“We have been really concerned about climate changing over the past century or two, but we are dealing with a system that beats to multiple different rhythms in time and space. There are all sorts of patterns and scales that our natural systems behave, respond and operate in. If we can piece together how natural systems change both with and without human intervention, then we can have a better understanding of how things might change into the future.”

Dr Michael-Shawn Fletcher,
Senior Lecturer,
School of Geography

Hammering a deep lake piston corer into the 50-metre-deep Lake Vera, Tasmania.
Why Science at Melbourne?

To tackle the world’s greatest challenges, we need more scientists. Those who can explore, analyse, interpret and invent will be the leaders of tomorrow, addressing and solving Earth’s global problems and utilising every opportunity for our world’s advancement.

We provide a world-class education at a world-class university. As a pioneer in scientific teaching and research for over 150 years, the Faculty of Science will provide you with a stimulating learning environment where you can join scientific leaders in the search for solutions to today’s most challenging problems.

We’re improving half the world’s diet
Iron and zinc deficiency is a major problem in many developing countries. Dr Alex Johnson leads a research team that has developed an iron and zinc biofortified rice that has the potential to change the lives of the billions of people who obtain most of their calories from rice.

We’re growing greener cities
Dr Claire Farrell and Mr John Rayner are part of a team working with the City of Melbourne to use greenery in infrastructure to make our city even more efficient. Using a plant-based roof just 10 centimetres deep on buildings can increase human productivity, prevent urban flooding, create energy savings and reduce the inner-city temperature.

We’re making any surface solar
University of Melbourne researchers including Dr Wallace Wong and Dr David Jones are creating new materials for solar cells. The researchers envisage that in the future flexible solar cells will cover roofs, windows, clothing, phones and cars to capture sunlight wherever it falls.

We’re saving lives at birth
Breakthroughs in prenatal care could result in 1000 more babies being safely born over the next 12 months. Researchers including Professor Laura Parry are working on tools that will enable doctors to identify babies at high risk of stillbirth while still in the womb to increase the rates of safe deliveries for parents across the world.
Bachelor of Science

The Bachelor of Science has 41 majors to choose from. It is one of the most flexible and broad science degrees in Australia, making it a great first step towards your dream career.

You will be able to choose subjects that will lead to your choice of major (area of expertise), or subjects that keep a wide range of options open while you make up your mind about which major to complete. There are subjects on offer that you may not have had the chance to study before, and familiar subjects that allow you to go deeper into your favourite science areas.

Your subjects will include:

- **Subjects leading to a major, and major subjects**: Subjects taken in first, second and third years which form your area of expertise (major)

- **Science elective subjects**: Science, engineering or technology electives to suit your interests, including subjects complementing the majors you are considering

- **Breadth subjects**: Subjects from outside your core study area (see page 6)

- **A capstone experience**: Apply the knowledge and skills you have developed to a research or practical project, or an internship. This is taken in third year.

Choosing your major

As a Bachelor of Science student, you must complete a science major – a series of subjects in your area of specialisation. You will develop a study plan made up of first, second and third-year-level subjects that culminate in one of the following majors (usually four subjects in a particular study area taken at third-year level):

- Agricultural Science
- Animal Health and Disease
- Animal Science and Management
- Biochemistry and Molecular Biology
- Bioengineering Systems
- Biotechnology
- Cell and Developmental Biology
- Chemical Systems
- Chemistry
- Civil Systems
- Climate and Weather
- Computational Biology
- Computing and Software Systems
- Data Science
- Ecology and Evolutionary Biology
- Electrical Systems
- Environmental Engineering Systems
- Environmental Science
- Food Science
- Forest Science
- Genetics
- Geography
- Geology
- Human Structure and Function
- Immunology
- Informatics
- Marine Biology
- Mathematical Physics
- Mathematics and Statistics
- Mechanical Systems
- Mechatronics Systems
- Microbiology and Immunology
- Neuroscience
- Pathology
- Pharmacology
- Physics
- Physiology
- Plant Science
- Psychology
- Spatial Systems
- Zoology.

See pages 7–15 for more details.

⚠️ Your course plan will be different if you are commencing in Semester 2. A number of majors or specialisations within some majors cannot be completed within three years from a mid-year start date due to subject availability. You should pay close attention to prerequisite subjects and when they are offered to avoid any unnecessary delays to your course.

### Bachelor of Science

**Duration**
- 3 years full time
- Part time available (domestic students only)

**Campus**
- Parkville

**Entry**
- Semester 1 or 2

**Contact hours (first year, full time)**
- Approximately 20 hours per week, plus independent study time of approximately 20 hours per week

Find out more
- [bsc.unimelb.edu.au](http://bsc.unimelb.edu.au)
- [twitter.com/SciMelb](https://twitter.com/SciMelb)

Immerse yourself in a different way of thinking

The Melbourne Curriculum is an Australian first, inspired by the top international universities. We designed it with one purpose in mind: to produce graduates ready to make a difference on a global scale. With a multitude of study options, the Bachelor of Science is your first step towards a rewarding science career, while further study at graduate level allows you to enter professional roles in science, engineering, veterinary science, health practice and more.

Your course plan

You can tailor your course plan according to your interests and aspirations.
Bachelor of Science (Extended)

The Bachelor of Science (Extended) has been developed specifically for Indigenous Australians. It is a four-year degree with integrated support and academic skills development, to ensure your success in our Science program.

A pathway to Science

The Bachelor of Science (Extended) provides opportunities for Indigenous Australians who may have missed the chance to do key science or mathematics subjects right through to Year 12, or who may not have obtained the results required for direct entry into the Bachelor of Science.

You will live on campus in one of the University’s residential colleges, and benefit from targeted support and mentoring. The aim of the first two years of the program is to build a strong foundation for success in science study. In your first and second year, you will focus on practical workshops and tailored academic support through science, mathematics and communication subjects that are only available in the Extended program. Once you have established your foundation in science, you embark on further subjects available in the standard Bachelor of Science program.

Eligibility

You must be of Aboriginal or Torres Strait Islander descent and have completed a Victorian Certificate of Education or interstate equivalent qualification. You also need to have satisfactorily completed biology, chemistry, physics or mathematics to at least Year 11 level, and English at Year 12 level. You must demonstrate the potential to succeed in tertiary science study.

Non-school leavers, mature-age students and alternative pathway applications will be considered. All eligible applicants will be required to attend an interview.

Applications are assessed on a case-by-case basis. You must apply through VTAC.

The Bachelor of Science (Extended) is delivered by the University of Melbourne, and is the tertiary education element of a broader Indigenous STEM education project managed by CSIRO in partnership with the BHP Billiton Foundation.
Planning your degree

As a Bachelor of Science student, you are part of a supported community. We are dedicated to making the transition to university easy and enjoyable, starting from Science Day 1.

Science Day 1
Science Day 1 is an academic orientation day that introduces you to the structure of the Bachelor of Science. You’ll get information on what’s available in the degree, subject planning ideas and the opportunity to meet other Science students.

What will I study?
Science is an increasingly interdisciplinary field. Studying subjects from more than one area will allow you to complement your major, understand problems from multiple perspectives and help you make the most of your degree. It also increases your graduate study and career options.

First year
Many of the first-year subject areas will be familiar to you from secondary school – like biology, chemistry, maths, psychology and physics – but you will gain new knowledge and skills in these areas.

Second year
You’ll start to specialise in second year, preparing you to choose a Science major in third year. In most cases you can keep your options open for at least two majors, allowing you to further explore diverse areas of science, technology and engineering before making a decision at the end of the year.

Third year
Your major provides a coherent study experience and a depth of knowledge in a single science, technology or engineering systems discipline, or in an interdisciplinary area.

The sample course plans on pages 7–15 will give you an idea of how you might structure your degree.

Get an edge with breadth
The Bachelor of Science requires you to choose subjects from outside the science, technology, engineering and mathematics (STEM) areas. We call this the ‘breadth’ component of your degree.

With breadth you can:
- Pursue a skill or passion, such as music or a language
- Complement your core studies by learning to look at issues from a different perspective
- Develop interests and skills to prepare you for your future career.

Your breadth selection can be as broad or targeted as you like. If you are interested in a particular topic or area, you can choose to take a ‘breadth track’, which is a set of three or more related breadth subjects that progressively develops your knowledge and skills.

breadth.unimelb.edu.au

Next steps
Each year, over 70 per cent of our Bachelor of Science graduates go on to further study. Most of them choose the University of Melbourne.

You could delve more deeply into a scientific topic and prepare yourself for a career in research or industry by pursuing honours, a masters program or even a PhD in science, engineering, medicine, dentistry and health sciences or veterinary and agricultural science.

You could also use your Bachelor of Science as a pathway to further study in a range of other areas. See pages 23–25 for information on graduate study options such as Law, Medicine, Engineering, Design, Optometry, Education and IT.

courses.science.unimelb.edu.au
Science majors

You will develop a study plan made up of first, second and third-year level subjects that lead to your major. You can choose from the following options.

Agricultural Science
Explore the science behind sustainable food and fibre production, and learn how to manage associated agricultural systems. In this major, you will study biology, mathematics, statistics and chemistry. You will learn about plant health, crops, livestock and grazing systems, leading to various careers in agribusiness, government and industry.

This field of study is also available in the Bachelor of Agriculture.

Animal Health and Disease
Learn to understand animals and their health, behaviour and handling, in the context of veterinary medicine, animal production and management, biosecurity and animal scientific research. This major can be the first step towards a career as a vet, and in second year you may apply for entry to the Veterinary Bioscience specialisation (a prerequisite for the Doctor of Veterinary Medicine). You may also choose to study areas including the genetics and breeding of animals, livestock science or disease surveillance.

Animal Science and Management
Develop your understanding of all areas relating to animal management, including nutrition, growth and development, behaviour and welfare, genetics and breeding, health, livestock science and reproduction, and biotechnology. In this major you will develop an understanding of domestic and captive animal biology, and learn about the care of animals and their use for food, fibre, recreation and companionship. This may lead to a career in animal research, agricultural industries or animal welfare organisations.

Pursue possible careers in pharmaceutical research, in the biotechnology industry, or in the development and production of biochemical consumables.

This major is also available in the Bachelor of Biomedicine.

Bioengineering Systems
Biomedical engineering is an exciting fusion of engineering, science and medicine, and is one of the fastest-growing areas in the field. In this major, you will focus on human systems, the design and operation of devices and processes, and the application of engineering skills to new medical treatments, instruments and machines. Our engineers are working on ground-breaking innovations, such as the bionic eye, devices to control epilepsy and more efficient drug delivery systems. This major leads to further study in the Master of Engineering.

This major is also available in the Bachelor of Biomedicine.

Sample course plan – Bachelor of Science
Major in Animal Science and Management
This course plan includes a sample breadth track in Property in the Urban Economy.

| Year 1 | Semester 1 | Biology of Cells and Organisms | Data Analysis 1 | Introduction to Life, Earth and Universe | Introductory Microeconomics |
| Year 1 | Semester 2 | Genetics and the Evolution of Life | From the Solar System to the Cosmos | Human Sciences: From Cells to Societies | Governing Environments |
| Year 2 | Semester 1 | Companion Animal Biology | Australian Wildlife Biology | Animal Structure and Function | Principles in Property |
| Year 2 | Semester 2 | Comparative Animal Physiolo | Applied Animal Physiology | Topics in Animal Health | Principles of Property Valuation |
| Year 3 | Semester 1 | Animal Behaviour | Applied Animal Reproduction and Genetics | Applied Animal Behaviour | Property Resource Analysis |
| Year 3 | Semester 2 | Field Biology of Australian Wildlife | Animal Systems Analysis | Animal Welfare and Ethics | Property Management |

Subjects leading to the major
Major subjects
Science elective subjects to complement the major
Breadth subjects

This is a sample course plan only. Subjects offered may change from year to year. You will be advised of current subject offerings prior to subject selection and enrolment.

The breadth subjects featured in this plan are examples only. You can choose breadth subjects according to your interests. You must complete at least four breadth subjects in this degree, plus another two subjects either as breadth or as Science electives.
Biotechnology

Biotechnology uses biological knowledge to develop new processes and products in industry, health, agribusiness and other areas of human technology. You can tailor this major to suit your needs and build on other studies in areas including biological sciences, chemical sciences, physical sciences and engineering. Depending on your focus, you may go on to careers in medical or veterinary science, food technology and agriculture, or forensic science. You could also choose to complete further study via the Master of Biotechnology.

This major is also available in the Bachelor of Biomedicine.

Cell and Developmental Biology

Develop a broad understanding of the structure and function of cells and the genetic, molecular and cellular basis of development in a range of organisms and experimental models. You will learn about methodologies used in cell and developmental biology research and how to apply this knowledge to technologies that improve the human condition. You will also consider ethical issues associated with new technologies – including IVF, birth control, stem cell technology and genetically manipulated foods and crops – to prepare you for possible careers in research laboratories and the medico-legal area.

This major is also available in the Bachelor of Biomedicine.

Chemical Systems

Chemical engineers invent, design and implement processes that convert raw materials into valuable products used in everyday life. Our chemical engineers and students are working on important projects such as clean energy biofuels and targeted drug delivery for cancer treatment, and can make a difference to the environment by developing methods for cleaner production, air pollution control and environmental bioremediation. This major leads to further study in the Master of Engineering.

Climate and Weather

Explore how Earth’s atmosphere, oceans and land surfaces influence our environment. In this major, you will learn about climate modelling and prediction, the role of principal wind and ocean current systems, and how these interact with the land surface to influence weather, climate and the environment. You may then pursue careers in government organisations, or in areas of environmental management.

Computational Biology

With continued advances in the technology used to collect biological information and data, there is a great demand for professional scientists with skills in computational biology. This multidisciplinary major combines biology and computer science, as well as mathematics and statistics. You will gain an understanding of the analysis and interpretation of biological phenomena using mathematical and statistical models, computational tools, and the algorithmic design and analysis of such models and tools. You may go on to further study in the Master of Science (Bioinformatics) or to possible careers in the pharmaceutical, biotechnology and software industries.

“Access Melbourne offered me the opportunity to study at the best tertiary institution I could have asked for. It’s been nothing short of amazing so far!”

Dilan Kilinc (Australia), Bachelor of Science, major in Biotechnology

See page 26 for more information about Access Melbourne.
Computing and Software Systems
Learn about technologies and practices from computer science, engineering and project management, and build the knowledge and skills needed for a career in the software industry. This major allows you to develop considerable technical expertise, including experience with a variety of programming languages, an understanding of the systematic processes underpinning the software development lifecycle and an appreciation of advanced computing. This major leads to further study in the Master of Engineering and Master of Information Technology.

Data Science
Over the past decade there has been an explosion in the amount of data captured from mobile devices, web logs, sensors and instruments. Organising and making sense of this information requires distinctive new skills. The Data Science major has an emphasis on statistics and computer science. It will support you in developing a strong foundation in the statistical aspects of data analysis (data collection, data mining, modelling and inference), as well as the principles of computer science (algorithms, data structures, data management and machine learning). This major is designed to provide you with an intellectual understanding of how to integrate and apply statistical and computing principles to solve large-scale, real-world data science problems.

Ecology and Evolutionary Biology
Discover how evolutionary ecology can be applied to answer questions and solve problems in many fields, including evolution, ecology and biodiversity. This major will provide you with knowledge from disciplines including genetics, organismal biology and ecosystem science. You will develop skills in the surveying, experimentation and modelling of ecological and evolutionary processes, and may pursue careers in conservation biology or environmental consulting.

Electrical Systems
Electrical engineers design and build electronic devices on all scales – from nanoelectronics to statewide power grids – and contribute to medicine by developing systems and instrumentation for bionic vision and hearing technology, and life-support systems. This major introduces you to the fundamental mathematics of signals, systems and information, and the physical science of electrical phenomena. This major leads to further study in the Master of Engineering.

Sample course plan – Bachelor of Science Major in Data Science
This course plan includes a sample breadth track in Spanish.

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Semester 1</th>
<th>Foundations of Computing</th>
<th>Calculus 2</th>
<th>Biology of Cells and Organisms</th>
<th>Spanish 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Semester 2</td>
<td>Foundations of Algorithms</td>
<td>Linear Algebra</td>
<td>Genetics and the Evolution of Human Life</td>
<td>Spanish 2</td>
</tr>
<tr>
<td>Year 2</td>
<td>Semester 1</td>
<td>Elements of Data Processing</td>
<td>Probability</td>
<td>Principles of Genetics</td>
<td>Spanish 3</td>
</tr>
<tr>
<td></td>
<td>Semester 2</td>
<td>Statistics</td>
<td>Analysis of Biological Data</td>
<td>Genes and Genomes</td>
<td>Spanish 4</td>
</tr>
<tr>
<td>Year 3</td>
<td>Semester 1</td>
<td>Evolutionary Genetics and Genomes</td>
<td>Machine Learning</td>
<td>Linear Statistical Models</td>
<td>Spanish 5</td>
</tr>
<tr>
<td></td>
<td>Semester 2</td>
<td>Science and Technology Internship</td>
<td>Applied Data Science</td>
<td>Modern Applied Statistics</td>
<td>Spanish 6</td>
</tr>
</tbody>
</table>

Subjects leading to the major | Major subjects | Science elective subjects to complement the major | Breadth subjects

#1 in Australia, #14 in the world for Computer Science

– QS World Subject Rankings by subject 2017

This is a sample course plan only. Subjects offered may change from year to year. You will be advised of current subject offerings prior to subject selection and enrolment.

The breadth subjects featured in this plan are examples only. You must complete at least four breadth subjects in this degree.
Environmental Engineering Systems

Environmental engineering involves the planning, design and management of the natural environment. Environmental engineers require an understanding of the complexity and variability of natural systems, and the way these interact with the built environment. They focus on land and water engineering – examining issues such as land use and management, salinity, water resources management, water quality and soil rehabilitation. They work to create sustainable solutions to environmental challenges. Environmental engineers regularly collaborate with biologists, ecologists and resource managers to address problems related to ecologically sustainable development.

Environmental Science

Take on the challenge of environmental management and conservation, and learn to identify and solve our world’s most pressing environmental problems. You will develop knowledge in disciplines such as biology, earth sciences, chemistry and statistics, and gain skills in risk assessment and environmental monitoring, which are crucial to careers in laboratory research, consulting and monitoring, which are crucial to careers in risk assessment and environmental chemistry and statistics, and gain skills such as biology, earth sciences, landscape management, resource economics and geographic information systems (GIS). You will develop a big picture understanding of forest ecosystems, and be able to apply your knowledge of forest ecology to address the impact of climate change on forest systems and the goods and services forests provide. You may proceed to a career in landscape or forest management or conservation, or opt to do further study in the Master of Forest Ecosystem Science.

Food Science

With the world population projected to grow to 9.7 billion by 2050, the supply, processing and distribution of food is a critical global issue. This major introduces you to new ways to improve, preserve, process, package, store and deliver food products.

Possible career options in this booming industry include product research and development, food safety and regulation, nutrition assessment and quality assurance.

Forest Science

Combine the study of biological processes with the science of growing and managing forests and forest products. This major will enable you to explore study areas such as biology, earth sciences, landscape management, resource economics and geographic information systems (GIS). You will develop a big picture understanding of forest ecosystems, and be able to apply your knowledge of forest ecology to address the impact of climate change on forest systems and the goods and services forests provide. You may proceed to a career in landscape or forest management or conservation, or opt to do further study in the Master of Forest Ecosystem Science.

Genetics

Study the variation between living things and how this variation is inherited, building a foundation for studies in biology. This major covers molecular genetics, human genetics, evolutionary genetics and genomics, which can be applied in biology, biomedical sciences, biotechnology, ecology and conservation. You’ll also develop skills in experiment design, data recording and analysis and scientific writing, with potential future employers including hospitals, museums, zoos and research institutes.

This major is also available in the Bachelor of Biomedicine.

Geography

Study how the world works, and develop your knowledge and skills in conservation and sustainable environmental practices. This major covers areas including geomorphology, fluvial dynamics, climate change, coastal processes, biodiversity and palaeoecology, and enables you to gain practical experience in the field.

You may then pursue careers in environmental and planning firms, conservation or consultancy.

This major is also available in the Bachelor of Arts.

Sample course plan – Bachelor of Science

Major in Environmental Science

This sample course plan has a sample breadth track in Creativity, the Arts and Young People.

<table>
<thead>
<tr>
<th>Year</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Year 3</th>
<th>Semester 1</th>
<th>Semester 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Biology of Cells and Organisms</td>
<td>Chemistry 1</td>
<td>The Global Environment</td>
<td>Creativity, Play and the Arts</td>
<td></td>
</tr>
<tr>
<td>Semester 2</td>
<td>Genetics and the Evolution of Life</td>
<td>Chemistry 2</td>
<td>Data Analysis 1</td>
<td>Creative Projects – Digital Technologies</td>
<td></td>
</tr>
<tr>
<td>Year 2</td>
<td>Environmental Chemistry</td>
<td>Chemistry: Reactions and Synthesis</td>
<td>Australian Wildlife Biology</td>
<td>Concepts of Childhood</td>
<td></td>
</tr>
<tr>
<td>Semester 2</td>
<td>Ecology</td>
<td>Chemistry: Structure and Properties</td>
<td>Dangerous Earth</td>
<td>Story and the Arts</td>
<td></td>
</tr>
<tr>
<td>Year 3</td>
<td>Environmental Risk Assessment</td>
<td>Imaging the Environment</td>
<td>Hydrogeology/Environmental Geochemistry</td>
<td>School Experience as Breadth</td>
<td></td>
</tr>
<tr>
<td>Semester 2</td>
<td>Problem Solving in Environmental Science</td>
<td>Analytical and Environmental Chemistry</td>
<td>Applied Ecology</td>
<td>Communicating Science and Technology</td>
<td></td>
</tr>
</tbody>
</table>

Subjects leading to the major | Major subjects | Science elective subjects to complement the major | Breadth subjects

1. This is a sample course plan only. Subjects offered may change from year to year. You will be advised of current subject offerings prior to subject selection and enrolment.
2. The breadth subjects featured in this plan are examples only. You must complete at least four breadth subjects in this degree.
3. United Nations Department of Economic and Social Affairs 2015.
Geology
Geology concerns the solid earth, in particular rocks and their constituent minerals and fossils. Through field-based and classroom activities in this major, you will learn how to interpret the world around you and unlock the secrets of Earth's amazing history. You will be able to explore a range of possible careers in research, environmental assessment and remediation, the minerals and petroleum industries, or government.

Human Structure and Function
Understand how the human body works, and learn to appreciate the relationship between human physiology (function) and anatomy (structure). This major carefully integrates anatomy and physiology, and introduces you to relevant elements from pathology, pharmacology and zoology. It may lead to careers in research, pharmaceutical industries, consultancies or scientific journalism.

This major is also available in the Bachelor of Biomedicine.

Immunology
Learn how immunology – the study of the human immune system, which controls infections and provides immunity against microorganisms – can apply to a range of areas in the biomedical sciences. This major will teach you to acquire, analyse and apply information from multiple sources, both within and beyond the laboratory. It opens up careers in epidemiology, diagnostics, molecular biology, biotechnology, vaccinology, biosafety and regulation.

This major is also available in the Bachelor of Biomedicine.

Informatics
Informatics is about using computers to work with digital information. It is the study of tools and technologies to solve problems in all types of settings, such as finance, economics, journalism, biology, health, engineering, social media and communication. In this major, you will design websites, build web applications and work with sophisticated graphics processing packages to solve practical information-based problems. You may then pursue a career in information technology or information systems within a huge range of organisations and areas.

"Undertaking a Geology major has allowed me to have a deeper understanding of how chemistry, biology and physics have worked together to form the world around us. It’s exhilarating to visit an ecosystem and be able to unpack its evolution. My mind is blown every day by the complexity and intricacy of our planet, and I think that’s the best reason to study something. My dream career is to be at the forefront of solving the environmental issues we face as a society, and hopefully improving the quality of life of both humans and the species we share our home with."

Rebecca White (Australia), Bachelor of Science, major in Geology
Marine Biology
Gain specialised knowledge and experience in marine biological systems, and in the application of ecological principles and environmental management strategies. In this major, you will develop a breadth of knowledge across a range of disciplines, from biological sciences such as botany and zoology to the physical sciences of chemistry, geography and oceanography. You may explore careers in commercial aquaculture, environmental monitoring, research or tourism.

Mathematical Physics
From black holes, thermodynamics, electricity and magnetism to acoustics and aerodynamics, mathematical physics has helped answer many of the big questions about our world. This major combines physics and mathematics to provide you with the tools you need to understand the physical world, and will build a strong foundation for careers in logistics management, market research, medical or research analysis, finance, materials science or mining.

Mathematics and Statistics
Mathematics and statistics are powerful tools for understanding science, economics and finance, and for the study of human behaviour in psychology, linguistics and the social sciences. This major provides you with deep knowledge in one of the following four specialisations: pure mathematics, applied mathematics, operations research/discrete mathematics, statistics and stochastic processes. It enables you to explore careers in the banking, finance, government and education sectors.

Sample course plan – Bachelor of Science
Major in Mechanical Systems leading to the Master of Engineering

This course plan includes a sample breadth track in Economics and Finance.

<table>
<thead>
<tr>
<th>Year</th>
<th>Semester 1</th>
<th>Semester 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>Engineering Systems Design 1</td>
<td>Calculus 1</td>
</tr>
<tr>
<td></td>
<td>Physics 1</td>
<td>Finance 1</td>
</tr>
<tr>
<td></td>
<td>Engineering Systems Design 2</td>
<td>Calculus 2</td>
</tr>
<tr>
<td></td>
<td>Physics 2: Physical Science and Technology</td>
<td>Quantitative Methods 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 2</th>
<th>Semester 1</th>
<th>Semester 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Engineering Mechanics</td>
<td>Linear Algebra</td>
</tr>
<tr>
<td></td>
<td>Engineering Computation</td>
<td>Business Finance</td>
</tr>
<tr>
<td></td>
<td>Foundations of Electrical Networks</td>
<td>Engineering Materials</td>
</tr>
<tr>
<td></td>
<td>Introductory Econometrics</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 3</th>
<th>Semester 1</th>
<th>Semester 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mechanics &amp; Materials</td>
<td>Imaging the Environment</td>
</tr>
<tr>
<td></td>
<td>Numerical Programming for Engineers</td>
<td>Investments</td>
</tr>
<tr>
<td></td>
<td>Thermodynamics &amp; Fluid Mechanics</td>
<td>Systems Modelling and Analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corporate Finance</td>
</tr>
</tbody>
</table>

Subjects leading to the major Major subjects Science elective subjects to complement the major Breadth subjects

This is a sample course plan only. Subjects offered may change from year to year. You will be advised of current subject offerings prior to subject selection and enrolment.

The breadth subjects featured in this plan are examples only. You must complete at least four breadth subjects in this degree.

Students who have a study score of 25 or higher in Mathematical Methods 3 & 4, but did not achieve 29 or higher in Specialist Mathematics 3 & 4, take Calculus 1 before proceeding to Calculus 2. Students with 27 or 28 in Specialist Mathematics 3 & 4 are eligible for entry to Linear Algebra.

Recommended for students intending to proceed to the Master of Engineering (Mechanical).
Mechanical Systems
Mechanical engineers design, construct, operate and maintain machines, robotic systems, energy systems and manufacturing equipment – practically anything with moving parts. They develop new products such as mobile phones, gaming consoles, robots, computers, cars and aircraft, as well as renewable energy systems such as wind turbines. This major prepares you for solving practical problems involving mechanical systems, and leads to further study in the Master of Engineering.

Mechatronics Systems
Mechatronics is a fast-changing discipline that blends mechanical, electrical and software engineering to develop automated and advanced manufacturing technologies. In this major, you will develop a fundamental understanding of the mathematical modelling that dictates the behaviour, response and control of mechanical systems that can perform physical tasks. You will learn about electronic sensors, the instrumentation required to support them, and programming skills used for interfacing computers with machines. This major leads to further study in the Master of Engineering.

Microbiology and Immunology
Learn about microorganisms and their ability to adapt, evolve and survive. This major combines the study of infectious microbial agents – predominantly bacteria and viruses – with the study of immune response. It may open up careers in epidemiology, diagnostics, molecular biology, biotechnology, vaccinology, antimicrobial chemotherapeutics, biosafety and regulation. It also enables possible further study in medicine and paramedical disciplines.

This major is also available in the Bachelor of Biomedicine.

Neuroscience
Neuroscience is one of the largest areas of study within the sphere of modern biology, and Australian neuroscience research has had significant international impact. This major will help you to understand the fundamental organisation and functional principles of the nervous system – from the biology of nerve cells and neural circuits through to neural systems and complex behaviours. You will gain an overview of modern neuroscience and how it interacts with molecular and cell biology, physiology, psychology, and cognitive and information science.

The Neuroscience major can lead to careers in behavioural research, drug development and evaluation, or education.

This major is also available in the Bachelor of Biomedicine.

Pathology
In this major, you will develop an understanding of disease from a molecular, cellular, tissue, functional, biochemical and immunological perspective. Pathology integrates knowledge from across a range of disciplines, including human biology and molecular genetics.

You will complete sequences of specialist and integrated subjects, and apply current molecular and genetic methods to problems in pathological and medical practice. This may lead to a career in a range of laboratory settings, in universities, hospitals or diagnostics.

This major is also available in the Bachelor of Biomedicine.

Pharmacology
Pharmacology studies the interactions between drugs and living systems, and stands at the intersection of many areas of biomedical science. In this major, you will gain an in-depth understanding of drug actions and a broad appreciation of the scientific process of knowledge acquisition and problem solving. It may lead to careers in the pharmaceutical industry, research institutes and government departments.

This major is also available in the Bachelor of Biomedicine.

Sample course plan – Bachelor of Science
Major in Neuroscience
This course plan includes a sample breadth track in Anthropology – Structures, Identity and Power.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Subject</th>
<th>Breadth Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>Biology of Cells and Organisms</td>
<td>Mind, Brain and Behaviour 1 (recommended)</td>
</tr>
<tr>
<td></td>
<td>Genetics and the Evolution of Life</td>
<td>Mind, Brain and Behaviour 2 (recommended)</td>
</tr>
<tr>
<td>Year 2</td>
<td>Biological Psychology</td>
<td>Principles of Genetics (recommended)</td>
</tr>
<tr>
<td></td>
<td>Cognitive Psychology</td>
<td>Personality and Social Psychology</td>
</tr>
<tr>
<td>Year 3</td>
<td>Research Methods for Human Inquiry</td>
<td>Principles of Neuroscience</td>
</tr>
<tr>
<td></td>
<td>Psychological Science: Theory and Practice</td>
<td>Developmental Neurobiology</td>
</tr>
</tbody>
</table>

Subjects leading to the major | Major subjects | Science elective subjects to complement the major | Breadth subjects

This is a sample course plan only. Subjects offered may change from year to year. You will be advised of current subject offerings prior to subject selection and enrolment.

The breadth subjects featured in this plan are examples only. You must complete at least four breadth subjects in this degree.
Physics

Study nature at its most fundamental level and develop an understanding of the world’s big questions. In this major, you will learn about matter, energy and how they interact on all scales – from the particles inside the atomic nucleus to the forces that give rise to the structure of the universe. This may lead to future careers in areas of physics including astrophysics, medical physics and synchrotron science, as well as using your physics skills in areas of business and finance.

Physiology

Learn about how the body works, and how cells, organs and the whole body functions. In this major, you will examine disturbances in whole-body systems, such as those relating to the endocrine, cardiovascular, musculoskeletal, developmental and neural control systems. The experimental bases of physiology are emphasised and you will use contemporary techniques to explore questions in physiology. Discoveries in physiology have a broad effect on health and medicine, environmental science, industry, nutrition, exercise and reproductive biology, and you may pursue careers in related areas.

This major is also available in the Bachelor of Biomedicine.

Plant Science

Plants are the primary producer organisms of the world’s ecosystem, upon which all other life is dependent. In this major, you will study macroscopic and microscopic land, marine and freshwater plants, and gain a comprehensive knowledge of plant biology – from cells and molecules to evolution and the environment. You may pursue a career in fields such as agriculture, horticulture, forestry, food technology or conservation.

Sample course plan – Bachelor of Science

Major in Physics

This course plan includes a sample breadth track in Linguistics: Language Structure and Analysis.

| Year 1 | Semester 1 | Physics 1 | Calculus 1 | Chemistry 1 | Intercultural Communication |
| Year 1 | Semester 2 | Physics 2: Physical Science and Technology | Calculus 2 | Chemistry 2 | The Secret Life of Language |
| Year 2 | Semester 1 | Quantum and Thermal Physics | Laboratory and Computational Physics 1 | Linear Algebra | Language in Aboriginal Australia |
| Year 2 | Semester 2 | Special Relativity and Electromagnetism | Vector Calculus | Differential Equations | Language, Society and Culture |
| Year 3 | Semester 1 | Complex Analysis | Quantum Physics | Electrodynamics | First Language Acquisition |
| Year 3 | Semester 2 | Methods of Mathematical Physics | Laboratory and Computational Physics 3 | Sub-Atomic Physics | Discourse and Pragmatics |

Subjects leading to the major

Major subjects

Science elective subjects to complement the major

Breadth subjects

This is a sample course plan only. Subjects offered may change from year to year. You will be advised of current subject offerings prior to subject selection and enrolment.

The breadth subjects featured in this plan are examples only. You must complete at least four breadth subjects in this degree.
Science

Psychology
Develop your understanding of the human mind and human behaviour through scientific study of mental processes. This major provides basic knowledge of psychological concepts and theories in the areas of biological bases of behaviour, cognitive psychology, developmental psychology, sensation and perception, and social psychology. You will also develop your skills in research methodology and data analysis.

This is a pathway to further study and registration as a professional psychologist within many different areas of specialisation. See page 20.

This major is also available in the Bachelor of Arts.

Spatial Systems
Spatial Systems examines the science and technology behind 3D measurement, mapping and visualisation. It is all about capturing, analysing, managing and presenting spatial information, and lies behind storm predictions, search and rescue efforts, Google Maps and Google Earth, GPS and 3D computer visualisations. Our experts and students are working on major projects such as predicting and responding to natural disasters and improving location-based navigation systems. This major leads to careers within one of the fastest-growing IT industries in the world today, and to further study in the Master of Engineering.

This major is also available in the Bachelor of Design.

Zoology
Explore the complexities of animal systems by integrating knowledge from the biology of cells with the behaviour of whole organisms. In this major, you will choose subjects from a range of areas in the biological sciences, including behavioural ecology, reproductive physiology and wildlife and conservation. You will gain practical experience in zoological research and valuable skills for careers in fields such as animal biology, conservation and wildlife management.

Sample course plan – Bachelor of Science

Major in Zoology

This course plan includes a sample breadth track in Politics and International Studies.

Year 1

Semester 1
Biology of Cells and Organisms
Chemistry 1
Famine: The Geography of Scarcity
The Developing World

Semester 2
Genetics and the Evolution of Life
Chemistry 2
Biological of Australian Flora and Fauna
International Politics

Year 2

Semester 1
Animal Structure and Function
Blue Planet: Intro to Marine Environments
Analysis of Biological Data
Development in the 21st Century

Semester 2
Comparative Animal Physiology
Ecology
Data Analysis 1
Politics and the Media

Year 3

Semester 1
Animal Behaviour
Experimental Animal Behaviour
Ecology in Changing Environments
School Experience as Breadth

Semester 2
Field Biology of Australian Wildlife
Applied Ecology
Reproductive Physiology
Communicating Science and Technology

Subjects leading to the major
Major subjects
Science elective subjects to complement the major
Breadth subjects

“I knew I wanted to study psychology – I am so passionate about the field and I knew that I wouldn’t feel satisfied unless I was put in an environment that was going to challenge me. The psychology department is incredible here.”

Satya Piccioni-Grenna (Italy), Bachelor of Science, major in Psychology

This is a sample course plan only. Subjects offered may change from year to year. You will be advised of current subject offerings prior to subject selection and enrolment.

The breadth subjects featured in this plan are examples only. You must complete at least four breadth subjects in this degree.
At Melbourne, the scientific process is every bit as important as the knowledge gained. Studying science equips you with the knowledge and skills you need for a career in a rapidly changing world, and provides access to an astonishing array of careers and professions.

Preparation for a fulfilling career

The Bachelor of Science prepares you for a fulfilling career and gives you the skills you need to be successful in the workplace, including problem solving and logical thinking.

You will develop specialised knowledge in your major area of study, along with a broad understanding of other scientific disciplines.

Where can a Bachelor of Science take you?

Many of our graduates work, study and collaborate with professionals all over the world. Melbourne researchers work with research laboratories in the US, Germany, Japan, the UK and China, to name a few.

The University’s Science graduates find employment in a wide range of companies. Some of our recent graduates are employed at:

- Accenture Australia
- Arup
- Baker IDI Heart and Diabetes Institute
- Bureau of Meteorology
- Burnet Institute
- Commonwealth Bank
- Deloitte
- Golder Associates
- Google
- IBM
- IMC Pacific
- Murdoch Children’s Research Institute
- Optiver
- Palantir
- PwC
- Teach for Australia
- Walter and Eliza Hall Institute (WEHI).

During her third year of the Bachelor of Science – specialising in discrete mathematics and operations research through the Mathematics and Statistics major – Jessie McKinnon worked in the Coles Supply Chain Optimisation team for her Science internship subject. She became fascinated by the practical application of mathematics for modelling and forecasting product flow, and so impressed her hosts that she was offered a permanent systems analyst position with Coles.
Science student experience

The Faculty of Science and the University of Melbourne have lots on offer for our students, both on and off campus.

Study abroad and exchange
All Bachelor of Science students have the chance to complete part of their degree overseas, either as an exchange student or a study abroad student.

Studying overseas will add an international perspective to your degree, giving you an academic and professional edge. You’ll immerse yourself in a new culture, meet new friends and potentially learn a new language — all while fulfilling requirements for your degree.

We offer a range of grants and other funding options to help you enjoy the benefits of overseas study.

mobility.unimelb.edu.au/outbound

Internships and work placements
In the Bachelor of Science, you will have the opportunity to complete an internship or work placement locally or even internationally. Internships provide you with the opportunity to combine the academic knowledge and skills you develop in your course with genuine work experience in an area that is relevant to you. The placements will draw on your specific science discipline skills and provide opportunities to explore the broader application of science and technology in the workplace.

Industry seminars and events
The Faculty of Science hosts Science Career Conversations, an annual industry and career seminar series that brings together guests from a range of industries to talk about their experiences and share insights. Past panelists include representatives from IBM, Optiver, Arup, EPA, Merck Millipore, the Bureau of Meteorology, the Department of Environment, Land, Water and Planning (DELWP), Deloitte, CSL and the Burnet Institute.

Mentoring
You will have the opportunity to connect with an industry mentor who will share their experience of transitioning to work, advise you on career options and help you build your professional network.

Science Festival
Science Festival is the Faculty of Science’s celebration of National Science Week, held in August each year. Past highlights include film screenings, renowned keynote speakers, trivia nights, take-home garden horticulture workshops, speed networking, industry panels and the ever-popular liquid nitrogen ice-cream demo and tasting. Bachelor of Science students are encouraged to get involved and have fun! You can take it all in as an attendee, or jump in right from the start – organising an event will help you make friends, build contacts and strengthen your leadership skills.

Startup support
The Melbourne Accelerator Program is the University’s startup incubator, offering mentorship, seed funding and support to nurture our student and graduate entrepreneurs. For more information, visit themap.co

Volunteering opportunities
Volunteering while studying can extend your learning opportunities, connect you with the community and help you to develop both personally and professionally. It is a great way to give back and share your science knowledge and experiences.

The In2science program places university students studying science, technology, engineering and maths into Year 8 and 9 classes as peer mentors. Mentors work as role models to encourage high school students to relate science and maths to their real lives and interests, while building communication skills and experience at the same time.

On campus, you can become part of the ambassador and mentoring programs offered by the faculty and the University.
Studies in engineering

Study at Australia’s number one school for engineering and technology.

—

Be in demand
Qualified engineers are in high demand. As an engineering graduate you’re assured of a vast range of interesting and well paid employment opportunities around the world.

How to study engineering at Melbourne
To become a professionally accredited engineer you’ll complete a three-year undergraduate degree with an engineering major or sequence, followed by a two-year Master of Engineering at the Melbourne School of Engineering.

There are nine engineering systems majors available to you in the Bachelor of Science, providing you a broad and flexible pathway for studying engineering in a wider scientific context.

Professional recognition
The Master of Engineering is the first degree in Australia to be accredited by both Engineers Australia and EUR-ACE® in Europe.

How to study engineering through the Bachelor of Science – school leavers

<table>
<thead>
<tr>
<th>Step 1: Choose a major (3 years)</th>
<th>Step 2: Further study (2 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioengineering Systems</td>
<td>Master of Engineering OR Master of Engineering (with Business)</td>
</tr>
<tr>
<td>Chemical Systems</td>
<td>Employment as a professional (accredited) engineer</td>
</tr>
<tr>
<td>Civil Systems</td>
<td>Electrical Systems</td>
</tr>
<tr>
<td>Computing and Software Systems</td>
<td>Environmental Engineering Systems</td>
</tr>
<tr>
<td></td>
<td>Spatial Systems</td>
</tr>
<tr>
<td></td>
<td>Mechanical Systems</td>
</tr>
<tr>
<td></td>
<td>Mechatronic Systems</td>
</tr>
</tbody>
</table>

“I’ve been fascinated and inspired by innovation and science since I was a child. The Bachelor of Science/Master of Engineering structure worked well for me as I knew I wanted to do engineering but I was unsure what specialisation.”

Retno Ayu Widyanti (Australia), Bachelor of Science, major in Electrical Systems, Master of Engineering (Electrical)
### Studies in information technology

The University is Australia’s leading higher education institution for computer science and information systems. Our IT graduates are highly sought after and globally mobile.

---

**IT at Melbourne**

You’ll have flexible options to incorporate IT into your undergraduate course, with pathways to our professionally accredited graduate programs.

**Through the Bachelor of Science**

Four IT majors within the Bachelor of Science offer pathways to a career in IT or to professional graduate study:

- Computing and Software Systems
- Data Science
- Informatics
- Spatial Systems.

**Through the Diploma in Informatics**

The Diploma in Informatics equips you with the transferable IT skills that can boost your employability. It is a pathway to a number of IT graduate study options, including the Master of Information Technology and the Master of Information Systems.

**Be in demand**

IT at Melbourne spans the disciplines of computer science, spatial information, informatics, information systems and software engineering. After studying IT at Melbourne you’ll enter the profession with the technical, analytical and interpersonal skills that employers seek.

---

**How to study information technology through the Bachelor of Science – school leavers**

**Step 1: Choose a major (3 years)**

- Computing and Software Systems
- Data Science
- Informatics
- Spatial Systems

**OR Choose the Diploma in Informatics**

Complete the diploma alongside the degree of your choice. Adds up to one year of study.

**Step 2: Further study (2 years)**

**Master of Data Science**

IT specialisations include:

- Mechatronics
- Software
- Software with Business
- Spatial.

**Master of Engineering**

IT specialisations include:

- Computing
- Distributed Computing
- Spatial.

**Master of Information Systems**

IT specialisations include:

- Bioinformatics
- Computer Science.

**Employment as an IT professional, a spatial expert or a professional (accredited) engineer**

---

Find out more

[cis.unimelb.edu.au/#study](https://cis.unimelb.edu.au/#study)

---

1. #14 in the world for Computer Science and Information Systems. QS World University Rankings by Subject 2017.
2. Bachelor of Science students who select a major in Computing and Software Systems or Informatics or Data Science are not permitted to complete a Diploma in Informatics.
3. The Master of Engineering is accredited by EUR-ACE® and Engineers Australia; the Master of Engineering (Spatial) and the Master of Engineering (Software with Business) are provisionally accredited until sufficient students graduate from the programs. The Master of Engineering is accredited by EUR-ACE®, apart from the Master of Engineering (Software and Software with Business) which are accredited by Euro-Inf®.
4. The Master of Information Systems and Master of Information Technology are accredited by the Australian Computer Society.
Studies in psychology

Psychology is the study of the human mind and behaviour. If working with people and exploring how they think, feel and behave appeals to you, a career in psychology is a great choice.

Psychology at Melbourne

At Melbourne, psychology can be studied as an accredited major sequence within select courses, or as individual breadth subjects in most degrees. No additional prerequisites are required in first year.

Major in Psychology

To complete an Australian Psychology Accreditation Council (APAC) accredited major sequence, you need 125 credit points of study. You can do this through the Bachelor of Science.

Fourth year or honours

The fourth-year program is focused on research and can be undertaken through:

- A Bachelor of Science honours degree – with an APAC-accredited three-year sequence in psychology (or equivalent); or
- The Graduate Diploma in Psychology (Advanced) – open to graduates with a bachelor's degree (or equivalent) that includes an APAC-accredited three-year sequence in psychology (or equivalent).

Both options are accredited by APAC.

Psychology at graduate level

To register as a psychologist in Australia, you must complete the four-year accredited undergraduate honours sequence followed by at least two years of professionally accredited training at masters level, or by two years of supervised practice with a registered psychologist.

If you hold an undergraduate degree in another area of study, you can complete the undergraduate psychology sequence through the Graduate Diploma in Psychology, available full time (one year) or part time (up to three years). This qualification can lead to the Graduate Diploma in Psychology (Advanced) and then to the professionally-accredited Master of Psychology.

Master of Psychology

The Master of Psychology is a two-year program that provides graduates with the skills to work as a professional clinical psychologist or a neuropsychologist. Graduates are eligible for membership of the relevant college of the Australian Psychological Society. We also offer a combined four-year Master of Psychology and PhD program.

Professional recognition

The undergraduate 125 point sequence, honours and postgraduate diplomas and graduate degrees are all accredited by APAC and globally recognised.

Career outcomes

Graduates who pursue in-depth training in psychology (an honours year followed by a professional or graduate research degree) find employment in a number of specialised areas, such as clinical psychology, forensic psychology or sport psychology.

Skills gained through the study of psychology can also be combined with further professional training and lead to careers in other areas, such as marketing, human resources or politics.

How to study psychology through the Bachelor of Science – school leavers

Step 1: Bachelor of Science (3 years)
Complete an accredited major sequence of study in psychology.

Step 2: Honours or a Graduate Diploma in Psychology (Advanced) (1 year)
Honours
Complete an additional fourth-year program through a Bachelor of Science honours degree.

OR

Graduate Diploma in Psychology (Advanced)
A fourth-year program equivalent to honours for students who have completed a three-year major sequence of psychology studies.

Step 3: Master of Psychology (2 years)
Choose the Master of Psychology specialising in Clinical Psychology or Neuropsychology OR the combined Master of Psychology/PhD (four years).

Become a registered psychologist in Australia

Find out more
psychologicalsciences.unimelb.edu.au
Melbourne Chancellor’s Scholarship

The Melbourne Chancellor’s Scholarship is awarded to talented undergraduate students in recognition of their outstanding academic achievement during their Australian Year 12 or International Baccalaureate (IB).

You deserve the rewards

Would you like to begin your Bachelor of Science degree at the University with the security of knowing a graduate place is reserved for you when you finish?

If you’re studying Year 12 in Australia or are an Australian citizen studying an Australian Year 12 or IB overseas, you could be eligible for our Melbourne Chancellor’s Scholarship.

Benefits

For domestic students:

- HECS student contribution exemption for the full duration of a Commonwealth Supported Place in a bachelors degree and a concurrent diploma
- Living allowance for the standard full-time duration of the bachelors degree and concurrent diploma with a value of:
  - $5000 per year if you completed high school in Victoria
  - $10 000 per year if you completed high school outside Victoria
- Melbourne Global Scholars Award of up to $2500 for an approved period of overseas study as an exchange or study abroad student
- Guaranteed international full fee place in a professional masters degree if you meet the prerequisite and entry requirements for the masters degree
- An accommodation place reserved for you close to the Parkville campus in a quality residence for the first year of study. The offer does not include the cost of accommodation.

For international students:

- A 50 per cent tuition fee remission for the standard full-time duration of a bachelors degree
- Melbourne Global Scholars Award of up to $2500 for an approved period of overseas study as an exchange or study abroad student
- Guaranteed international full fee place in a professional masters degree if you meet the prerequisite and entry requirements for the masters degree
- An accommodation place reserved for you close to the Parkville campus in a quality residence for the first year of study. The offer does not include the cost of accommodation.

Eligibility

To be considered for this scholarship, you must:

- Be one of the following:
  - a domestic or international student who completed an Australian Year 12 or the IB in Australia, or
  - an Australian citizen who completed an Australian Year 12 or the IB outside Australia
- Have applied for a University of Melbourne undergraduate course via VTAC for commencement in the year following completion of an Australian Year 12 or IB. Eligible courses are Arts, Biomedicine, Commerce, Design, Music and Science
- Not have previously undertaken any tertiary studies (excluding extension studies completed as part of a Year 12 program).

Selection

The Melbourne Chancellor’s Scholarship is awarded on the basis of merit and guaranteed to all students who satisfy the undergraduate course prerequisites and:

- Achieve an ATAR of at least 99.90, or
- Intend to undertake the Bachelor of Music and achieve an ATAR of at least 99.85 and achieve an audition score of A+, or
- Are of Indigenous Australian descent and achieve an ATAR of at least 90.

Application

Eligible students who have applied for admission to the University via VTAC will be automatically considered.

Outcome

The first offers are made a few days after the Victorian Year 12 ATAR results are released in December. Further offers are made in January and February to students who have completed the IB or Year 12 outside Victoria. Scholarship offers do not represent an offer for admission to a University of Melbourne bachelors degree. Course offers are made separately through VTAC.

chancellorscholars.unimelb.edu.au
Concurrent diplomas

Concurrent diplomas offer another way to develop your interests and discover new opportunities outside of your chosen degree.

Flexible study options
Our diplomas give you many flexible options. You can choose to study a diploma alongside your undergraduate degree (adding a further year of study), or cross-credit some of the study in your undergraduate degree to your diploma and take a ‘fast track’ to completion (potentially completing the diploma in the same time it takes to complete your undergraduate degree). Conditions apply and you should discuss your options with a student adviser once you enrol in your undergraduate degree.

Diploma in Informatics
The Diploma in Informatics will provide you with the IT tools and technologies employers are looking for. It is designed to complement your core studies with fundamental programming and data management skills.

Available to:
Students enrolled in Arts, Biomedicine, Commerce, Design, Music and Science.

Prerequisites
There are no additional prerequisites once you are enrolled in your undergraduate degree.

cis.unimelb.edu.au/study/undergraduate

Diploma in Languages
Languages available: Ancient Greek, Arabic, Chinese, French, German, Hebrew, Indonesian, Italian, Japanese, Latin, Russian and Spanish.

Undergraduate domestic students may be eligible to receive the final 50 points of the diploma HECS free.

Available to:
Students enrolled in Arts, Biomedicine, Commerce, Design, Music and Science.

Prerequisites
There are no additional prerequisites once you are enrolled in your undergraduate degree. Please note: This program is taken concurrently. Students must have a minimum of 50 points remaining in their degree on application.

ba.unimelb.edu.au/enrich/diploma-languages

Diploma in Mathematical Sciences
The Diploma in Mathematical Sciences enables you to gain a mathematics qualification while completing an undergraduate degree.

Domestic students may be eligible to receive the final 50 points of the diploma HECS free.

Available to:
Students enrolled in Arts, Biomedicine, Commerce, Design, Music and Science.

Prerequisites
A study score of 30 in VCE Specialist Mathematics Units 3 and 4 or equivalent, or successful completion of university-level studies equivalent to VCE Specialist Mathematics Units 3 and 4.

courses.science.unimelb.edu.au/study/degrees/diploma-in-mathematical-sciences

Diploma in Music
The Diploma in Music provides you with individual instrumental or vocal tuition, through a sequence of practical, ensemble and elective subjects. It is specially designed for students who are interested in complementing their bachelor's degree with advanced musical training.

Available to:
Students enrolled in Arts, Biomedicine, Commerce, Design and Science.

Prerequisites
Entry is by audition in early February.

mcm.unimelb.edu.au/study/degrees/diploma-in-music

 ба.unimelb.edu.au/enrich/diploma-languages

 cis.unimelb.edu.au/study/undergraduate

 ba.unimelb.edu.au/enrich/diploma-languages

 courses.science.unimelb.edu.au/study/degrees/diploma-in-mathematical-sciences

 mcm.unimelb.edu.au/study/degrees/diploma-in-music

 ● Bachelor of Biomedicine students cannot complete the diploma and the degree within the standard structure and timeframe. Consult your student adviser.

 ● Bachelor of Science students who select a major in Computing and Software Systems or Informatics or Data Science are not permitted to complete a Diploma in Informatics.

 ● Bachelor of Science students who select a major in Mathematics and Statistics or Mathematical Physics or Data Science are not permitted to complete a Diploma in Mathematical Sciences.
Graduate degrees

Graduate study is an investment in your future. Choose Melbourne, and join the best and brightest students to pursue your passion and develop your career.

Invest in your future
We believe that personal satisfaction and career success are inextricably linked. That’s why we encourage you to pursue your passion and become a master of your chosen field through specialist graduate study following your undergraduate degree.

Equipped for leadership
In the competitive global employment market, a graduate qualification sets you apart as someone who is looking to advance and lead, who has the skills and knowledge to succeed. Through graduate study you will learn how to be a leader in your field, and open up a wide range of career opportunities and earning potential.

Graduate study in sciences
The Bachelor of Science provides flexible pathways to a range of graduate programs. A selection of the degrees available is included on the following pages.

Guaranteed entry into graduate degrees

Would you like to begin your undergraduate degree at Melbourne with the security of knowing a graduate place is reserved for you?

Guaranteed entry is available for most graduate degrees, depending on the ATAR/notional ATAR you achieve:

| ATAR of 99.90+ | A guaranteed place in the graduate degree of your choice, subject to meeting the prerequisites. The guarantee applies to our professional entry masters degrees, including the University’s flagship graduate degrees such as the Juris Doctor (Law), Doctor of Medicine and Master of Architecture. No minimum Grade Point Average (GPA) is required in your undergraduate degree. You may also be eligible for the Melbourne Chancellor’s Scholarship for your undergraduate degree – see page 21. |
| ATAR of 96.00–99.85 | A guaranteed place in your choice of a range of graduate degrees, subject to meeting the prerequisites and achieving a Grade Point Average (GPA) of 65% in your undergraduate degree. |
| ATAR below 96.00 | You may be eligible for a range of other guarantees. To see all your options, go to: futurestudents.unimelb.edu.au/guaranteed-entry |

The guaranteed entry pathways above are available to domestic and international students who complete an Australian Year 12 or the International Baccalaureate (IB) Diploma in Australia in 2017. Eligible students must enrol in a University of Melbourne undergraduate degree immediately following Year 12, or be granted a deferral by the University.

Some exclusions apply. See futurestudents.unimelb.edu.au/guaranteed-entry for the list of applicable courses.
Pathways to professional careers

Engineering
See page 18 for more information.

Entry requirements
- A University of Melbourne undergraduate degree in Biomedicine, Design or Science with a relevant engineering systems major or sequence and a weighted average mark of at least H3 (65%), or equivalent, or
- An undergraduate degree in any discipline with a weighted average mark of at least H3 (65%), or equivalent, plus successful completion of relevant science or mathematical subjects.

Students complete a one-year internship following the Doctor of Medicine in order to obtain full registration as a doctor. Doctors can choose to subsequently undertake specialist training.

Law
Entry requirements
- An undergraduate degree in any discipline other than law, or a degree in law from a different legal system.
- Law School Admission Test (LSAT) score and essay.

Students in any other undergraduate degree are also eligible to progress into the 3-year Master of Engineering, subject to completing prerequisite subjects.

Master of Science
Entry requirements
- An undergraduate degree in a relevant discipline with a weighted average mark of at least H3 (65%) in the best 50 points in appropriate discipline studies at third year.

Students complete a one-year internship following the Doctor of Medicine in order to obtain full registration as a doctor. Doctors can choose to subsequently undertake specialist training.

Medicine
Entry requirements
- An undergraduate degree including prerequisite studies in anatomy, physiology and biochemistry at second-year level (or equivalent) within 10 years of commencing the Doctor of Medicine.
- Completion of the Graduate Australian Medical School Admissions Test (GAMSAT). International students residing outside Australia at the time of application may choose to take the Medical College Admissions Test (MCAT) instead of the GAMSAT.
- Shortlisted candidates will be invited for a multi-mini interview.

Students complete a one-year internship following the Doctor of Medicine in order to obtain full registration as a doctor. Doctors can choose to subsequently undertake specialist training.
Physiotherapy

Entry requirements
- An undergraduate degree including approved prerequisite studies in human anatomy and human physiology at second-year level, or equivalent (one subject of each), within the 10 years prior to commencing the Doctor of Physiotherapy.
- Shortlisted candidates will be invited for a multi-mini interview.

futurestudents.unimelb.edu.au/info/research

Research

Entry requirements
- Students aspiring to graduate research can complete either an honours year or a masters degree with a substantial research component equivalent to at least 25 per cent of one year’s full-time study following their undergraduate degree.
- In the Faculty of Medicine, Dentistry and Health Sciences, the minimum entry standard is H1 (80%), or equivalent.

futurestudents.unimelb.edu.au/info/research

Veterinary medicine

Entry requirements
- An undergraduate agriculture, biomedicine or science degree, including at least one semester of study in both general/cellular biology and biochemistry.
- A personal statement including details of relevant work experience (up to 500 words).
- Contact details of 2–3 referees.

fvas.unimelb.edu.au/dvm

Other graduate degrees

Bachelor of Science graduates may also pursue further study through:
- Doctor of Dental Surgery
- Doctor of Optometry
- Master of Biotechnology
- Master of Data Science
- Master of Energy Systems
- Master of Environment
- Master of Environmental Science
- Master of Food Science
- Master of Forest Ecosystem Science
- Master of Geography
- Master of Information Technology
- Master of Nursing Science
- Master of Psychology
- Master of Public Health

Graduate courses in other fields
Graduate degrees outside of the sciences and health sciences fields include:
- Executive Master of Arts
- Master of Architecture
- Master of Journalism
- Master of Teaching
- Master of Urban Planning.

For a full list of our graduate degrees and entry requirements visit:
coursesearch.unimelb.edu.au
Admissions

How to apply

Domestic students
Domestic students applying for an undergraduate course must submit an application through the Victorian Tertiary Admissions Centre (VTAC). Domestic students studying overseas must also apply through VTAC. Full details about the VTAC application process can be found at:

vtac.edu.au

Non-school leaver entry pathway
All applicants to the University must demonstrate academic merit and meet other requirements as part of the application process. As a non-school leaver, you may not have a recent study history and therefore may not meet the standard entry requirements for the course of your choice. The non-school leaver entry pathway provides mature-age applicants and those who are not entering direct from Year 12 an alternative way to demonstrate their eligibility for entry and their likelihood to succeed in their chosen course.

access.unimelb.edu.au/nsl

International students
International students studying the VCE, an Australian Year 12 or IB in Australia must apply through VTAC for Semester 1 entry.

All other international students, including those undertaking foundation studies in Australia, must apply directly to the University or through one of our overseas representatives.

For a step-by-step guide on how to apply, visit:

futurestudents.unimelb.edu.au/admissions/applications

Fees

Domestic students
All domestic undergraduate students are enrolled in a Commonwealth Supported Place (CSP), subsidised by the Australian Government. Payment of the student contribution amount can be deferred through HECS-HELP for eligible students.

International students
Tuition fees are charged for each year that you are enrolled. You will pay tuition fees according to your specific enrolment in any given semester. Detailed fee information, including the fee policy covering your enrolment, will be provided when you are offered a place at the University. For full details about tuition fees, visit:

futurestudents.unimelb.edu.au/admissions/fees

Scholarships
The Melbourne Scholarships Program is one of the most comprehensive and generous in Australia. It recognises outstanding academic achievement and provides access to students who might otherwise be excluded by socio economic, cultural, geographic and other disadvantages.

For more information about scholarships, visit:

scholarships.unimelb.edu.au

Access Melbourne
If you are a domestic student, Access Melbourne can help you gain a place in a course, even if your ATAR is below the Clearly-in Rank. You may even be eligible for guaranteed entry or a scholarship.

You can apply using one or more of the following categories:

- Disadvantaged financial background
- Applicants from rural or isolated areas
- Under-represented schools
- Difficult circumstances
- Disability or medical condition
- Non-English speaking background
- Recognition as an Indigenous Australian
- Mature-age consideration (non-school leaver entry pathway).

Get a guaranteed place
The University has a selection guarantee for eligible applicants who have a disadvantaged financial background or are from a rural or isolated area.

Guaranteed ATARs for 2018 will be published in June 2017 at:

access.unimelb.edu.au

How to apply
Applications for Access Melbourne and Melbourne Access Scholarships are made using the Special Entry Access Scheme (SEAS) application on the VTAC website.

vtac.edu.au/who/seas

Pathway to Science: the Diploma in General Studies

You could be eligible for a guaranteed place in the Bachelor of Science and other University of Melbourne degrees after completing the one-year Diploma in General Studies. The program offers a sample of the University’s bachelors degrees, and provides you with the opportunity to study science, commerce, design or agriculture.

This course is available to domestic students only.

fvas.unimelb.edu.au/study/courses/diploma-in-general-studies

To be eligible for the guarantee you must be eligible for Access Melbourne at the time you apply for the Diploma in General Studies, and achieve certain grades in the diploma. See the website for more information.
Entry requirements

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Bachelor of Science</th>
<th>Science (Melbourne Chancellor’s Scholarship)</th>
<th>Bachelor of Science (Extended)</th>
<th>Diploma in General Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Year 12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic students: 2018 Minimum ATAR</td>
<td>85.00</td>
<td>99.90</td>
<td>50.00</td>
<td>50.00</td>
</tr>
<tr>
<td>Domestic students: 2017 Clearly in Rank</td>
<td>85.00</td>
<td>99.90</td>
<td>NA</td>
<td>50.00</td>
</tr>
<tr>
<td>International students: 2018 Guaranteed ATAR</td>
<td>85.00</td>
<td>99.90</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>VCE (units 3 and 4) prerequisite subjects</td>
<td>A study score of at least 25 in English/English Language/Literature or at least 30 in EAL, and at least 25 in Mathematical Methods or Specialist Mathematics.</td>
<td>Prerequisite subjects apply</td>
<td>A study score of at least 20 in English/English Language/Literature or at least 25 in EAL</td>
<td></td>
</tr>
</tbody>
</table>

International Baccalaureate (IB) Diploma

| International students: 2018 Guaranteed IB score | 31 | 99.90 (notional ATAR) | Prerequisite subjects apply | NA |
| IB prerequisite subjects | English, Mathematics (or Further Mathematics), and one of Biology, Chemistry or Physics; OR English, Mathematics and Further Mathematics | English |

GCE A Levels/Singapore A Levels

| International students: 2018 Guaranteed score | BCC | Not available to A Levels students | NA | Not available to A Levels Students |
| A Level prerequisite subjects | A grade of at least C in Mathematics, one of Biology, Chemistry or Physics and an accepted AS Level English subject | |

Trinity College Foundation Studies

| International students: 2018 Guaranteed score | 80 | Not available to TCFS students | NA | Not available to TCFS students |
| TCFS prerequisite subjects | EAP, English, Mathematics 1, and one of Biology, Chemistry or Physics; OR EAP, English and both Mathematics 1 and Mathematics 2 | |

1. Domestic students: Applicants who achieve the minimum ATAR for a course will be eligible for a place, provided prerequisite studies and any other specific course requirements are met. The Clearly-in Rank may be higher, depending on demand for the course and the number of places available. Only applicants eligible for special entry schemes will be admitted below the minimum ATAR.

2. Students who achieve an ATAR or notional ATAR of 99.90 or above and satisfy course prerequisites will be guaranteed a place in the Bachelor of Science (Melbourne Chancellor’s Scholarship). Students must have completed an Australian Year 12 qualification or the International Baccalaureate (IB) in Australia or be Australian citizens studying an Australian Year 12 or the IB overseas in the year prior to entry. (Students must either enrol immediately or be granted a deferral in the year following Year 12.)

3. International students: The University guarantees admission to a course when an international student achieves the required score, meets prerequisite studies, satisfies the English language requirements and there are still places available in the course at the time of acceptance. If you do not meet the guaranteed score your application will not be considered for entry. Guaranteed scores apply only if no further study has been undertaken after completion of one of these programs. You must be of Aboriginal or Torres Strait Islander descent. See page 5 for more information.

4. Appointers intending to progress to the Doctor of Veterinary Medicine are encouraged to complete VCE Units 3 and 4 in Chemistry or equivalent.

5. For students with English as their second language a pass in English B at the required level will be accepted as satisfying the English prerequisite. Except where specified, IB subjects must be passed to at least Grade 4 Standard or Higher Level. Mathematical Studies is not deemed equivalent to VCE Mathematical Methods.

6. To be eligible for the Bachelor of Science (Extended), you must be of Aboriginal or Torres Strait Islander descent. See page 5 for more information.

7. Satisfactory completion of one of biology, chemistry, physics or mathematics to at least Year 11 level, and English at Year 12 level. Demonstrate the ability to succeed in science study. Non-school leavers, mature-age students and alternative pathway applications will be considered. All eligible applicants will be required to attend an interview.
Open Day
Sunday 20 August 2017
10am—4pm
Parkville and Southbank campuses

Course Information Day
Monday 18 December 2017
Parkville campus

Events near you
futurestudents.unimelb.edu.au/events

Contact us
For information on our courses and entry requirements contact Stop 1
Submit an enquiry online at futurestudents.unimelb.edu.au/contact
Call 13 MELB (13 6352) + 61 3 9035 5511
Visit us at Stop 1 (Parkville):
757 Swanston Street
The University of Melbourne
Victoria 3010 Australia

Connect with us
coursesearch.unimelb.edu.au
facebook.com/unimelb
twitter.com/unimelb
youtube.com/unimelb
instagram.com/unimelb
futurestudents.unimelb.edu.au/contact/brochure
weibo.com/melbourneuni
MelbUni1853
unimelb

Science 2018
Intellectual property
Copyright in this publication is owned by the University and no part of it may be reproduced without the permission of the University.
For further information, refer to: unimelb.edu.au/governance/statutes
Statement on Privacy Policy
When dealing with personal or health information about individuals, the University of Melbourne is obliged to comply with the Information Privacy Act 2000 and the Health Records Act 2001.
For further information, refer to: unimelb.edu.au/governance/compliance/privacy

Disclaimer
The University endeavours to ensure that information contained in this publication is current and correct at the time of printing. However, the University may change details relating to its courses from time to time (such as subjects offered, fees or academic staff). You should not rely on this publication to make any decision about making or accepting any application to study at the University. Before doing so, you should contact the school or faculty directly to ensure that the relevant information is current and correct. This does not affect any rights you may have under the Australian Consumer Law.

Photography:
Casamento Photography, David Hannah Photography, Joe Vittorio Photography and On Location Photography (Sharon Walker).
Authorised by:
Director, External Relations, April 2017
CRICOS Provider Code: 00116K
Printed on paper from responsible sources.