Welcome to UNSW Science
This is where the brightest minds converge to Learn, Explore, Discover

Hi there,

Aviation
Biological, Earth and Environmental Sciences
Biotechnology and Biomolecular Sciences
Chemistry
Materials Science and Engineering
Mathematics and Statistics
Optometry
Physics
Psychology

Like all great plants, our icons thrive in the sun. Hold this page in the sunlight and watch them come to life!
Prestige
Our Bachelor of Science degree has one of the highest entry requirements in NSW (85.00 ATAR in 2017). 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.

Outstanding career prospects
Our graduates are highly sought after in government, industry and the not-for-profit sectors. Moreover, people with STEM (Science, Technology, Engineering and Medicine) qualifications have a higher rate of employment than those with non-STEM qualifications (Chief Scientist report, 2016). 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, bigger really is better. With a population of over 6,000 students 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 yourself, explore new frontiers and make mind-blowing discoveries.

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. Check out scholarships.unsw.edu.au for more info.

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.
Our Students

“ When conducting research I get to learn facts about the world that nobody else knows yet. I find that really exciting.

Dana Leidl
B. Science (Advanced)"

“If you believe you have come up with a technology for the greater good, or it can advance humanity in general, I think you should go for it and give it a shot.

Daniel Tan
B. Science"

“For me it comes down to having my puzzle for the day, working on it, and trying to solve it. I think that’s really satisfying.

Willem Huiskamp
B. Science (Advanced)"

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A NOTE ON MAJORS

There are many majors you can study at UNSW Science. To assist you in navigating what’s available in your preferred fields, we’ve created THE PERIODIC TABLE OF MAJORS! This is right in the middle of this book, and you can tear it out and refer to this for any of the programs listed on the following pages.

A MAJORS GUIDE
Bachelor of Advanced Mathematics (Hons)

Assumed knowledge
Mathematics Extension 1

Majors available
Applied Mathematics, Pure Mathematics, Statistics

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.

Career outcomes
Opportunities in banking, insurance and investment, environmental modeling, oceanography, meteorology, computing, information technology, government, education and research.

Can be combined with
Actuarial Studies, Arts, Commerce, Computer Science, Economics, Engineering (Hons), Law

Bachelor of Advanced Science (Hons)

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

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.

Can be combined with
Actuarial Studies, Arts, Commerce, Computer Science, Economics, Engineering (Hons), Fine Arts, Law, Music, Social Research and Policy (Hons)

Career outcomes
Employment with research institutes, start-up innovation companies, university or industry in Australia or overseas, technology management, analysis in business or finance, psychology, medical research and development, environmental protection or forensic science.

Want to dive deep into mathematics, from the abstract to the applied? Then this Advanced degree is for you. The Bachelor of Advanced Mathematics (Honours) lets you explore your passion for maths while still allowing the flexibility to study courses from across the university.

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

Got the science-smarts? This four-year advanced degree offers 26 majors to those looking for a bigger science challenge. 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 tailor your degree in a way that works for you.

Degree structure
- 16 courses: Major + Science electives
- 4 courses: Free electives - Any UNSW faculty course
- 2 courses: General education - Non science courses

1 year Honours
Calling all pilots of the future! Our Flying degree will have you controlling the cockpit in no time. 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.

**Assumed knowledge**
Mathematics

**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 200 hours of flight training and approximately 30 hours of simulator training.

**Important information**
— Students will need to obtain a Class 1 Civil Aviation Authority (CASA) medical examination before flying training commences in second year.

**Career outcomes**
Become a pilot for regional or major commercial airlines, training centre, and charter flights, or be an aerial surveyor.

### Degree structure

- **21 courses**
  - Aviation Flying Core
- **6 courses**
  - Aviation Flying Core and Electives
- **2 courses**
  - General education - Non science courses

**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 200 hours of flight training and approximately 30 hours of simulator training.

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**Career outcomes**
Become a pilot for regional or major commercial airlines, training centre, and charter flights, or be an aerial surveyor.

### Degree structure

- **21 courses**
  - Aviation Flying Core
- **6 courses**
  - Aviation Flying Core and Electives
- **2 courses**
  - General education - Non science courses
Advances in computing over the past few decades have led to an explosion in data and this degree has been developed to meet the growing demand for data scientists and data analysts. Graduates will have broad and coherent knowledge of data science through the core study program, comprising of mathematics and statistics, computer science and economics subjects. They will also possess specialist knowledge in one of these areas through the completion of a major. This degree will produce graduates who are able to prepare, process, interpret and present data using appropriate qualitative and quantitative techniques.

Assumed knowledge
Mathematics and Chemistry

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 multidisciplinary 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.

Career outcomes
Become a scientist or researcher with medical, biological or pharmaceutical research organisations. Some of our graduates are research and development managers, clinical trial associates, working in government regulation and policy, industry regulatory affairs or intellectual property management. There are also career options in marketing, sales, biotech investment and finance, and business development.

Assumed knowledge
Maths Extension 1

Majors available
Quantitative Data Science;
Computational Data Science;
Business Data Science

Career outcomes
Data scientist, data engineer, data analyst, statistician, business analyst, data manager, data architect and database administrators.
The degree structure above is for a single degree and varies for a dual degree.

If you want an engineering qualification and are curious about what materials are made of, a materials science degree is for you. 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.

**Assumed knowledge**
Mathematics Extension 1, Physics

**Majors available**
Physical Metallurgy; Process Metallurgy; Materials Engineering; Ceramic Engineering

**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 year research project and seminar.

This degree will be sure to give you an advantage; we are the only school in Australia to offer specialisations in Ceramic Engineering, Metallurgical Engineering and Materials Engineering and have well equipped facilities to put you ahead of the field.

Can be combined with
Commerce, Engineering Science in Chemical Engineering, Master of Biomedical Engineering

**Career outcomes**
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.

The Bachelor of Environmental Management will provide you with the skills and knowledge necessary to work or carry out research as an environmental scientist. You will consider the scientific aspects of the environment within the general context of the policy and legal framework of environmental regulations, as well as economic and social dimensions of environmental policy and management.

**Assumed knowledge**
Mathematics and Chemistry

**Majors available**
Biology; Earth Science; Ecology; Environmental Chemistry; Geography; Marine Science

**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 year research project and seminar.

This degree will be sure to give you an advantage; we are the only school in Australia to offer specialisations in Ceramic Engineering, Metallurgical Engineering and Materials Engineering and have well equipped facilities to put you ahead of the field.

Can be combined with
Arts

**Career outcomes**
Environmental consultants or officers within industry or with local, state or federal government. Employers may include National Parks and Wildlife or the Environmental Protection Authority.

The degree structure above is for a single degree and varies for a dual degree.
Bachelor of Life Sciences

The life sciences domain brings together the biological, environmental and medical sciences into a far-reaching and fascinating field of study. The Bachelor of Life Sciences will satisfy your innate curiosity about life, from the way things work at the molecular level, to the study of entire ecosystems. Discoveries in the life sciences are integral to the advancement of our world and society.

While maths and the physical sciences aren’t necessarily part of the degree, there is still the option to study these as electives to broaden and enrich your studies. As a graduate you will leave equipped to enter a wide range of interesting and rewarding careers, both in and beyond the sphere of the life sciences.

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

Degree structure

<table>
<thead>
<tr>
<th>16 courses</th>
<th>6 courses</th>
<th>2 courses</th>
<th>1 year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major + Science electives</td>
<td>Free electives - Any UNSW faculty course</td>
<td>General education - Non science courses</td>
<td>Optional Honours</td>
</tr>
</tbody>
</table>

Career outcomes
Mathematics and Chemistry
Health, agriculture, medicine, pharmaceutical and food science industries. 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.

Bachelor of Medical Science

Fascinated by the human body? A medical science degree will teach you all about life, death, health and disease. Medical Science underpins the practice of medicine. Whether you are looking for a career in biomedical research, or to go into graduate medicine or paramedical degrees, if you are fascinated about how the human body works, this could be the degree for you.

A limited number of high-performing students may be able to gain entry to the UNSW Medicine degree with advanced standing.

Assumed knowledge
Mathematics and Chemistry

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

Course content
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

<table>
<thead>
<tr>
<th>20 courses</th>
<th>2 courses</th>
<th>2 courses</th>
<th>1 year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Science core + electives</td>
<td>Free electives - Any UNSW faculty course</td>
<td>General education - Non science courses</td>
<td>Optional Honours</td>
</tr>
</tbody>
</table>

Career outcomes
Medical research, paramedical professions, health policy, medical laboratory science, pathology and forensic science, pharmaceutical and related industries.
WE GET IT.
CHOOSEING A MAJOR FOR YOUR SCIENCE DEGREE CAN BE A LITTLE BIT OVERWHELMING, SO WE CREATED THE...

PERIODIC TABLE OF SCIENCE MAJORS

Find your generalist degree (the ones with the most majors).

Choose the disciplines of science that interest you (we colour coded them for you).

See which majors you can study.

There are many more areas of study within our specialist degrees.

MEANING OF THE MAJORS
READ ON TO LEARN MORE ABOUT MAJORS!

Anatomy 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.

Archaeology & Palaeoenvironments focuses on the evolution of cultures and environments they inhabited. Extinct species and environmental change, or interactions between humans and their environments can be studied, using case studies.

Biological Chemistry places an emphasis on organic and inorganic chemistry. It also includes biochemistry and molecular biology.

Bioinformatics draws upon both computing and life sciences, and involves developing technologies for managing biological information.

Biology is the study of life and living organisms. We offer expertise in botany, ecology, marine biology and zoology.

Biotechnology is a mix of natural sciences and engineering. It is the innovative use of living organisms and their parts to improve existing industrial processes.

Climate Dynamics has an emphasis on understanding the dynamical systems within the atmosphere and oceans.

Chemistry deals with properties, analysis, design and synthesis of molecules. Learn the skills required to design new materials, new technologies meeting real-world challenges facing society today.

Climate Systems Science focuses on the Earth’s climate system and an understanding of the fundamentals of atmospheric science, oceanography and chemistry.

Ecology is the science of the relationships between organisms and their environments. Ecologists study the distribution and abundance of organisms, and the structure and function of ecosystems.

Earth Science covers a diverse range of studies including mineralogy, fossils and palaeontology, mineral resources, plate tectonics and natural hazards.

Food Science is concerned with food processes, food commodities, food composition and food quality (including sensory properties, safety and nutritional value).

Genetics is the study of evolution and inheritance, how biological information is passed on between generations and how it is used and stored.

Geochemistry investigates the source, fate and geochemical behaviour of materials and the processes involved in geochemical systems operating in natural and human-altered environments.

Geography examines environmental systems and relationships between human societies and the earth’s resources and environmental management, and the built environment.

Mathematics provides the language for a fundamental understanding of nature, technology and commerce.

Marine & Coastal Science focuses on both physical and biological aspects of the marine environment. Biologists, geologists and oceanographers want to learn more about the sea so we can both use and protect this valuable resource.

Microbiology studies the smallest organisms and their impacts. Many microorganisms are used to benefit areas such as baking, brewing, the manufacture of dairy foods, and pharmaceuticals.

Molecular & Cell Biology marries biochemistry, genomics, and cell biology, providing a new approach for the study of living organisms.

MATERIALS SCIENCE is the underlying science of materials including metals, ceramics, plastics, composites, nanomaterials and biomaterials.

Neuroscience has two primary goals: to understand and explain behaviour and consciousness; and to understand and treat diseases of the nervous system.

Psychology is the study of human behaviour. Explore the brain, perception, learning and memory, abilities and attitudes, origins of personality, and emotional states.

Pathology involves the study of diseases such as infections and cancers, and their processes, such as inflammation, at the genetic, molecular, cellular, and organ levels.

Pharmacology is the study of the interaction between drugs and living systems, particularly molecular interactions of drugs at the organ, tissue and cellular level.

Physical Oceanography involves an understanding of the mathematical equations that describe fluid flow, and how these are used in the context of the ocean.

Physics/Advanced Physics is the study of the laws of nature that govern the behaviour of the universe. Physics applies these laws to the solution of practical and theoretical problems and to the development of new technologies.

Physiology examines how our body and its organs, tissues and cells, work as part of an integrated system. It describes the fundamental properties of living systems.

Statistics, like Mathematics, provides the language for a fundamental understanding of nature, technology and commerce. Data and factual information can be understood using the techniques and theory of statistics.

Vision Science focuses on how we see, and also the application of technology to help us see better. Skills that enable the creation of new instruments and vision technologies will be learned.
### Advanced Science Majors

- **Embedded Honours Year**
- Ability to study more difficult third year subjects in first year
- Broader knowledge with subjects that are designed to be challenging

### Science + Science & Business + Science (International) Majors

Science and Business, allows students to be passionate about science while establishing a foundation in business knowledge to build a range of skills

- Embedded Exchange in Science (International)

### Life Sciences Majors

- Designed to allow students to focus more heavily on life sciences
- Maths and physics are not a mandatory part of the program, but are still able to be taken as electives, to broaden and enrich studies
Bachelor of Medicinal Chemistry (Hons)

**Degree structure**

| 20 courses | Medicinal Chemistry core and electives |
| 2 courses | Free electives - Any UNSW faculty course |
| 2 courses | General education - Non science courses |

**Career outcomes**

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.

The multidisciplinary nature of the degree also means you could work in other science-based industries and related fields.

The research focus in your final honours year will also enable you to progress seamlessly into a higher degree, should that interest you.

**Assumed knowledge**

Mathematics and Chemistry

**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.

Sometimes our bodies need a helping hand. Make a real contribution to drug development with a degree in medicinal chemistry.

**DURATION**

4 YEARS

**2017 ATAR CUT-OFF**

90

**2018 GE RANK**

90

**UAC CODE**

429720

**ENTRY**

S1

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Bachelor of Nanoscience (Hons)

**Degree structure**

| 16 courses | Nanoscience core |
| 2 courses | Nanodevices or Nanomaterials specialisation |
| 2 courses | General education – Non science courses |

**Career outcomes**

Developing and commercialising products in the emerging nanotechnology industry. Opportunities in business, research, industry or enterprise.

**Assumed knowledge**

Mathematics Extension 1, Chemistry and Physics

**Course content**

The Bachelor of Nanoscience (Honours) is a truly multidisciplinary 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.

Be part of the future. 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.

**DURATION**

4 YEARS

**2017 ATAR CUT-OFF**

85

**2018 GE RANK**

85

**2017 IB DIPLOMA**

31

**UAC CODE**

429450

**ENTRY**

S1 & S2
Combine your love of Psychology with a second area of study from Science, Business or Arts. The Bachelor of Psychological Science degree allows you to complete an accredited psychology degree in three years, or if you’re interested in becoming a professional psychologist, you can complete an additional fourth year honours.

Assumed knowledge
Mathematics

Optional Majors available
Criminology; Human Resource Management; Linguistics; Management; Marketing; Neuroscience; Philosophy; Vision Science

Course content
The Psychological Science degree allows you to combine your interest in psychology with other interest areas. If commercially minded, you might combine this degree with a major in human resources, marketing or management. Alternatively, you might like to combine psychology with 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 entry criteria), paving your way towards professional registration. Honours will prepare you for the Masters degree, which will allow you to specialise in your chosen area, and allow you to practice as a professional Psychologist.

Career outcomes
Clinical, legal, organisational, educational and research settings, in both the private and public sectors. Across industries including health care and social assistance; public administration and safety; education and training; and administrative and support services.

Professional recognition
To become a member of the Australian Psychological Society, and for registration as a psychologist in New South Wales, Australia, you must first complete an approved four-year degree in psychology followed by an accredited postgraduate course in psychology offered at UNSW. An alternative to postgraduate study is two years of supervised experience in professional practice.

Can be combined with
Law

Bachelor of Psychological Science

Degree structure
13 courses Psychological Science core + electives

24
Bachelor

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

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

Can be combined with
Law

Bachelor of Psychology (Hons)

DURATION
3 YEARS

2017 ATAR CUT-OFF
87

2017 GE RANK
31

UAC CODE
429800

ENTRY
S1 & S2

Combine your love of Psychology with a second area of study from Science, Business or Arts. The Bachelor of Psychology (Hons) degree allows you to complete an approved psychology degree in four years, or if you’re interested in becoming a registered psychologist, 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.

Assumed knowledge
Mathematics

Course content
Psychology is the scientific study of human behaviour. Our prestigious psychology degree is the very best preparation for those wanting to become a registered psychologist. 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.

Assumed knowledge
Mathematics

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 science with courses in social and developmental psychology; perception and cognition; learning and physiological psychology; and assessment, personality and psychopathology. In your third year you take advanced courses on earlier topics combined with courses on organisational contexts and forensic issues.

Professional recognition
To become a member of the Australian Psychological Society and for Registration as a psychologist in New South Wales Australia you must complete this three year degree followed by an Honours Year and then followed by an accredited postgraduate course in psychology such as the Master of Psychology (Clinical or Forensic) offered at UNSW.

Can be combined with
Law

Degree structure
16 courses Psychology core + electives

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

2 courses General education + Non science courses

1 year Honours

Honours

6 courses Free electives - Any UNSW faculty course

1 year Honours

Degree structure
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 settles you in and gets you heading in the right direction.

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

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 you're building is the springboard into a career you will love. Free electives give you the opportunity to explore interests before selecting your major; you can even study courses outside of Science. You'll also have the opportunity to undertake an additional Honours year should you perform well over the first three years of your degree.

Career outcomes
Science and technology-based industries and businesses in management, research and communication within industry, government and the private sector. Graduates work in business, industry, government and universities, and are employed in areas as diverse as pharmaceutical and medical research, occupational health and safety, environmental research and industry, manufacture of new products, forensic science, patent law, cognitive science, oceanography, food manufacture, science teaching, science journalism, meteorology, optics and applications of mathematics and statistics in the finance industry.

Does this program appeal to you?
Don't forget to check out the Periodic Table of Majors, in the middle of this book! This will show you all the areas of study you can choose.

Degree structure

<table>
<thead>
<tr>
<th>Courses</th>
<th>DURATION</th>
<th>ATAR Cut-off</th>
<th>GE RANK</th>
<th>IB Diploma</th>
<th>UAC Code</th>
<th>ENTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 courses Major + Science electives + 2 courses General education + Non science courses + 4 courses Free electives - Any UNSW faculty course</td>
<td>3 YEARS</td>
<td>85</td>
<td>85</td>
<td>31</td>
<td>429000</td>
<td>S1 &amp; S2</td>
</tr>
</tbody>
</table>

For the global minded — spend one year studying overseas in our four-year international degree.

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).

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 work 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 internationally-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.

What you will study
— Major: this is the field of science in which you specialise. All students choose a major (or two), which will provide them with a solid education in scientific theory, method and research.
— A minor in a language
— Electives which cover cultural studies, international business, development studies and globalisation
— An overseas exchange for 1 or 2 sessions at an approved partner university. Students are provided with a contribution towards the expenses of the exchange by the Faculty of Science.

Career outcomes
Gain employment, in Australia and overseas, in a variety of science and technology-based industries and businesses, in management, research and communication, within industry, government and the private sector.

Degree structure

<table>
<thead>
<tr>
<th>Courses</th>
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<th>IB Diploma</th>
<th>UAC Code</th>
<th>ENTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 courses Major + Science electives + 4 courses Directed electives + 6 courses Language minor</td>
<td>4 YEARS</td>
<td>87</td>
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</tbody>
</table>

The degree structure above is for a single degree and varies for a dual degree.
Successful careers are built on a range of skills and it’s a challenge to prepare yourself to cover all the bases when you graduate. Now it’s possible to study Science and Business in a dedicated three-year degree. If you’re passionate about science and you also want a valuable foundation in business knowledge, study both in this single degree.

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

**Course content**
Two thirds of your study will be in science inclusive of a science major. High performing students can apply to do Honours in science in their fourth year.

The remaining courses are from the UNSW Business School. These include foundations in accounting, microeconomics, marketing, business law and management as well as additional options to give you a greater depth of knowledge in marketing, business law and management.

**Career outcomes**
Science and technology-based industries and business in management, research and communication within industry, government and the private sector. Graduates 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.

Vision Science is the study of the sensory processes that underlie vision, and the development and use of vision-related technologies. This broad discipline degree provides comprehensive knowledge and direct training in areas relevant to a career in Vision Science such as: Optics, anatomy and functioning of the eye, eye disorders, clinical optometry, ocular therapy, sensation and perception, psychophysics, and research design, methods and experimentation.

Students who complete this degree may be eligible to apply to the Master of Clinical Optometry degree on a competitive basis.

**Assumed knowledge**
Mathematics, Chemistry, Physics and English Advanced

**Career outcomes**
A wide range of optics, vision science and ophthalmology research laboratories which involve the development of vision correction devices such as contact lenses, spectacles, ocular implants, imaging, and drug development.

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Do you have a question or need more information about science and business or vision science at UNSW Sydney? Don’t forget to check out the Periodic Table of Majors, in the middle of this book! It will show you all the areas of study you can choose.
Bachelor of Vision Science / Master of Clinical Optometry

Degree structure

22 courses Vision Science courses + 16 courses Clinical Optometry Masters + 2 courses General education - Non science courses

Provide quality Vision and Ocular health care with our Bachelor of Vision Science/Master of Clinical Optometry degree. Optometry combines the theoretical discipline of vision science with the clinical art of primary eye care. Vision science includes the optics of lenses and instruments, the physiology of the eye, the psychophysics of vision and the neurosciences of the brain.

Optometry includes the diagnosis and management of ocular disease, the dispensing of spectacles and contact lenses, the management of people with special needs (children, low vision), sports vision and vision in the workplace. Graduates of this program will be able to apply to register as an optometrist in Australia. The degree is also recognised in New Zealand and in most parts of Asia. Job opportunities in this field are excellent and are expected to remain excellent given the high visual demands in the modern computer-based workplace, and the ageing population in Australia.

Graduates of the dual award Bachelor of Vision Science/Master of Clinical Optometry will have specialised knowledge and skills for professional practice and research in Optometry and Vision Science and further learning.

Assumed knowledge

Mathematics, Chemistry, Physics and English Advanced

Career outcomes

Optometrists may specialise in clinical practice, paediatric optometry, contact lenses, public health, sports vision, low vision rehabilitation or behavioural optometry.

Dual Degrees

Dual degrees enable you to combine a Science degree with a degree from another faculty, offering you the flexibility to explore interests beyond science. A dual degree helps you expand your skill base and broaden your career prospects, and can be completed in as little as four years.

Art and Design Dual Degrees

<table>
<thead>
<tr>
<th>2017 ATAR/2018 GE</th>
<th>UAC Code</th>
<th>UNSW Code</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
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<td>429230</td>
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<tr>
<td>Advanced Science (Honours)/Fine Arts</td>
<td>95.00 / 96.00</td>
<td>429395</td>
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Arts and Social Sciences Dual Degrees

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<th>UAC Code</th>
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<th>Duration</th>
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<tbody>
<tr>
<td>Science/Arts</td>
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<td>429200</td>
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<td>Science/Social Research &amp; Policy</td>
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<tr>
<td>Science/Media Studies</td>
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<td>3457</td>
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<tr>
<td>Science/Arts</td>
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</tr>
<tr>
<td>Science/Arts</td>
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Business School Dual Degrees

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<th>Duration</th>
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<td>Economics/Advanced Accounting</td>
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<tr>
<td>Economics/Computer Science</td>
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<tr>
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<tr>
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Engineering Dual Degrees

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<td>Science/Computer Science</td>
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Law Dual Degrees

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<tr>
<td>Advanced Science (Honours)/Law</td>
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<td>3997</td>
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<tr>
<td>Science and Business Law</td>
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<tr>
<td>Medicinal Chemistry (Honours)/Law</td>
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<td>426000</td>
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<tr>
<td>Psychological Science/Law</td>
<td>ATAR + LAT</td>
<td>426000</td>
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</tr>
</tbody>
</table>

*Check the UNSW Law website for current entry requirements and information about the Law Admissions Test (LAT).
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.

Scores for all qualifications are based on 2018 data.

*Aviation (Flying)*
This program has compulsory additional criteria. 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.
Admission to
UNSW Science

How to Apply

Domestic Applicants
You are a domestic applicant if you are an Australian citizen, Australian permanent resident or a New Zealand citizen. Domestic applicants 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 UNSW Science may include:

- Biology
- Chemistry
- Mathematics
- Physics
- English Advanced
- English Ext 1 and Ext 2
- Geography

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

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. The 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 Sydney TAFE (Randwick Campus), can get you on track. Visit science.unsw.edu.au/bridging and click Mathematics for more information.

Alternative Entry

Degree Transfer
For many of our degrees, if you are studying at UNSW you can apply to transfer to another degree via the UNSW Internal Program Transfer. You’ll be assessed on your performance in previous UNSW studies via your Weighted Average Mark (WAM). Visit ufs.unsw.edu.au.

If you’re studying a degree outside of UNSW, you can apply for a transfer through UAC after completing a minimum of one year of university study (minimum of 0.75 full time equivalent in a degree). Assessment will be based on a combination of ATAR and university results.

UNSW Foundation Studies
The UNSW Foundation Studies program is designed specifically for students with an international education background. After the successful completion of the Foundation Studies program students have a guaranteed place via a provisional offer to an undergraduate degree at UNSW. Visit ufs.unsw.edu.au.

UNSW Prep
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 UNSW 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/unswwprep17-19.

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 for more information.

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 for more information.
UNSW Science
Photo Competition

Science is amazing and it’s everywhere. The beauty, wonder and action in Science is what makes us at UNSW Science tick, which is why we hold an annual photo competition. With $4000 worth of cash prizes available, it’s open to all high school students, current UNSW staff, students and UNSW alumni.

Visit science.unsw.edu.au/photocomp for more information.

UNSW Science Newsletters

UNSW Science have a newsletter for everyone! Not only are they a great source of science news, we list our events. We also often have some great offers and discounts, and you can win some great prizes in our competitions!

The Beacon
Our newsletter for teachers, containing information about all our news and upcoming events for teachers and students. Any high school Science or Maths teacher, or Careers Advisor, is eligible to subscribe via the form:
science.unsw.edu.au/beacon

Explore
Our newsletter for high school students. We encourage you to share this with your students so that they can subscribe and learn more about their favourite science subjects, what’s on at UNSW, and also the careers that are possible for UNSW Science graduates. Students can subscribe to Explore by filling in the form:
science.unsw.edu.au/explore

A selection of winners from the 2016 photo competition