the ESOS Framework can be found at the following link: internationaleducation.gov.au/regulatory-information/pages/regulator-information.aspx

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The university reserves the right to change any degree, admission requirements or other information therein without prior notice. We recommend that you check our website for the most current information before making final selections or enrolling in any courses.