A career in SCIENCE

Make a DIFFERENCE?

Change the world!

Know your Mind? Decide for yourself.
NAU MAI, 
HAERE MAI,
AND WELCOME TO THE FACULTY OF 
SCIENCE AT VICTORIA UNIVERSITY 
OF WELLINGTON

A SCIENCE DEGREE GOES FAR 
BEYOND THE LECTURE THEATRE. 
APPLY YOUR CURiosity TO 
THE MANY LABORATORIES, 
FIELD TRIPS, AND SUMMER 
SCHOLARSHIP OPPORTUNITIES 
OFFERED BY THE FACULTY.

WELLINGTON
SCIENCE CAPITAL 
OF NEW ZEALAND

CAREER-FOCUSED 
CURRICULUM

2020
MORE THAN 
100 
SUMMER 
SCHOLARSHIPS

3,000 + 
STUDENTS
13 RESEARCH 
CENTRES
WORLD-CLASS 
FACILITIES
5 SCHOOLS
24 MAJORS
Number 1 for research quality in New Zealand.

Real-world experience.

Hundreds of unique subject combinations.
Scientists are discoverers looking into the unknown. They have a natural curiosity; always questioning how stuff works, discovering new things, and solving problems. But most importantly, they are future thinkers, ready to tackle the world’s biggest challenges.
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Victoria University of Wellington has been awarded five stars overall in the QS global university ratings. In addition, the University received five stars in each of the eight categories.

Cover and inside cover: Victoria University of Wellington offers students experience both in the field and in the laboratory. Science student Emily Moore collects marine-life samples from Wellington’s South Coast and she and Wallis Greenslade process them at the Victoria University of Wellington Coastal Ecology Laboratory.
Scientists are discoverers looking into the unknown. They have a natural curiosity; always questioning how stuff works, discovering new things, and solving problems. But most importantly, they are future thinkers, ready to tackle the world’s biggest challenges.

Our mission is to educate the next generation of scientists. To do this, we provide an inspiring learning environment with excellent teaching staff who are passionate about science, state-of-the-art facilities, and courses and programmes that are always at the cutting edge of knowledge.

In response to the world’s changing demands, we are investing in creating new programmes in distinctive and emerging areas, many of which are unique to Victoria University. To do this, research is at the core of our teaching and learning, using unparalleled industry knowledge and technology in the content of our lectures and laboratories.

As a Science student at Victoria University of Wellington, you’ll absorb knowledge, observe phenomena, experiment with ideas, and maybe even be part of making new discoveries.

"If you choose to become a Science student at Victoria University of Wellington, you will be joining New Zealand’s top university for science."

Professor Dave Harper
Dean of Science
A flexible degree

It has been said that the most exciting science happens at the boundaries. Combining biology and chemistry will see you well placed to be at the forefront of drug discovery and development. You could combine data science and computer science and be part of the big data revolution. There are hundreds of unique combinations you could choose from.

Science as a minor

A minor requires 60 points of study in one subject, with at least two courses at 200 level and one at 300 level. This might suit someone who wants to develop their scientific knowledge and skills but wants to complement this in another field of study such as Law or Commerce.

Note: All our Science majors can be taken as minors, but Science in Society (see page 53) and Forensic Science (go to www.victoria.ac.nz/forensic-science) are available as minors but not majors.

Double degree

You can combine a Bachelor of Science with another degree such as a Bachelor of Arts or a Bachelor of Laws to become an expert in more than one area. This will take you four or more years to complete.

Double major

At the University, you can specialise in two subjects in your degree qualification to suit your passions and future ambitions.
BACHELOR OF SCIENCE

The Bachelor of Science (BSc) is designed to be flexible, allowing you to tailor your degree plan to explore your passion and skills—and your future career.

Your first year

In your first year, you’re likely to take seven or eight courses from a range of subject areas. There are no core courses common to all majors in this year. However, your BSc must include one course in either Econometrics, Mathematics, Physics, or Statistics, and most students do this in their first year.

Your second year

This year, you’ll start to get down to the detail of your chosen major and have the opportunity to hone your research skills. You’re likely to take six to eight courses this year—three or four courses in your major subject and the remaining courses chosen from your second major, minor subject, and/or other electives. To add variety and depth to your degree, you might take some courses from outside the sciences.

Your third year

In your third year, you’re likely to take three or four courses in your major subject and a further three or four courses that might be your second major, or a mixture of your minor and other electives. You’ll graduate with specialised knowledge in your major, ready to enter the workforce or go on to postgraduate study.

www.victoria.ac.nz/bsc

BACHELOR OF BIOMEDICAL SCIENCE

The Bachelor of Biomedical Science (BBmedSc) will give you a basic understanding of molecular and cell biology, along with the research skills you need to start your career in biomedical science.

Your first year

You’ll study five core 100-level courses that cover the basics of cell biology (how the body is put together), and animal and human physiology (how the body functions). You’ll look at the biology of disease and you’ll study related areas such as Chemistry, Psychology, and Statistics.

Your second year

You’ll build on the foundations of your first year, studying molecular biology and advanced physiology. You’ll do some biochemistry and learn about the genetic make-up of disease.

Your third year

During your third year, you’ll be drawing on the solid understanding you have of the concepts and vocabulary of biomedical science relevant to the clinical practices of current health services. You will have an excellent base for study at medical school or for postgraduate medical and clinical training programmes.

www.victoria.ac.nz/bbmedsc

www.victoria.ac.nz/bbbmedsc
YOUR FUTURE WITH SCIENCE

Throughout your degree, you will gain the essential skills needed to become a science innovator in the evolving job market of the future: you could develop new technologies, treat diseases, protect the environment, or address many other problems that require expert scientific minds.

More than just theories

As a Science student at Victoria University of Wellington, you’ll absorb knowledge, observe phenomena, experiment with ideas, and may even be part of making new discoveries.

By developing skills in collecting, analysing, and understanding data, you’ll be set up for success whatever your next step.

This practical toolkit, combined with skills in independent critical thinking, creativity, and communication, ensures our students are ready to leap into the careers of the future in one of the many exciting fields of science.
Learn from the best

Our staff are world leaders in their fields of research and you’ll benefit from their expertise in lecture theatres and laboratory sessions. Much of their ground-breaking research is carried out in the University’s excellent facilities and out in the field, collaborating with Wellington’s vibrant science community.

Science capital of New Zealand

Wellington is the hub of science innovation in New Zealand. Home to many national organisations and the highest concentration of science organisations in New Zealand, our capital city places the University at the heart of scientific discovery.

Our close connections with the science community provide our students with opportunities for research placements and summer scholarships and will position you among academics who are key voices in significant science debates, discussions, and discoveries.

Sought-after graduates

The skills you learn and attributes you gain within your Science degree are sought after by employers from many different industries. By studying Science at Victoria University of Wellington, you’ll learn how to:

- perform practical laboratory work
- collect and analyse data
- communicate effectively in verbal and written forms
- carry out research
- think critically and problem-solve.

The University’s science graduates can be confident the skills they acquire during their studies will boost their employability in a competitive market.

Growing job market

With New Zealand’s current focus on science and innovation, science graduates are in demand. According to the Ministry of Business, Innovation and Employment (MBIE), employment opportunities in science are expected to continue growing at more than 3 percent out to 2026. Several science occupations feature on the Ministry’s long-term skills shortage lists.

It is estimated that 75 percent of the fastest growing occupations require STEM (science, technology, engineering, and mathematics) skills and knowledge, according to a report by the Australian Industry Group.

Number of past, current, and projected scientists employed in New Zealand

Sources: Statistics NZ Census and MBIE projections

Careers beyond the lab

Studying Science doesn’t necessarily mean working in a lab. A Science degree opens doors to many careers that aren’t research-based, but are still connected to science.

Read more about the majors we offer and check out some of the different career pathways a degree in Science could set you up for.
Biomedical Science and Ecology, Evolution and Behaviour at Victoria University of Wellington were ranked first nationally in the 2018 QS World University Rankings.
Discover the science of life

Biology at Victoria University of Wellington is studied in two main areas: Ecology and Biodiversity, and Cell and Molecular Bioscience.

The recent advances in cell and molecular biology and the rising interest in biodiversity, conservation, and the impact of humans on the natural world have placed biologists at the forefront of science discovery worldwide. From genomics and proteomics, to physiology, ecology, and evolution, the future of biology is rapidly growing and constantly changing. There isn’t a better place to be a part of this than at New Zealand’s top school of biological sciences, at Victoria University of Wellington.

- We rank first nationally for research quality in Biomedical Science and Ecology, Evolution and Behaviour, and first equal in Molecular, Cellular, and Whole Organism Biology in the 2012 Performance-Based Research Fund.

- There are two undergraduate degrees offered by the School of Biological Sciences: a Bachelor of Science and a Bachelor of Biomedical Science.

www.victoria.ac.nz/sbs

Explore the field

In just minutes, you can escape our compact city life to explore our varied biodiversity—discover more than 76 kilometres of accessible coastline, traverse acres of native bush, or encounter wildlife at eco-sanctuary Zealandia, Wellington Zoo, or simply in the great outdoors.

We urge our students to explore New Zealand’s varied biodiversity through field courses in this natural laboratory. So whether it is the ocean, mountains, plants, or wildlife that excites you, our undergraduate field courses appeal to all nature lovers.

Our strengths

The School’s areas of strength include biomedical science, biotechnology, clinical research, conservation biology, drug discovery, ecology, marine biology, molecular evolution, and systems biology.

The University’s academics in these areas are considered some of the best researchers in New Zealand in topics including cell biology, drug discovery and development, conservation biology, ecological restoration, and marine biology.

Our facilities

The University’s purpose-built science building—Te Toki a Rata—has 12,000 square metres of modern biological sciences teaching, research, and laboratory facilities.

We have an award-winning coastal ecology laboratory, fully equipped with two research vessels.

We have multimillion dollar state-of-the-art chemical genetics and proteomics facilities.
Biological science is the study of how living organisms work. If you major in Biology, you will learn to apply this knowledge of living things to make life better for humans and help the environment.

The study of biology impacts all aspects of modern life. This means that the field of biology crosses over into many fields of study, such as commerce, ethics, law, and philosophy. At Victoria University of Wellington, you’ll have the opportunity to debate cultural, environmental, and ethical issues as you gain new scientific knowledge and perspective.

Majoring in Biology enables you to take a selection of courses from the biological sciences and provides a broad grounding in the subject. It is a great option if you want to combine your passion with another major in the BSc, or with another degree such as a Bachelor of Commerce or a Bachelor of Laws.

What you might study

Find out where living organisms come from and how they develop and work. You might study how organisms consume energy and pass on their genes, or learn about cell biology, plant biology, animal biology, and statistics.

“There are very few universities around the world so well positioned as a living laboratory for ecology and conservation. With an eco-sanctuary within walking distance, a marine sanctuary at the doorstep of our lab, and government agencies just a stone’s throw away, I can’t think of anywhere better to learn about New Zealand’s ecology and biodiversity.”

Phil Lester
Professor in Insect Ecology

Where biology can take you

New Zealand’s economy is dependent on industries where understanding biology in a broad sense is essential, making a biology degree a huge asset. Employers are increasingly seeking critical thinking, problem-defining, and problem-solving skills that are honed through the study of biology.
Biotechnology is the application of science and technology to living organisms, and is closely aligned with biomedical science, which focuses on human health and disease. Although it’s a field that has been studied for decades, its incredible potential is only just being discovered by researchers and industry.

Learn about molecular biology and the uses of biotechnology, while considering the commercial, legal, and political implications of bringing new developments to the marketplace. Learn to think critically about related issues such as gene patents, genetically modified organisms, and the cost of drugs.

With this major, you have the opportunity to work at a technical level within a laboratory or industrial setting.

In addition to a sound scientific education, you will consider cultural and ethical issues and be introduced to aspects of commercial and patent law.

What you might study

You can specialise in areas such as bioactive compounds, protein and nucleic acid biotechnology, and bioprocessing and microbial biotechnology.

“Biotechnology can provide solutions to many of the problems that we are facing today. I would like to work in crop development to help make farming more sustainable and to make crops more suited to our changing climate.”

Ruby Parker
Student, Bachelor of Science in Biotechnology and Cell and Molecular Bioscience

Where biotechnology can take you

As a biotechnologist, you could work in horticulture to develop novel crops or you might enter the pharmaceutical industry to invent new medical treatments. A biotechnology degree could also be valuable to someone wishing to become a patent lawyer, a company chief executive officer, or a science communicator.
A mixture of enthusiastic science teachers at high school and a drive to use biology to help others saw Tama Te Kawa choose Biotechnology and Cell and Molecular Bioscience when he arrived at university.

“I have really enjoyed both majors,” he says. “Although I have always been fascinated by biology in a broad sense, learning about how to apply this knowledge to help others is what sets biotechnology apart for me.”

Throughout the past three years, Tama has found the courses to be a constant source of interest and really enjoyed the hands-on approach. “The lecturers have also been very kind and helpful. They are always open to conversation and very receptive to feedback.

“While university can be hard work, it’s also enjoyable. Studying here has given me the opportunity to make close friends, who support me and each other. It has also helped me discover what I enjoy doing and what I want to spend my time doing after study.”

Tama is planning on pursuing a Master of Science in Biotechnology. “I see myself possibly working with microorganisms and exploiting their functions to improve industrial production or the environment.”
If you’re interested in how cells function and the molecules that make them up, and can see yourself leading the way in science innovation and enterprise, then cell and molecular bioscience is the right choice for you.

Cell and molecular bioscience covers the areas of biochemistry and molecular biology (the science of living organisms at the molecular level), cell biology (the structure and interactive function of cells in animals, plants, and bacteria), genetics (the structure, function, and regulation of genetic material), physiology and pharmacology (the integrated function of human organ systems, cellular physiology, and the effect of drugs), and chemical genetics (discovery, synthesis, and use of small compounds coupled with genetic interaction analysis to understand cell networks).

Be part of one of the most exciting areas in modern science. Researchers at Victoria University of Wellington are currently working to find a treatment for the progressive form of multiple sclerosis through processes of immunology and repurposing drugs.

**What you might study**

Take a look at cell biology, genetics, and chemical genetics, and study living organisms at the molecular level. Get an introduction to physiology and pharmacology and learn about human organs and organ systems.

“The Cell and Molecular Bioscience programme at Victoria University of Wellington is unique. Our students get a really broad understanding of how a cell works—from the functioning of cells within whole organisms to the intricacies of molecular genetics. I love seeing my students when they figure out how a cell works, or what has gone wrong in a particular disease process.”

*Dr Melanie McConnell*

*Lecturer in Genetics and Cell Biology*

**Where cell and molecular bioscience can take you**

Cell and molecular bioscience is a wide-reaching area of scientific research that can open up a range of career options, and graduates are highly sought after. You may pursue a career in the pharmaceutical industry, developing next-generation therapeutics and stem cell therapies to support the transfer of research from the bench to the bed side. You may also apply your knowledge alongside another degree, such as biomedical science, to develop new products or address biological issues.
Ecology and biodiversity unite the subject of ecology—the interactions of living things and their environment—with the study of the animals and plants and microorganisms that make up various distinctive communities.

Many parts of the world are facing unprecedented problems resulting from human activities, including biosecurity threats, polluted land and waterways, soil salinisation, ocean acidification, and changes to the global climate. Ecologists are among those at the forefront, working to address these problems.

Studying in Wellington offers access to some unique centres of native biodiversity, including Kapiti Island Nature Reserve and Zealandia, the urban wildlife sanctuary in Karori.

What you might study
The major in Ecology and Biodiversity focuses on areas of plant, animal, and ecosystem diversity and function. You’ll explore topics including physical and biological processes in ecology, genetics and molecular biology, statistics, plant ecology and conservation, animal ecology and behaviour, and evolution.

“Last summer, I was part of a project that researched preferences in skink habitat selection. It involved data collection during the month-long stay on an isolated island, as well as analysis and a final report. I loved every minute of it.”

Cora McCauley
Student, Bachelor of Science in Ecology and Biodiversity and Marine Biology

Where ecology and biodiversity can take you
With the world’s attention on the state of the planet, the need for people to understand and manage living things and their interactions with people is growing.

Ecology and biodiversity are growing areas of employment in New Zealand and overseas. Positions may be found with the Department of Conservation, the Environmental Protection Agency, Landcare Research, the Ministry for the Environment, and Plant and Food Research. Local and regional councils and iwi regularly seek people skilled in the areas of ecology and biodiversity.
Everyone has a part to play in preserving the environment, says Sian Moffitt, who is committed to doing just that for future generations through conservation work.

Sian says that she has enjoyed the varied coursework of her degree. “In one of my courses I had a week-long field trip to St Arnaud, Nelson Lakes, where we were supported to undertake fieldwork in groups. We came up with our own projects and figured out how to test hypotheses in the field. It was hugely helpful—I learnt a lot about both geography and biology.”

A believer in experiencing nature in your own way, Sian says, “The more people who get out there now and experience a passion for nature for themselves, the more value people will see in our environment and protecting it for future generations.”

This attitude as a young environmental leader saw Sian become the first recipient of the Forest and Bird Undergraduate Scholarship. The scholarship is awarded to school leavers who undertake their studies in Ecology and Biodiversity at Victoria University of Wellington, in conjunction with the Centre for Biodiversity and Restoration Ecology. She is the national coordinator of Forest and Bird Youth and participates in Victoria Plus, Places for Penguins, and the Society for Conservation Biology.

“I’m thinking about taking a Master of Conservation Biology, and in the future I can see myself working for the Department of Conservation or Forest and Bird, or even in environmental education or ecotourism.”
Marine biology is the study of life in the sea—the organisms that live in the world’s oceans and how they interact with one another and their physical and chemical environment.

Learn at one of the leading centres for marine biology research in New Zealand. Explore the waters around New Zealand—one of the most extraordinary and unspoilt marine ecosystems in the world—and take advantage of the many kilometres of easily accessible coastline around Wellington.

Study at our dedicated state-of-the-art marine field station, the Coastal Ecology Laboratory, and benefit from our marine biology links with several other New Zealand and international universities and close ties with many local public sector organisations including NIWA, the Ministry for Primary Industries, and the Department of Conservation. These links will help connect your studies to the real world.

What you might study

Students are introduced to the diversity and physiology of marine organisms, the structure and function of marine ecosystems, and marine conservation issues.

You will gain an understanding of the marine environment through significant field studies and learn about marine resources through the study of aquaculture and fisheries, Antarctic sea ice and plankton ecology, coral reef biology and ecology, global climate change impacts, and population genetics of marine animals.

“I’ve always had a fascination with the strange and amazing life in the sea. I was drawn to marine biology to have an exciting field-based career and to conserve these incredibly important marine ecosystems.”

Rob Lewis
Student, Bachelor of Science in Marine Biology and Ecology and Biodiversity

Where marine biology can take you

With so much ocean for us to govern, qualified marine biologists are essential to understanding how we use and protect its resources. Growing employment opportunities exist right in our backyard, with institutions and groups such as the Cawthron Institute, the Ministry for Primary Industries, NIWA, iwi, and regional and local councils.

A BSc in Marine Biology is ideal for work in areas such as ecotourism, environmental sciences, fisheries, marine biodiversity and ecology, marine conservation (in which New Zealand is a world leader), marine law, and public policy.
Victoria University of Wellington’s Bachelor of Biomedical Science (BBmedSc) is a three-year degree that helps students develop the skills to embark on a range of rapidly developing scientific research careers that explore phenomena like these, and to be engaged at the front line of discovering vital medical developments, technology, and knowledge to understand and treat healthcare problems and diseases.

You’ll study the relationship between humans, health, and disease, from researching genetics, neuroscience, and reproduction to understanding the cellular and molecular structure of a disease and searching for cures.

Throughout your degree, you’ll look at real-life health, and medical issues and gain first-hand experience of biomedical and clinical research through the University’s close relationship with the Capital and Coast District Health Board, the Ferrier Research Institute, and the Malaghan Institute of Medical Research.

**Human Genetics**

If you’re interested in syndromes and diseases of genetic origin, ageing, human fertility, and genetic counselling, then Human Genetics is right for you.

A major in Human Genetics covers aspects of the science of human genetics, including the study of the human genome, epigenetics, the molecular basis and treatment of disease, evolutionary genomics, molecular biology, and recombinant DNA technology.

**Where human genetics can take you**

Our ability to care for the sick and support the healthy is made greater by our understanding of the human genome. A qualification in human genetics can lead to career paths such as genetic counselling, fertility treatment, and health research.

**Molecular Pathology**

This major is an introduction to the molecular basis of disease. You’ll focus on the organs of the body and the cellular changes that occur in cells, tissues, and organs within the body when humans become ill.

You will learn about ways that biomedical research can be used to detect disease, prevent the spread of disease, and reduce and repair damage caused by disease. You will learn about the microorganisms that can lead to disease and how the immune system fights against, and sometimes causes, disease.

**Where molecular pathology can take you**

The emphasis is on understanding the changes in structure and function within the body that occur when humans succumb to illnesses. This major will suit students interested in the relationship between health and disease, in clinical biochemistry, microbiology, immunology, neuroscience, and forensics.
Molecular Pharmacology and Medicinal Chemistry

If you’re interested in both chemistry and biology and how substances are delivered through, and dealt with, by the body, then the Molecular Pharmacology and Medicinal Chemistry major is right for you.

Your study will focus on aspects of chemistry in relation to our bodies. How we treat disease relies on how we understand disease: what causes it, and how the body fights it. You’ll learn about modern chemical methods for the synthesis of drugs and how they work within a living system.

Where molecular pharmacology and medicinal chemistry can take you

A BBmedSc in Molecular Pharmacology and Medicinal Chemistry is an important first step to pursuing a career in drug discovery or pharmaceuticals. You could work in research and development for a large multinational company such as Bayer, or combine your degree with law to become a patent lawyer.

Alinor Rose has always been interested in science, especially anything to do with human health, so a biomedical science degree at the University was a perfect match for her.

“Victoria University of Wellington is a well-respected university and a biomedical degree is a gateway into so many scientific fields. The fact that it would give me a lot of options at the end of the degree was definitely appealing when I was choosing my path of study; I knew I would be able to carry on with further study, or jump straight into the workforce.

“I had the most amazing opportunity to do a three-month summer scholarship at the Malaghan Institute of Medical Research last summer. There are so many things about that experience that I value. It reinforced all the lab skills I had learned during my degree while also opening my eyes to what a career in science could look like. It inspired me and has just continued to fuel my love for research.”

When Alinor started her degree, she had no idea what postgraduate study was. In fact, when someone mentioned scientific research, she would think of a person in a white lab coat, holding up a vial of crimson liquid. “Now, I can’t imagine a future without further study and I can’t wait to start a Master of Biomedical Science.”
We rank first for research quality in chemistry and physics in New Zealand (Performance-Based Research Fund Quality Evaluation 2012).
SCHOOL OF
CHEMICAL AND PHYSICAL SCIENCES
TE WĀNANGA MATŪ

Make your big discovery

Physics and chemistry are the disciplines that form the basis of our technological society and underpin many other branches of science.

Imagine converting sunlight into enough energy to power the world, or building the next generation of electronics, atom by atom. Contribute to the international effort by Victoria University of Wellington’s chemists and physicists to understand how things work. Create knowledge that can have real-world impact in a variety of industries, including electronics, energy, the environment, medicine, and transport.

Unlike other universities in New Zealand, Victoria University of Wellington’s expertise in chemistry and physics is complemented by being located in one school. This facilitates interactions between the disciplines and strengthens key areas such as materials science research.

More information is available at: www.victoria.ac.nz/scps

Our strengths

- The School interacts closely with a number of the nation’s leading research institutes such as Callaghan Innovation, the Ferrier Research Institute, GNS Science, NIWA, and the Robinson Research Institute.
- The relationships between undergraduates and research students provide an invaluable learning experience where students can develop and apply their knowledge with peers.
- Our alumni and faculty members are often awarded prestigious national and international science awards. Notably, in 2000, Victoria University of Wellington alumnus Professor Alan MacDiarmid was awarded the Nobel Prize in Chemistry.

Our facilities

The School is housed in the Laby building on the Kelburn campus and occupies specialised new laboratories in the adjoining Alan MacDiarmid building.

Undergraduates have access to modern research equipment, including nuclear magnetic resonance spectrometers, ultrafast- and Raman-laser equipment, clean-room facilities for fabrication of electronic devices, and an electron-microscope suite.

Experience isn’t essential

For those without sufficient NCEA Chemistry and Mathematics credits, introductory courses are available in Trimester 3 (in the summer before your first year) and in Trimester 1. The points gained from these courses count towards your degree.
Understanding chemistry is important in many other branches of science, which is why it’s often described as ‘the central science’. Chemistry is the basis of the creation of new materials, medicines, consumer products, and technologies, and is behind important areas of global development impacting our world, including the development of nanomaterials and nanotechnologies.

A first step towards a career in chemistry is joining Victoria University of Wellington’s innovative, interactive, and research-led environment. You’ll learn from internationally renowned researchers who will teach you how to question and think, and analyse and solve problems.

If you want to understand why things behave the way they do, and you enjoy practical hands-on work, then chemistry is right for you.

**CHEMISTRY**

Chemistry is all around you. It is the essence of your body, your clothing, your food, the building you’re in, the devices you use—even the air you breathe.

“I really enjoyed studying Chemistry, in particular the problem-solving aspects involved. My undergraduate study made the decision to pursue an Honours degree easy, as I was fully aware of the skills and knowledge that all of my lecturers had to pass on.”

Matthew Brett
Student, Bachelor of Science with Honours in Chemistry

Where chemistry can take you

A Chemistry graduate is not limited to lab work, though there certainly is demand for this in the fields of chemical analysis and product development. After graduating from Victoria University of Wellington, you will find that chemists are also highly sought after in process optimisation, production management, process and environmental monitoring, and quality assurance.

What you might study

Chemistry is a pivotal science and provides comprehensive knowledge and skills covering theory, practical laboratory courses, and applications. Learn about the molecules of life, the principles behind their behaviour, and how they interact with each other. Find out how this knowledge is being used in the development of new medicines and to create new molecules and synthetic materials.

You will gain hands-on experience and practical skills in analytical chemistry when you’re working in the lab and in small study groups where you’ll brainstorm, collect, and interpret data.
Originally starting off with a single major in Geology, Yvonne Booysen opted to take a 100-level Chemistry course out of interest, which saw her rethink the direction of her degree.

“The teaching staff of this course were quick to take me under their wing and they gave me the confidence boost I needed to pursue Chemistry as part of a double major.

“There is a strong practical element to the chemistry courses, which provides a really good foundation for either postgraduate study or industry. The highlight of my degree was the two third-year laboratory courses, where you get a chance to apply the knowledge and research skills gained in earlier years of study. One of these courses involved a six-week-long placement in a functioning research lab, which was incredible.”

Yvonne had the opportunity to undertake two summer research scholarships, which she found to be great for gaining a taste for both research and the regularity of a nine-to-five job. “This really helped to ease the transition into the post-university world.”

Her advice for future students: “Your professors and tutors are there to help you. Don’t be intimidated by a subject that seems harder than others—there is so much support at university if you seek it out, and everyone wants to see you succeed.”
Study the universe from the smallest parts of an atom to the largest limits of the cosmos.

Physics examines matter and energy in all forms, from the kinetic energy of a speeding car to the nuclear energy released by fusion in the core of a star.

The concepts you learn can be applied to astronomical, biological, chemical, electrical, magnetic, and mechanical situations. Our courses cover the application of physics to the environment, energy issues, electronics, and modern-materials science. You will be able to work with equipment such as lasers and semiconductors and delve into areas including nanoscience and quantum optics.

Collaborative research projects with Chemistry staff within our School, Biology and Engineering staff from outside the School, Crown research institutes, Wellington Hospital, and national and international astrophysics consortia leave our students ready to take on the challenges that are facing the world.

Applied Physics

Applied Physics focuses on how the concepts and techniques of physics can be used in technology. Explore examples such as lasers, semiconductors, nanoscience, and quantum optics.

If you want an understanding of physics that will prepare you to develop tomorrow’s advanced technologies and new industries, Applied Physics is right for you.

What you might study

A Physics degree from Victoria University of Wellington will provide you with a thorough grounding in all aspects of physics, including classical mechanics, relativity, electromagnetism, quantum physics, and thermal physics.

In Classical Physics, you’ll study the fundamental theories developed by pioneering physicists such as Newton, Galileo, Faraday, and Maxwell. In Modern Physics, you’ll explore the current understanding of interactions of matter, time, and space, delving into quantum mechanics and relativity.

Where physics can take you

The principles of physics are essential in many applied disciplines such as architecture, engineering, environmental studies, and information technology. The critical thinking and problem-solving skills developed during a degree in physics are highly valued in any workplace. You’ll have a diverse range of career options, from fundamental physics research to analyst and consultant roles in both the public and private sector.

Our Physics graduates are also employed in technology-focused companies (in management, or in research and development), governmental laboratories, hospitals (as medical physicists), traffic and aviation engineering, and teaching, and some move into related fields such as environmental or earth science, meteorology, computing, and more.
Growing up in Whanganui, Tane Butler was always inquisitive about the natural world and wanted to understand its many phenomena, so studying science was definitely on the cards for him.

When he came to Victoria University of Wellington, he decided to pursue physics and mathematics to learn how to think analytically. “During my degree I was given the opportunity to complete a three-month summer research scholarship at the Robinson Research Institute. The Robinson Research Institute is a world-leading institute in superconductivity research, which we have right here at the University. After the three months, the Institute offered me a job growing and characterising magnetic thin films for spintronic devices,” Tane says.

Tane is now undertaking postgraduate research and acknowledges that the support he received during his Bachelor’s degree was a big part of this decision. “The Āwhina whānau was amazing during my studies. It’s a great way to engage with other students through mentoring, collaborative study sessions, and wider-community outreach projects. I definitely wouldn’t be where I am today without Āwhina.”
Our subjects are nationally and globally ranked.
Unearth your passion

Our teaching and research programmes are anchored in a passion for planet Earth and the geological, environmental, and social processes that affect the world around us.

Whether it’s studying volcanoes in the South American Andes, the shakes of the Kekerengu Fault, or questioning the way that cities are built for different cultures, our staff and students are working to understand the matters that most affect our planet.

We examine how the planet works and how people interact with, and modify, the planet and its resources. We are one of New Zealand’s leading voices in the race to understand and address climate change.

If big problems like these often cross your mind, studying at Victoria University of Wellington will help you acquire a deeper understanding of the connections between the environment, society, and the economy throughout New Zealand and across the globe.

Our strengths

- Victoria University of Wellington is ranked first in New Zealand for research quality in the School’s two core disciplines, Earth Sciences and Geography (Performance-Based Research Fund Quality Evaluation 2012).
- Development Studies and Geography at Victoria University of Wellington are ranked in the top 100 in the 2018 QS World Rankings.
- The School covers the spectrum of earth and environment studies, from fundamental sciences to present processes and issues, and the impact that these processes have on people.
- The School’s staff members are highly acclaimed for their excellence in teaching and research, and are key voices in significant science discoveries in the media, from the effects of climate change to responding to the Christchurch and Kaikoura earthquakes.

Our field activities

Fieldwork is central to much of the School’s teaching and research. Our students experience first-hand a fascinating range of urban, rural, and remote environments. We are situated within easy access of the volcanic plateau to the north, glaciated landscapes to the south, and many other geological, geographic, and climatic features throughout New Zealand. Our field activities take students across the globe, visiting the Pacific, Latin America, Antarctica, and beyond.

Our facilities

The School has a state-of-the-art geochemistry laboratory and electron microprobe facility, labs for geochronological research, sedimentological and groundwater analytical equipment, and sophisticated geophysical field instruments.

www.victoria.ac.nz/sgees
Victoria University of Wellington is the only university in New Zealand offering an undergraduate major in Development Studies. It is a multidisciplinary programme that investigates why there are vast differences in living standards; how the inequalities between, and within, countries occur; and considers the possible solutions to reducing poverty and promoting greater equality.

Because Development Studies investigates the world and its inhabitants, we encourage our students to live curiously and feel confident taking on global problems. We believe in the exploration of our world, and participating in a Victoria Abroad exchange programme to another country can provide insight into another culture and complement your Development Studies degree.

**What you might study**

The United Nations’ sustainable development goals will be a major feature of your studies. The goals set out 15 years of global action aimed at alleviating or eliminating poverty, improving literacy rates, improving access to education, and addressing health issues such as life expectancy and maternal mortality.

“Victoria University of Wellington has let my curious mind run free—my research is built on storytelling, on silences and whispers, on strong connections and collective action, on cultural pride and self-empowerment.”

Lorena de la Torre Parra
Candidate, Doctor of Philosophy in Development Studies

**Where development studies can take you**

The connections and experience that a qualification in development studies provides can create opportunities to work for governmental or non-governmental agencies around the world. You could work in the Pacific Islands supporting nations dealing with the effects of climate change or you could work in an African nation improving access to education.

Graduates find employment in many diverse and interesting fields, including New Zealand’s aid programme within the Ministry of Foreign Affairs and Trade, and in non-governmental organisations such as Caritas, Oxfam, Save the Children, Tearfund, Volunteer Service Abroad, and World Vision.
Climate change, resource management, and biodiversity are growing concerns that require skilled professionals to research, monitor, analyse, and communicate with the public. Learn the science behind environmental issues, and find out how to look for solutions to make sure the planet is sustainable for future generations.

The Environmental Science major is taught across the Faculty of Science and is taken in partnership with another major chosen from Biological Sciences, Chemistry, Geology, Geophysics, Mathematics, Physical Geography, Physics, or Statistics.

You’ll be able to take advantage of teaching and research input from the University’s own Climate Change Research Institute and Antarctic Research Centre, as well as from local Crown research institute staff.

**What you might study**

At Victoria University of Wellington, you’ll get hands-on experience. As you progress through your study, you’ll have the opportunity to develop your own projects, analyse your own data, and present your results. You will cover a range of topics, including environmental health, tropical climates, and understanding paleoenvironments.

“Victoria University of Wellington is such an exciting place to study climate and environmental science. From the South Island alpine glaciers and rivers to the circulation of the global atmosphere and how it’s changing, every day in classes, and in conversation, you can traverse through millions of years of the world’s history and look to its future.”

James Renwick
Professor of Physical Geography

**Where environmental science can take you**

Students are prepared with the mathematical and scientific background necessary to be environmental scientists, and graduates are highly sought after for careers in this challenging area as more and more industries realise the importance of reducing our impact on the environment. An environmental scientist may work as an adviser in either the public or private sector, looking at issues such as freshwater management or sustainability.
The study of the environment is broad—you can study a range of topics. In fact, you can study almost anything to do with the environment, from a cultural, economic, scientific, or social perspective.

Deepen your understanding of the environmental issues facing New Zealand and the world. You may examine subjects including climate change, the sustainability of our cities, loss of biodiversity, water quality, and consumerism.

The interdisciplinary nature of this programme is reflected in the range of courses offered, including those in Architecture, Biological Sciences, Design, Economics, Earth Sciences, Geography, Law, Māori Studies, Political Science, and Public Policy.

What you might study
You’ll learn about the pressures humans place on Earth and what we can do about it. Study a range of topics from climate change to urban green spaces, from Māori resource management to the impact of humans on Antarctica.

Where environmental studies can take you
As an Environmental Studies graduate, you might find work in local or national government as a policy analyst or in an advisory or educational role. There are also possibilities for graduates in the private sector in jobs such as a consultant or a planner.

Many graduates have gone on to work in organisations including the Ministry for the Environment, the Environmental Protection Agency, the Ministry of Foreign Affairs and Trade, and regional or city councils. You might join a non-governmental organisation, a corporation, an iwi organisation, or become an environmental business consultant or social entrepreneur.
Raven Maeder developed a strong passion for environmental protection from a young age. This passion grew when she saw the areas she loved being threatened by the expansion of deep-sea oil drilling, the threat of coal mines on conservation land, and the effects of climate change.

“When I came to the University, I chose Environmental Studies because I wanted to understand the science behind the issues I care about. And I chose Law because I wanted to understand the systems that govern our society, in the hope that perhaps I could contribute in some way to making them fairer and to protect vulnerable people and nature, which are so often voiceless.

“Ultimately, I want to study the relationship between people and the environment and how we can make that more sustainable.”

Raven has enjoyed the multidisciplinary approach of Environmental Studies. “There are so many interesting topics that we cover, such as conservation, social justice, sustainable development, science, culture, and more.

“The Environmental Studies Conference sees the whole school coming together to present their research to each other and learn from each other, which is really cool because you can get inspiration from older students as to where the course can take you. I’ve also completed fieldwork around Wellington where I learnt about the geological history of the region.”
If you’re interested in the world around you and want to know more about the way that humans relate to it, then geography is right for you.

Geography is the study of the world we live in and the natural and cultural processes that have shaped our living environment. It spans understanding general world issues and the environment, specialist expertise in geographic information systems, land management, hydrology, environmental monitoring, and urban transport policies.

Examine how human cultures shape the world around them, and investigate the differences and inequalities between, and within, different countries and nations.

“Geography pervades society. My degree has given me invaluable knowledge about how the human and natural aspects of the environment interact and influence each other.”

Chelsea Easter
Student, Bachelor of Science in Geography and Bachelor of Laws

What you might study

Your study in Geography at Victoria University of Wellington can follow one of five themes: biophysical systems, environment and resource studies, regional and development studies, socioeconomic and cultural systems, or techniques for geographic analysis.

Study biophysical systems—the way that different earth, oceanic, and atmospheric processes behave—and learn how these natural processes interact with one another.

Find out about geographic information systems (GIS) and learn how to visualise geographic data using computer systems.

You’ll get practical experience in labs and through fieldwork in New Zealand and overseas. You might look at conservation and development on the West Coast, or the geomorphology of the Central Plateau.
Geology is the study of the formation and structure of Earth. It covers the origin and evolution of life, the extinction of the dinosaurs, the formation of sedimentary basins and mineral resources, climate and sea-level change, glaciation, volcanism, and landscape evolution.

Wellington provides an ideal setting for the study of geology, as it sits between two active faults on a major plate boundary, a few hours’ drive from the North Island’s active volcanoes and a ferry ride away from the South Island. Our backyard is internationally famous as a natural laboratory.

Fieldwork is fundamental to any geology degree and our programme capitalises on this inspirational setting, giving students experience in collecting and analysing data. Our students also make use of laboratory facilities—from analysing the chemical composition of rock or water samples to determining the age or provenance of rocks based on microscopic analysis of minerals and fossils.

**What you might study**

Work and research in the lab and out in the field to discover the origins of the solar system and how magma moves within a volcano, and examine Earth’s changing climate.

Learn how and why rocks change in response to temperature and pressure, and look at fossils to understand the climate and environment of the past. You’ll examine how history is recorded in the geological record in places such as Wellington Harbour, Antarctica, and the Taranaki Basin.

“**I’ve always had a passion for the land and ocean, and was curious to understand how they had formed and why they behave the way they do. Studying geology allowed me to use this curiosity to develop practical skills that I use in my everyday employment.”**

Adam Thomas
Graduate, Master of Science in Geology
Engineering geologist at Tonkin and Taylor

**Where geology can take you**

The continued success of many industries relies on the expertise of qualified geologists. You could join a mining company to locate, or give advice on the use of, natural resources, or support our nation’s ability to manage the risk of natural hazards.

Our graduates find employment around the world in areas such as environmental consultancy, geotechnical engineering, local council and government positions, resource development, utilities, or teaching.
Geophysicists work to describe and understand the processes governing the fundamental physical phenomena affecting Earth such as earthquakes, volcanoes, mountain building, Earth’s magnetic and gravitational fields, the deep structure of our land, and our atmosphere, weather, and climate.

At Victoria University of Wellington, geophysics gives you the option to focus on meteorology (the science of weather and Earth’s atmosphere) or solid earth geophysics (the structure and properties of Earth).

Focusing on meteorology means you’ll be looking at the weather—covering topics that include the dynamics of the atmosphere, climate change, and the ways humanity influences the planet’s weather.

Solid earth geophysics looks at the structure and properties of Earth. You’ll use mathematical techniques to explore our planet’s natural forces—earthquakes, volcanoes, mountain building, and the deep structure of the land.

“What gives us the edge in geophysics teaching and research that spans the globe is our home in Wellington and our strong connections with the governmental and research organisations based here.”

John Townend
Professor in Geophysics

**What you might study**

**Meteorology**

Gain an understanding of physical and satellite meteorology, weather systems, microclimates, and numerical modelling and climatology. Solve earth-science problems with quality equipment and computing laboratories, including advanced data analysis labs and grid computing with specialist computer modelling software.

**Solid Earth**

You’ll research how New Zealand is put together, study Earth’s magnetism and gravity, and look at volcanic and geothermal activity around the world. Learn about Earth as a planet and explore its mineral and energy resources.

**Where geophysics can take you**

**Meteorology**

Being able to understand and predict weather patterns and climate trends is essential for many businesses to operate effectively. MetService and other Crown research institutes are major employers of Meteorology graduates, and other industries such as aviation and energy production are also reliant on trained meteorologists.

**Solid Earth**

Geophysicists may work as advisers for mining companies, or support major infrastructure projects as part of an engineering firm. Crown research institutes such as GNS look for Geophysics graduates to support their research into the geological activity of New Zealand.
Physical geography is the study of the interaction of Earth’s processes: our climate, oceans, landforms, soils, animals, plants, and people.

Examine these environmental processes and how they impact on our economic, social, and environmental sustainability. Find out about the physical processes that continuously shape the Earth such as the movement of oceans and glaciers, earthquakes, the climate, and animals.

Field and laboratory work lie at the heart of many of these courses, and you’ll gain valuable experience in collecting and analysing data.

**What you might study**

You’ll study the environment, water, glaciers, the climate and climate change, glaciology, hydrology, and quaternary glaciation. You’ll also learn about techniques for geographical analysis, natural hazards, and coastal and land management.

**Where physical geography can take you**

Graduates in Physical Geography are highly regarded by employers because of their breadth of knowledge and skills and their adaptability to a range of roles, including land-use planning, environmental consultancy, and resource management.

You could work as a land management adviser, a geographical analyst, or become a researcher at a Crown research institute to increase understanding of the natural world, in New Zealand or abroad.
At their core, mathematics and statistics are about gaining insight and skills to solve problems, and the challenges of the future rely on their foundation.
Solve the world’s problems

Mathematics is the world’s oldest continuously studied academic discipline, yet with a data-driven future there has never been a time when we have experienced such unparalleled demand for mathematical and statistical expertise.

The expert skills of mathematicians and statisticians, actuarial scientists, and data scientists are crucial for the careers of the future.

Mathematics and statistics are part of every science and are used across industry, business, and government. When you study mathematics, you learn to think clearly and independently, solve problems, and to communicate your answers.

Mathematics opens doors in many fields and professions in our modern digital world. Actuary, mathematician, statistician, and data scientist were all ranked in the top 10 jobs of 2018 by US company CareerCast. Jobs in mathematics, statistics, data science, and actuarial science were all in the top 10 best salaries in the United Kingdom in a study by QS Digital Solutions.

Our strengths

- Our undergraduate Actuarial Science programme is the only one in New Zealand.
- Our School’s newest major is Data Science, a combination of mathematics, statistics, and computer science that helps us learn how to store, process, and analyse big data.

Our facilities

The University’s student computing laboratories provide access to a range of mathematical and statistical software including SAS, R, MATLAB, Maple, and Mathematica.

Experience isn’t essential

If you don’t have sufficient Mathematics credits, you can take the introductory courses in Trimester 3 (in the summer before your first year) and in Trimester 1 of your first year. The points gained from these courses count towards your degree.

We know the field of mathematics and statistics can be tough. That’s why we provide extensive learning support and have staff advisers on hand as you start your career with numbers.

www.victoria.ac.nz/sms
The Christchurch earthquakes, the global financial crisis, and climate change have all shone a spotlight on the need to prepare for the future. How can we plan better, forecast, and manage risks from natural hazards such as earthquakes and storms; personal risk related to health, disease, and lifestyle; or financial risks related to investment or asset management?

At Victoria University of Wellington, you will get the knowledge and skills you need to become a qualified actuary. If you love mathematics and like the idea of finding solutions to problems for the benefit of society, this degree is a good option for you.

Students enrolling in this major may consider taking Actuarial Science alongside a second major or minor in Economics, Finance, Mathematics, or Statistics.

What you might study

Actuarial science concerns the models and methods for undertaking this analysis, which relate directly to economics, mathematics, and statistics.

“One of the best things about the programme is the opportunities it provides for students to connect with leading members of the profession and develop links with potential employers.”

Dr Peter Donelan
Head of School of Mathematics and Statistics

Where actuarial science can take you

Actuary was ranked among the top 10 careers in an annual survey by CareerCast in 2018.

Professional actuaries are traditionally involved in superannuation, insurance, and banking. However, there is a growing demand for actuarial skills in a range of business disciplines, including education, finance and stockbroking, government, health, investment, management consultancy, and software development.
Ross Engelbrecht always knew he wanted to be an actuary, so when the Actuarial Science major was introduced at Victoria University of Wellington, there was no question that was where he was meant to be.

Ross was one of the first students to graduate from the undergraduate programme and was the recipient of the ACC Jonathan Nicholls Scholarship that awarded him a $2,500 prize for outstanding academic merit. He now works as an actuarial analyst at the Accident Compensation Corporation.

“My job is mainly about helping others understand the consequences of their decisions. I really enjoy meeting new people and developing our relationship so that I can be helpful to them. Studying actuarial science is just the beginning of the career. Learning how to use your skill set to help others is the most rewarding part.

“The knowledge that is taught in this major is very useful. Being able to think logically and explain one’s reasoning are extremely important skills. Mathematics is more than numbers, it’s a language. It can communicate in a way that words just can’t.

“Once I’ve finished off my actuarial exams I plan to see the world and use the universal skills I gained from my degree as a passport.”
Data Science combines ideas from statistics, computing, and mathematics to provide new insights that are crucial to the survival of businesses, governments, and institutions that want to transform their data into information, insights, and novel data products.

Make discoveries as you dive into data with this new major that will set you up for a career in the most high-demand industry of the twenty-first century.

Pair your Data Science major alongside another subject to provide meaningful insights into any field, including biology, chemistry, geography, linguistics, media studies, actuarial science, and economics.

Big data and the internet of things have changed the way society works—we send and receive data constantly, and now we need people who can manage and find hidden insights within it.

“Data literacy is an essential component of future citizenry—the ability to make sense of data, critique its use, and communicate with, and about it, are becoming hugely valuable skills.”

Dr Peter Donelan
Head of School of Mathematics and Statistics

What you might study

You may study courses in discrete mathematics and logic, statistics and probability, programming and databases, as well as core courses in data science. At the same time, you will work with real data sets and develop a practical understanding of the social dimensions of data.

You will develop technical skills in statistics, computing, databases, and mathematics to explore and understand data in a range of settings and applications. Then, take this knowledge to understand the consequences of the data revolution. You will assess the ethics of data collection and use, question privacy and security issues, learn about the importance of communicating effectively with data, and explore how workplaces can ‘put data in its place’.

Where data science can take you

Data scientist now regularly appears in employment surveys as one of the top careers for opportunity and job satisfaction.

You will find a range of opportunities in public-sector organisations large and small, ranging from policy and financial roles, media and health, to IT and scientific research. Examples include bioinformatics, health informatics, business consultancy, smart-city development, and social investment in government.
When Clea Molano started studying at Victoria University of Wellington she was under the impression that Mathematics and Statistics would be very narrow subject areas, but soon found that there was actually a huge amount of variety within both majors.

“During my degree, I started to realise that data visualisation was really important. I began taking more and more related courses and, in my final year, several new Data Science courses were introduced.

“I began working for a media analysis company, MacNamara Research, during my final year. That was all about visualisation and data wrangling. I realised that a big part of any data analyst role is being able to collect data and put it into the format that you want. And that’s something that I learnt through the Data Science courses at Victoria University of Wellington.”

Clea now works as the data analyst for Garage Project. “I do a lot of sales reporting—looking at what beer we’re selling and who we’re selling to. We’re also combining sales data with social media data.

“The role is brand new so I’ve found that there isn’t really a typical day—I’m updating dashboards and reports, but I’m also building the infrastructure around the data.”
A major in Mathematics requires precise and logical thinking, providing students with an array of techniques for solving problems in a variety of disciplines—scientific and otherwise.

You will get the chance to pursue your interests—from pure mathematics such as algebra, analysis, logic, and combinatorics to applied mathematics, where the skills you learn are targeted directly at real-life issues from engineering to earthquakes, coding to cosmology.

The School has some of New Zealand’s best research mathematicians in areas such as logic and computation, matroid theory and combinatorics, mathematical modelling, and general relativity.

Virtually every Science major sits upon a strong foundation of mathematics, making it an excellent complement to another qualification.

**What you might study**

You’ll begin by studying calculus, algebra, and discrete mathematics and then move on to explore more theoretical concepts or applied mathematics.

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**The more mathematics I did as an undergraduate and Master’s student, the more I enjoyed it. I found that I wanted to continue learning.**

*Meenu Jose*
Candidate, Doctor of Philosophy in Mathematics

**Where mathematics can take you**

A degree in Mathematics means you’ll be highly valued in the workplace for your numeracy and problem-solving skills, and for your ability to think logically and creatively.

Our graduates are frequently employed in the public and private sectors as financial and policy analysts, research mathematicians, scientists, software developers, and systems analysts.
A statistician distils and organises facts from data and makes inferences about the nature of the process or population from which the data was drawn.

Statistics is extremely valuable as a second major or a minor for students of Biology, Economics, Finance, Psychology, and the social sciences.

What you might study

You’re likely to focus on one of two different pathways in your Statistics major.

- Mathematical Statistics focuses on the theoretical aspects of statistics and is suited to students with a good background in mathematics with calculus.

- Applied Statistics explores the uses of statistics in life sciences and social sciences.

“I expected that the courses I would need to take would be mainly theory-based, but many of them have been very practical and relatable to real-world issues.”

Jean Paul Birikumana  
Student, Bachelor of Science in Statistics and Chemistry

Where statistics can take you

Statistician was rated in the top 10 jobs of 2018 by CareerCast.

According to LinkedIn, statistical analysis was rated as the ‘top skill’ to get you hired, and it states: “Employers need employees with statistical analysis and data-mining skills to stay competitive.”

Statistics graduates are employed in many areas in the public and commercial sectors. They are in demand as policy and data analysts in government departments, including the Ministries of Education, Health, and Social Development. The financial sector requires graduates with strong quantitative skills, and banks, stockbroking firms, and similar institutions need analysts to work closely with their dealers and give them technical advice.

Increasing numbers of Victoria University of Wellington’s Statistics graduates are employed in the agricultural, conservation, and health sectors, where they are needed for monitoring and forecasting. Such skills are also needed in social science areas such as criminology, education, and psychology.
Psychology at Victoria University of Wellington was ranked in the top 100 in the 2018 QS World Rankings and was ranked first in New Zealand in research quality by the Tertiary Education Commission in 2012.
Explore the mind

The human mind presents some of science’s greatest challenges, and an understanding of behaviour is the key to answering a number of humanity’s problems.

A Science degree in Psychology at Victoria University of Wellington is right for you if you’re someone who is often questioning why people behave the way they do and how the mind works.

From the random to the perplexing, explore some of society’s most fascinating and important questions. How does criminal behaviour develop and what can be done to remedy it? What impact does where you’re born have on your personality and values? Why do we fall in, and out of, love? How can we encourage people to make positive changes for the benefit of society and the environment?

Many of the world’s most pressing issues have a human element, such as climate change and even cybersecurity—how we influence and change behaviour can play a large part in addressing these issues.

We use a scientific approach to study the human psyche and behaviour and you’ll gain valuable skills in assessing, explaining, and even changing human behaviour. These skills are valuable in all areas where humans live, work, and interact: in business, education, forensic science, government, healthcare, law, media, and technology sectors.

Our strengths

- Our research groups are made up of psychological scientists from the traditional core areas of psychology: cognitive, developmental, social, neuroscience, and behavioural. Working across disciplines means our students benefit from multiple perspectives and collaborate with other students and staff in the School and the Faculty of Science to bring a psychological perspective to other fields of study.

- Victoria University of Wellington offers the broadest range of psychology programmes in the country, including New Zealand’s only programmes in Cross-cultural Psychology and Forensic Psychology.

- Our cross-cutting themes include the study of addiction, emotion, language, memory, and human impact on the environment.

Our facilities

We have excellent facilities, with laboratories in social, developmental, cross-cultural and clinical psychology, animal behaviour, and cognitive neuroscience. You’ll have access to eye-tracking equipment, a brain stimulation lab, electroencephalography (EEG) technology, and a psychophysiological recording suite.

Prepare yourself

Take part in PSYC Survivor, our optional four-day programme for first-year students interested in enrolling in Psychology. This is a free course that runs just before your first year begins.

Visit our website for more information.

www.victoria.ac.nz/psyc

www.victoria.ac.nz/psyc-survivor
Psychology is the scientific study of behaviour—how we think, feel, act, and process information.

The Psychology major covers topics such as the relationship between our brain and our behaviour, the environment and our behaviour, social psychology, developmental psychology, cognitive psychology, cross-cultural psychology, abnormal psychology, and how psychologists conduct research.

You will have the opportunity to discuss fascinating questions to gain insights into why people think, act, and feel the way they do.

Our courses are taught by passionate academic staff members who are recognised as international leaders in the field of psychology.

Victoria University of Wellington offers a major in Psychology in the Bachelor of Science or Bachelor of Arts. Spanning both science and the humanities, this major overlaps with Anthropology, Biology, Computer Science, Criminology, Design, Economics, Education, Engineering, Environmental Studies, Geography, Law, Linguistics, Management, Māori Studies, Marketing, Political Science, Sociology, and Statistics.

“The lecturers are passionate about what they teach, the content in my courses is very interesting, and I have had many opportunities to extend my learning.”

Petra Bolitho
Student, Bachelor of Science in Psychology

What you might study

You will learn research and lab skills from your first year that will give you a good grounding to continue your studies and become an expert in interpreting and understanding behaviour. You will:

- examine social behaviour, emotion, personality, and motivation; and consider what leads to healthy development and what causes dysfunction
- learn about perception—how our brains can tell red from blue or hot from cold—and discover the way we store and retrieve memories
- consider how we define ourselves and become the people we are by looking at the role of culture, experiences, and thinking processes on how we develop.

Where psychology can take you

The skills you learn while completing your undergraduate degree are attractive to many employers. Your ability to think critically, communicate, and write clearly, design experiments, and understand statistics, methodology, and complex human behaviour will set you apart from other graduates.

Clinical psychologists are in high demand in New Zealand, with shortages in both the public and private sectors. A Psychology degree could lead you to work in the healthcare industry, or as part of our criminal justice system.
As someone who always loved both science and the humanities, Zoë Little found that majoring in Psychology allowed her to take a mixture of papers tailored to all her interests.

“The great thing about a Psychology major is that it can really be whatever you make it,” she says. “I’m interested in neuroscience and the biological roots of behaviour, but I’m also passionate about what this means for how humans relate to each other within, and between, cultures. Psychology has helped me to make these connections and identify how research can provide solutions for all sorts of mental-health and social problems.”

Zoë found that there was nothing better than learning through experience and the School of Psychology offered her many opportunities—from working and volunteering in a lab to participating in research. “This has helped me learn so much about the processes involved in research and which areas interest me most, as well as providing me with skills and experience that will definitely help me after university.

“In the future, I hope to use what I’ve learnt at university to make a positive difference in the lives of individuals—whether that’s through clinical work, or by contributing to research.”
Add a Science in Society minor to your degree to develop your scientific literacy and explore the relationships between science and technology, and scientists and society. Look at the history and philosophy of science, and how scientific ideas and issues are communicated to different audiences.

This minor is available to students from all disciplines. It provides Science students a broader perspective on their discipline and gives non-Science students an introduction to scientific concepts and issues. The courses allow you to develop the writing and communication skills necessary to navigate the research landscape and talk about scientific ideas and issues with a range of audiences.

Many of the courses for this minor are fully online, allowing you to work at your own pace from any location. Stay connected with lectures through interactive discussion forums and blogs.

www.victoria.ac.nz/science-in-society

“This minor has sparked an interest in many topics I hadn’t previously considered and has inspired me to explore these topics further. I’ve gained a deeper understanding of the big issues commonly discussed in the media, have learnt to critically analyse information, and to differentiate between reliable and unreliable sources.”

Neco Wieringa
Student, Bachelor of Science in Computer Science and Science in Society

What you might study

- Find out about the history, philosophy, economics, ethics, and technology of science. Learn to assess critically the way mainstream media talks about scientific ideas and developments.
- Develop your knowledge and understanding of scientific concepts and processes, and draw connections between contemporary scientific issues and your own life.
- Look at topics such as the history and development of different kinds of energy sources, innovation, and entrepreneurship in science and the way that our understanding of science has evolved—from classical Greece to contemporary scientific discoveries.

Students can take any appropriate course above 100 level at Victoria University of Wellington as a part of this minor (with the approval of the programme director), including:

- Antarctic Science and Culture
- Contemporary Issues in Science, Environment and Technology
- Energy, Society and the Future
- Science Communication (minor requirement).

Where this minor can take you

Work as a policy analyst or researcher at a government agency, a non-governmental organisation, or at a Crown research institute such as GNS Science or NIWA. Use your knowledge of scientific concepts and processes to support your career in areas including communications and public relations, journalism, and patent law.
At Āwhina, our kaupapa (goal) is to provide academic and holistic support for Māori students enrolled in any degree or course. Our experienced staff offer one-on-one advising and mentoring sessions, tutorials, and study wānanga, and a range of workshops to help you achieve your study goals. Our culturally inclusive environment includes whānau rooms with computer facilities, study areas, free tea and coffee, a small kitchenette to prepare food, and space to meet with peers or tuākana (older students). We can help you transition successfully from secondary education or work into tertiary education. Nau mai, haere mai—come and visit us at the Kelburn, Pipitea, and Te Aro campus spaces listed on our webpage.

awhina@vuw.ac.nz
www.victoria.ac.nz/awhina

ĀWHINA

Pasifika engagement advisers and mentoring coordinators foster Pasifika learning and teaching communities in an environment that is welcoming, safe, and focused on academic excellence, personal growth, and wellbeing. Our students have access to a mentoring programme, course-specific study sessions, exam-oriented preparation, and workshops that support learning and development as well as meeting cultural desires. Holistic support could include chatting over a cup of tea, devising time-management strategies, and discussing learning objectives. Our team is here to help you navigate the crossing into tertiary study and looks forward to welcoming you on board. We have Pasifika spaces at the Kelburn, Pipitea, and Te Aro campuses.

Pasifika Haos
15 Mount Street
Kelburn Campus

pasifika@vuw.ac.nz
www.victoria.ac.nz/pasifika

PASIFIKA STUDENTS
“I feel very passionate about conservation of the marine environment and preserving that environment for future generations. I hope to work for a Māori organisation, as inclusion of Māori rights and views into the aquatic arena is something I feel very strongly about.”

Monique Holmes
Student, Master of Science in Marine Biology
Āwhina mentor

Growing up around the beaches of Tauranga, Monique Holmes has always loved the ocean. Studying marine biology gave her the opportunity to combine what she loved with learning.

“I feel very passionate about conservation of the marine environment and preserving that environment for future generations. I hope to work for a Māori organisation, as inclusion of Māori rights and views into the aquatic arena is something I feel very strongly about.

“Collecting and examining marine invertebrates is one of my favourite parts of my research. I enjoy collecting an assortment of cute little animals and getting to have a close look at them back at the lab. It’s also a bonus that watching David Attenborough’s *Blue Planet* can be considered studying.”

Monique is a mentor for Āwhina. “This is an opportunity for me to give back to the university community through encouraging and supporting other students in science and sharing my passion for marine biology.

“I’ve also had the pleasure of completing two summer scholarships—one with the Department of Conservation and the other at Te Ohu Kaimoana. These enabled me to experience what working in the field of marine biology is like.”
**WHO TO CONTACT**

**Faculty Student and Academic Services Office**
Visit the office for help with anything from enrolment to graduation. Get help with choosing your degree, planning your courses, or changing your degree programme. This office should be your first point of contact for any enquiries you have about your studies.
Room CO144, Cotton Building, Kelburn Campus

- 04 463 5105
- science-faculty@vuw.ac.nz
- [www.victoria.ac.nz/science](http://www.victoria.ac.nz/science)

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**Āwhina**
Āwhina is the on-campus whānau for Māori students to work collectively to share their knowledge, achieve academic success, and build strong communities and leaders.

- [www.victoria.ac.nz/awhina](http://www.victoria.ac.nz/awhina)

**Careers and Employment**
Find out what you need to know to get a job, what career options are open to you, and what your ideal future might look like.

- [www.victoria.ac.nz/careers](http://www.victoria.ac.nz/careers)

**Disability Services**
If you have a temporary or ongoing impairment, you can access coaching and advice, liaison with academic staff, adaptive equipment, technology and training, sign language interpreting, note-taking assistance, mobility parking, ergonomic furniture, and access to rest and study rooms.

- [www.victoria.ac.nz/disability](http://www.victoria.ac.nz/disability)

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**Marae**
Te Herenga Waka, the University’s marae on our Kelburn campus, is a multipurpose teaching, learning, research, and engagement hub for all staff and students. Resources, support, and activities include Te Whanake Mauri Tū Computer Suite, lunches in the wharekai from Monday to Friday, and whānau housing.

- [www.victoria.ac.nz/marae](http://www.victoria.ac.nz/marae)

**Pasifika Students**
Pasifika engagement advisers and mentoring coordinators work with Pasifika students to navigate the journey into tertiary study and success by providing holistic support and academic mentoring.

- [www.victoria.ac.nz/pasifika](http://www.victoria.ac.nz/pasifika)

**Victoria Accommodation**
Contact us for advice on our halls of residence, renting, and other accommodation options. We can assist with processing applications and offers for halls of residence.

- [www.victoria.ac.nz/accommodation](http://www.victoria.ac.nz/accommodation)

**Victoria Clubs**
More than 140 clubs at the University provide an extracurricular community for students to get involved.

- [www.victoria.ac.nz/clubs](http://www.victoria.ac.nz/clubs)

**Victoria Recreation**
Enhance your university experience by getting involved in clubs, sports, and fitness.

- [www.victoria.ac.nz/recreation](http://www.victoria.ac.nz/recreation)

**Victoria University of Wellington Students’ Association**
Victoria University of Wellington Students’ Association (VUWSA) provides advice, advocacy, events, and support for all students.

- [www.vuwsa.org.nz](http://www.vuwsa.org.nz)