



University
of Otago

ŌTĀKOU WHAKAIHU WAKA

SCIENCES PŪTAIAO



WHY SCIENCES AT OTAGO?

HE AHA E WHAI AI TE PŪTAIAO KI ŌTĀKOU?

At Otago, science takes you anywhere. With 36 majors to choose from in our Bachelor of Science, you'll have more options than any other university in the country. Whatever direction your interests or ambitions take, there's a path to suit. And with our flexible study options, you don't need to have it all figured out from day one.

Over half of all students at Otago are studying science or health science disciplines, which means a university that invests in science at every level. That investment shows up in the labs you'll use, the people you'll learn from, and a university that competes for – and wins – serious research funding.

And when you get here, you won't navigate it alone. Otago has dedicated career development, course advice, and Māori and Pacific Sciences support teams ready to help.

Then there's Dunedin. You'll live close to campus, close to the coast, and close to some of New Zealand's most extraordinary natural environments. For the natural sciences especially, that matters. It also makes it a great place to call home for a few years or longer.

Wherever your degree takes you – science careers and well beyond – find your direction and your people by starting here.





Learn from researchers who are actively advancing knowledge in their fields.



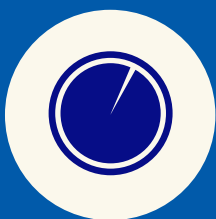
A student city like no other – compact, affordable, and alive with the energy of over 21,000 students.



From laboratories to Fiordland – your environment depends on what you choose to study.



Multiple interests. One science degree.



Ranked in the top 200 universities in the world. (QS World University Rankings)



Awarded 5 Stars Plus – the highest possible rating for teaching and research. (QS Stars)



#1 New Zealand university for educational performance. (Tertiary Education Commission)

BACHELOR OF SCIENCE

TOHU PAETAHI PŪTAIAO

Open doors to a world where curiosity meets career potential. Our BSc programme combines cutting-edge knowledge with practical skills that employers value, all within modern teaching and research facilities.

The psychologist who understands sport science. The food scientist who understands consumer behaviour. The ecologist who uses geospatial technology. Finding your future career isn't just about going deep in one subject, it's about connecting ideas across them. At Otago, following multiple interests and building career-ready skills aren't separate tracks – they're the same degree.

With 36 science majors to pick from – more than any other New Zealand university – you'll find the right subjects for you. And because they're all part of the same degree, you can combine them in ways that create genuine career advantages.

You can also easily add papers from Commerce, Health Sciences, Social Sciences, and Arts to

create a breadth of skills that employers value. Or, study a combined degree like the Bachelor of Arts and Science, or Bachelor of Commerce and Science (see page five).

And if the natural sciences interest you, there's nowhere quite like Otago. From the Portobello Marine Laboratory on Otago Harbour to field stations in Doubtful Sound and Stewart Island, from Antarctica to the Southern Alps – few universities in the world can offer this kind of access.

From physics to psychology, computer science to human nutrition – find your subjects on page six.

Your BSc isn't just a degree – it's your investment in a future where you'll tackle exciting challenges while building a rewarding career that truly matters.



Three years
full-time



[otago.ac.nz/courses/
qualifications/
bachelor-of-science](https://otago.ac.nz/courses/qualifications/bachelor-of-science)



Made up of at least 360 points.


Each paper is usually worth 18 points (credits), so 20 papers is the minimum total required for a degree.


Each paper takes around 12 hours of study time each week.


You usually study different papers in semester 1 and semester 2, and can also take papers at Summer School (January–February).

Programme structure

YEAR 1	Major 100-level 18 points	Major 100-level 18 points	Major 100-level 18 points	Science 100-level 18 points	Science 100-level 18 points	Science or other 100-level 18 points	Science or other 100-level 18 points
YEAR 2	Major 200-level 18 points	Major 200-level 18 points	Science 200-level 18 points	Science 200-level 18 points	Science 200-level 18 points	Science or other 200-level 18 points	Science or other Any level 18 points
YEAR 3	Major 300-level 18 points	Major 300-level 18 points	Major 300-level 18 points	Major 300-level 18 points	Science Any level 18 points	Science or other Any level 18 points	

 Sciences
major subject

 Sciences subjects
other than the major

 Subjects either from
Sciences or from other
degrees

You may decide to build in a second major, or a minor (a minor is usually 90 points – 5 x 18-point papers) or fill up the spaces with a selection of unrelated interest and skills-based papers.

If you are completing a Bachelor of Science degree, a maximum of 90 points (5 x 18-point papers) can be non-Science. It is always recommended that you talk to a course adviser.

“I manage a team of nutritionists and dietitians across New South Wales and the Australian Capital Territory to improve food literacy skills in the community. My degree prepared me by giving me excellent verbal communication skills to translate nutrition concepts into meaningful behaviour change.”

Ingrid Mulder

Master of Applied Science (Advanced Nutrition Practice), Bachelor of Science (Major: Human Nutrition, Minor: Plant Biotechnology)
NEST Team Lead, OzHarvest



BACHELOR OF SURVEYING

TOHU PAETAHI RŪRI

Looking for a career that combines cutting-edge technology, diverse outdoor environments, and excellent job prospects? The Bachelor of Surveying could be perfect for you.

Through hands-on fieldwork, practical classes and the use of the latest technology, you'll learn how to map everything from city streets to the ocean floor. You'll create precise 3D maps using drones and lasers, design sustainable neighbourhoods and infrastructure, and understand property rights.

Qualified surveyors are in high demand and most of our students have a job secured before they graduate. Otago offers the only degree recognised as a prerequisite to become a professional land surveyor in New Zealand.

It's also an internationally recognised degree, with many graduates choosing to work and travel overseas.

To study for the Bachelor of Surveying, you must apply for Surveying First Year. Students who successfully pass the first year then apply to second-year classes in Surveying. Surveying First Year is also an excellent pathway to other BSc courses.

BACHELOR OF ENGINEERING (HONS) SOFTWARE ENGINEERING

Prepare for employment as a professional software engineer. This isn't just coding. You'll learn the full development lifecycle from scoping and design through to testing and maintenance. You'll also develop essential problem-solving and communication abilities.

You'll go straight into Software Engineering from first year – no general engineering year. The programme progresses from programming fundamentals and computer science through to software architecture, quality assurance and project management. In your final year, you'll complete advanced projects and specialise through electives in areas like AI, networking or cyber security.

The degree is internationally recognised through the Washington Accord. Graduates work across the entire software lifecycle in roles including business analyst,

developer, DevOps/testing, user experience designer, and project management. Your skills will be in demand across industries from tech and government to finance and healthcare.

To apply, you'll need university entrance plus NCEA Level 3 calculus. Apply for Engineering First Year (BE Hons) for Software Engineering. Progress to second year by achieving a B average in six compulsory first-year papers. There is no cap on the number of students entering second year.



Four years full-time



otago.ac.nz/courses/qualifications/bachelor-of-surveying

Want a career where you aren't stuck behind a desk? Enjoy maths and technology? Surveying could be for you.



Four years full-time



otago.ac.nz/courses/qualifications/bachelor-of-engineering-with-honours

You'll complete 800 hours of professional development through internships, placements and work experience.

CHOOSING WHAT TO STUDY

The subject you specialise in within your degree is called your major (e.g. BSc majoring in Ecology). In many degrees, you can choose to have a minor as well. This is a subject you study in less depth than your major.

What interests you?

Use the subject guide on the next pages to get a feel for the subjects on offer at Otago. Studying a subject that genuinely fascinates you will make your time at university easier and more enjoyable. You might have a few subjects you enjoy – you can choose three or four subjects in your first year and then work out which one you're going to major in.

Pick your papers

Papers are like topics within each subject – the building blocks of your degree. The first courses you take are called 100-level papers or beginner papers. For the Bachelor of Science, you'll need to study either three or four papers in the first semester.

Get help planning your degree

If you're a secondary school student, our schools' liaison officers will visit your school to help you plan your first year of study. You can also contact them at any time through their offices.

otago.ac.nz/liaison

STUDY MULTIPLE INTERESTS

Combined degrees

Interested in geography and economics? Philosophy and maths? Marketing and food science? Our combined degrees allow you to build the ultimate skill set. With hundreds of combinations available, you can personalise your degree to suit your interests, strengths and career plans.

A combined degree usually takes four years to complete.

- Bachelor of Arts and Science. Choose two different majors, one from Arts and one from Science.
- Bachelor of Commerce and Science. Choose two different majors, one from Commerce and one from Science

otago.ac.nz/combine

Double degrees

It's possible to take two degrees at the same time. This doesn't mean you double your workload. You can count some papers twice by studying them in one degree and cross crediting them to the other degree. If you're considering a double or combined degree, talk to your schools' liaison officer or a University course adviser.

otago.ac.nz/liaison

SUBJECT GUIDE

Agricultural Innovation

As population increase and climate change affects our world, sustainable food production is becoming one of the most pressing issues of our time. How do we feed a global population that is expected to reach 9.8 billion by 2050? And how can we lessen the impact of extreme weather events, greenhouse gas emissions, and the decline of soil and water quality?

By studying Agricultural Innovation, you'll help pioneer solutions to these problems. Taught by agriculture, food and environment experts, the teaching programme is primarily science-focused but also incorporates the social, environmental, and economic aspects of agriculture, including traditional and contemporary Māori agriculture and mātauranga Māori.

Career opportunities

The agricultural sector is expected to generate an additional 50,000 skilled jobs by 2050, so career opportunities are plentiful. Graduates will have the expertise to work in a diverse range of sectors including biosecurity, environment protection agencies, farming or horticulture, food manufacturing, food assurance programmes, organic nutrient and fertiliser companies, regulatory agencies (regional government), and synthetic food production. Your skills could also lead to a research and development role.

Anatomy

Anatomy is the inside story of who we are. It's a diverse, vibrant, and visual subject that explores how the structure of the body relates to the functions it performs. From single cells to complex systems, Anatomy helps us understand how we grow, move, think, and live.

You'll study how anatomical research connects with health, medicine, evolution, and culture – from using skeletal remains to trace human history to understanding how reproductive systems and developmental processes work. With access to high-tech facilities and world-leading research, Otago gives you the tools to explore the human body in depth.

Career opportunities

Our graduates can be found in medicine, dentistry, physiotherapy, and nursing. Others have taken technical roles in medical or agricultural laboratories, or research roles with national scientific bodies, Crown Research Institutes, or pharmaceutical, medical or agribusiness companies.

Aquaculture and Fisheries

If you're fascinated by seas, lakes or how food is grown in water, Aquaculture and Fisheries opens exciting doors. You'll explore how wild fisheries and aquaculture (the farming of aquatic species) combines science, sustainability and innovation. The subject tackles big questions: how to grow our food responsibly, how to protect fish stocks, and how to reduce waste and environmental impact.

New Zealand's freshwater and marine environments matter enormously – for culture, food, trade and ecosystem health. By studying Aquaculture and Fisheries, you'll gain a toolkit of biology, ecology, chemistry, and management skills. Alongside theory, you'll work on practical challenges in aquaculture systems and wild fisheries, contributing to solutions for feeding growing populations while protecting oceans and freshwater ecosystems.

Career opportunities

Graduates find work in aquaculture production, farm management, fisheries science, stock assessment roles, environmental consultancy, and resource management.

Biochemistry

Biochemists find out how the molecules in living things work. You'll focus on processes at a molecular level and use this knowledge to explain how cells and organisms behave. You'll study how cells communicate with each other and with molecules in the environment, and how they can be affected by the environment itself.

Biochemistry also looks at the biological, chemical and sometimes structural basis of disease, including genetic disorders, infection, neurodegeneration, and cancer.

"Agricultural Innovation stood out to me because it had a forward-thinking focus, looking beyond traditional methods. The course encouraged me to think critically about how we can adapt to emerging challenges like climate change, sustainability and food security."

Hannah Smith

**Bachelor of Applied Science
(Agricultural Innovation, Microbiology)**

**Studying for a Master of Science (Biology),
University of British Columbia**



You'll learn how diagnosis, drug design, and therapeutic treatments at the molecular level are improving health outcomes for society.

Biochemists are experimental scientists, and hands-on learning is a fundamental part of this course. You'll gain essential practical skills using specialist scientific equipment, setting you up for a wide range of careers.

Career opportunities

Studying Biochemistry is ideal preparation for a career in research, product development, forensics, public health, bioinformatics, agribusiness, patent law, science policy, publishing, teaching, science communication, commerce, and marketing.

The New Zealand biotechnology industry has opportunities for biochemists in livestock improvement, the development of food crops, winemaking, the protection of native flora and fauna, and pharmaceuticals.

Botany

If you've ever wondered how forests thrive, why some plants flourish underwater, or what happens when ecosystems shift, Botany provides the answers.

You'll explore everything from microscopic algae and mosses to trees and seaweed, uncovering how they function and how they interact with everything around them.

Studying Botany gives you a deep understanding of plant biology, ecology, evolution, physiology and biotechnology. It teaches you to understand how plants adapt to challenges like climate change, habitat loss and invasive species, and how to breed better crops to feed growing populations. It's a subject that blends discovery, sustainability and science, revealing the vital role plants play in shaping life on Earth.

Career opportunities

Botany equips you for a career in conservation, biosecurity, environmental consultancy, research and science communication.

Chemistry

Chemistry is the science of matter and change. It underpins everything we see, breathe, taste and touch. At Otago you'll get to ask big questions: How do molecules interact? How can we create new materials or design better drugs? How can we analyse tiny pollutants in the environment?

You'll develop strong problem-solving skills, learn how to think in a chemical framework, and build knowledge that opens opportunities across many scientific fields.

Here, you're not just reading old textbook facts. You're experimenting, making discoveries, and applying what you learn. Whether you're curious about the environment, health, energy or materials, chemistry opens doors.

Career opportunities

Typical pathways include research and development; analytical lab work and quality control; environmental testing and pollution management; roles in agriculture, horticulture and fisheries science; science education, communication, or chemistry-related business and technology fields.

Computational Modelling

(Minor subject only)

Computational Modelling formulates and models real-world problems, then uses computing to develop solutions.

You could help create a new product – a pacemaker, a refrigerator, or perhaps part of a satellite – to see whether it works at a theoretical level before a company commits time and money to building the real thing. You might model the survival of an endangered species, plan how to map the wave patterns of the ocean from space, or optimise the layout of components in a new type of dishwasher.

otago.ac.nz/subjects

“Of all the papers I've completed so far, BIOC 223 stood out. It offered a deep dive into energy metabolism of the human body in both health and disease which is applicable to my day-to-day life. Biochemistry staff are friendly as well as professionals in their respective fields and are more than happy to go out of their way to help whenever possible.”

Max Spiers

Studying for a Bachelor of Science
(Major: Biochemistry, Minors: Botany, Genetics)



Computer Science

Whether you're interested in artificial intelligence, computer animation, gaming, software design or robotics, studying Computer Science at Otago will give you the expertise to thrive in a constantly evolving technological world.

Computer Science is fundamentally about learning to analyse, design and implement computer algorithms and systems. You'll gain practical programming skills in industry-standard languages alongside transferable skills that enable you to be part of dynamic tech teams.

Career opportunities

Computer scientists enjoy strong global demand and excellent salaries. With technologies changing rapidly, there's always something new and exciting to learn, making this a challenging and rewarding career perfect for those who enjoy problem-solving and logical thinking. Career paths include game design and development, CGI movie production, automotive software development, and medical informatics.

Data Science

Almost every industry now accumulates vast quantities of data daily. But how do we make sense of it all? That's where data scientists come in. Data Science combines techniques and methods from computer science, information science, and statistics. You'll learn how to extract insights from large, complex data sets and communicate this knowledge through effective modelling and visualisation.

You'll have opportunities to dive into areas that interest you, whether that's efficient computation, data storage infrastructure, data analysis or applied machine learning. You'll also gain valuable problem-solving, communication and data visualisation skills, making you a sought-after asset in any organisation.

Career opportunities

Studying Data Science leads to opportunities in banking and biotechnology, entertainment and education, gaming and government, medicine and manufacturing, retail and research.

Ecology

Ecology is your invitation to understand how plants, animals and environments connect, change and shape our world. At its heart, Ecology gives you the tools to explore questions like: where do organisms live, why do they live there, and how do they interact with each other and their surroundings?

You'll gain real-world skills and up-to-date knowledge of global ecological trends. Most importantly, you'll learn how to use that knowledge to protect habitats, manage natural resources and care for ecosystems, both here in Aotearoa and around the world.

Career opportunities

Graduates find careers in Crown Research institutes, government agencies, local and regional councils, environmental and ecological consultancies, conservation and ecotourism operations, and data analysis and environmental modelling.

Economics

Economic thinking drives decision-making in just about every area of society, from government and business policy to personal decisions. This programme will equip you with the skills to interpret, analyse and question diverse economic theories and policies in a real-life context.

Do you enjoy wrestling with tough questions? Get ready to debate complex issues around unemployment, economic growth, housing, income inequality, international trade, sustainable development, and the environment. You'll learn how to analyse ideas and come to your own conclusions – valuable skills for just about any career.

Career opportunities

A degree in Economics opens doors to a range of rewarding careers in the public or private sector, whether you aspire to work as a policy analyst, a business consultant, an economics researcher, a financial adviser, or a diplomat.

“One of the papers I enjoyed was Software Project Management. It was centred around group work and helped with presenting and speaking skills. I'm now employed in a graduate programme. I work for the network and securities team doing software engineering work, building internal speed tests, scripting our automations, and liaising with stakeholders about AI capability.”

Dyrel Lumiwes

**Bachelor of Science (Major: Computer Science,
Minor: Software Engineering)**



Environment and Society

(Minor subject only)

Explore the Earth's environmental systems and the impact humans have on our natural systems at global, national and regional scales. Examine environmental hazards and concerns and delve into the ethical, legislative, economic, and political responses to these issues.

Environmental Management

Learn how to combine scientific knowledge, management methods and an understanding of environmental legislation to provide solutions to environmental problems.

You'll delve into the science behind environmental systems and problems, learn about the biological, ecological and socio-economic drivers of environmental change, and gain expertise in environmental legislation.

Career opportunities

Graduates commonly pursue careers in government agencies, environmental consulting firms, agricultural research organisations, academic institutions, and food security and export firms.

Exercise and Sport Science

Exercise and sport science plays an important role in society, from enhancing sports performance for elite athletes to combating the negative health effects linked to physical inactivity common in modern lifestyles.

You'll gain a scientific understanding of the four disciplines that underpin exercise and sport science: biomechanics, motor behaviour, physiology, and psychology. By applying the latest research and technology, you'll analyse how people co-ordinate movement to reduce injury and optimise performance in a variety of conditions and contexts.

Career opportunities

Graduates build careers as sport scientists, exercise physiologists, mental skills trainers, performance analysts, technique analysts, strength and conditioning trainers, and personal trainers. They also find work in research and development.

Food Science

If you're curious about what food really is – from molecule to meal – then Food Science might be for you.

At Otago we connect biology, chemistry and microbiology with real-world food systems and consumer trends. You'll discover how to take raw ingredients, turn them into delicious safe products, and get them out to the world. This means you're not just studying theory; you're building the foundations for innovation in food processing, nutrition, taste, and sustainability.

With global demand for Food Science graduates and plenty of chances to work with industry-sponsored projects, you're stepping into a field that matters, now and in the future.

Career opportunities

There are exciting career options in product development, quality assurance, brewing, and technical sales. Graduates find work in research institutes, and support food safety and compliance through regulatory or consulting roles.

Forensic Analytical Science

Explore the real science behind criminal investigations. Learn how small pieces of evidence can tell big stories, and how analytical techniques help us reconstruct events and link people to crime scenes.

This diverse degree covers crime scene investigation, DNA analysis, chemical techniques, skeletal identification, and more. A Forensic Analytical Science degree will hone your critical thinking skills and teach you to apply core scientific techniques to real-world problems.

Career opportunities

Graduates work in forensic science, laboratories, government agencies, regulatory bodies tasked with managing natural resources, and research. The techniques you'll learn are fully applicable to criminal forensic work, although openings for criminal forensic scientists in New Zealand are limited and will require further study or employment experience.

otago.ac.nz/subjects

“Economics feeds into many different career paths. I've had friends go into policy, economic consultancy firms, international organisations, and start their own businesses. I've chosen a more technical application – the further I progress, the less people I encounter who have focused their career in this area, and the more opportunities have opened up for me.”

Suzie McKenzie

Master of Economics, Bachelor of Science
(Major: Economics)

Macroeconomic Modelling Specialist,
Treasury New Zealand



Genetics

Genetics is the science of how living things inherit traits, evolve and adapt. Studying Genetics means asking big questions: How does a gene make a difference? How does variation shape populations? How can we use genetic insight to improve health or protect ecosystems?

At Otago, your study will be rooted in the fundamentals of biology and bursting with real-world relevance. Whether you're fascinated by medical breakthroughs, biodiversity, biotechnology, or environmental change, studying Genetics will give you the tools to explore these topics and many more.

Career opportunities

You could go on to become a biotechnology or pharmaceutical researcher, a conservation or biosecurity geneticist, a data scientist or bioinformatician in genomics, or a science communicator or policy adviser.

Geographic Information Systems

Many aspects of our everyday lives are connected with GIS in one way or another, from Google Earth and mobile location technologies to mail delivery, electricity supply and weather forecasting.

On this programme, you'll cover topics like mobile GIS and web mapping, remote sensing (including from drones), and GNSS (GPS) positioning. You'll gain skills in spatial analysis, cartographic presentation, 3D data capture and management. You'll reinforce your classroom learning through hands-on practical sessions and field trips. Plus, you'll get the chance to see how your degree relates to the workplace, with the opportunity to carry out work experience at the end of your second and/or third year.

Career opportunities

GIS is a multi-billion dollar industry worldwide and your skills will be in high demand in public service, local government, and business. You could work in urban and regional planning, kaupapa Māori resource management and consulting, or the delivery of location-based services.

Geography

Geographers study the environment – both physical and human – to find innovative responses to society's most pressing issues, from climate change and migration to globalisation and inequality.

On this programme, you'll explore the physical processes that shape the natural environment, the social and cultural processes that explain patterns of human activity, and the interactions between human activity and the natural world.

Field trips and week-long field schools provide opportunities to work with communities, agencies, and local government, deepening your understanding of environmental and socio-political change. Practical training in data collection, spatial analysis, and environmental assessment will equip you with skills highly valued by employers.

Career opportunities

Geography graduates find employment in government departments, private corporations, and consultancies. They work in areas such as regional and resource planning, environmental management, natural resources (especially water) analysis, social and economic research, social services, and regional development.

Geology

Studying the Earth beneath our feet is central to our transition to a sustainable future. You'll learn how to interpret Earth's formational history and the evolution of its lifeforms by analysing rocks, minerals, magma, fossils, ice and water.

You'll study how our planet's interior interacts with the oceans and atmosphere to regulate global change and become a master of critical observation and interpretation, from the molecular to plate tectonic scales.

Geology is a hands-on science. You'll spend time in the laboratory and out in the field, gaining specialist technical and research skills.

Career opportunities

Geology graduates find work in environmental consulting, resource management, environmental restoration and renewable energy projects. They may assess earthquake, landslide, and volcanic risks to support civil defence, or provide expertise for engineering and construction projects.

“My business provides personalised nutrition support to rugby union and league players. I work online with 30 rugby players at a time from all over the world. My degree was critical in allowing me to set up my business at a young age as I feel very confident in my knowledge of nutrition. My favourite papers were ones that focused around sporting performance and provided flexibility to dive into my personal interests.”

Hayden Christie

Master of Applied Science (Advanced Nutrition Practice), Bachelor of Science (Human Nutrition)
Sports Nutritionist, Hayden Christie Nutrition



Human Nutrition

Public and media scrutiny of what we eat has never been greater. In this programme, you'll delve into how nutrition influences health and disease, and dive deep into topics like the biological foundations of nutrition, lifecycle nutrition, and strategies to improve the health of diverse communities. You'll also examine cultural and social influences on dietary habits, and master the art of effective communication about nutrition and health.

Ever wondered how your own dietary habits impact your daily life? Through practical projects you'll get to monitor your body's response to different foods, developing strong research and analytical skills along the way.

Career opportunities

A world of opportunity awaits. Graduates pursue fulfilling careers in the health sector, government organisations, research, teaching, high-performance sport, private practice, and the food industry. You could also become a registered nutritionist, opening doors to exciting prospects in the field of nutrition and health.

Land Planning and Development

Built environments play a significant role in how societies function. On this programme, you'll examine how land planning and the process of land subdivision and development impact our human and natural landscapes. You'll look at how land decisions have cultural, social, legal, economic and ecosystem implications, and learn how to assess the economic potential of land.

Alongside lectures and tutorials, you'll gain practical skills using computer-aided draughting packages and geographic information systems. You'll undertake engineering labs, infrastructure inspections, site visits and fieldwork, giving you the opportunity to gain relevant experience before you graduate.

This degree differs from other New Zealand planning degrees in that it emphasises engineering design and land administration from both Pākehā and Māori perspectives, as well as covering essential aspects of New Zealand legislation that relate to land development.

Career opportunities

You'll graduate with an excellent foundation for a career in planning, land development and resource management, especially in relation to the subdivision and administration of land. You could go on to work in local government and private practice with surveyors, planners, land developers and urban designers. Students wishing to become recognised as fully qualified professional planners have the option to undertake the two-year Master of Planning at Otago, leading to membership of the New Zealand Planning Institute.

Marine Science

New Zealand boasts a vast 15,000km coastline and one of the world's largest exclusive economic zones (EEZ). Despite this, our knowledge of our marine environment remains limited. You have the opportunity to change this.

Studying Marine Science is a hands-on experience. As well as attending lectures and tutorials, you'll have practical labs and field trips at sea. Alongside our research and teaching facilities in Dunedin, we have a major research laboratory on the Otago Peninsula and field stations on Stewart Island and in Doubtful Sound. A fleet of research vessels, including the expedition vessel *RV Polarix II*, provides access to local marine habitats.

Career opportunities

Marine scientists are valued, not only in learning institutions, but also by governments and large corporations. Marine research can take you from the poles to the tropics, Antarctica to Fiji, and from regional councils to government agencies, such as the Department of Conservation, NIWA and the Ministry for Primary Industries.

otago.ac.nz/subjects

“One of the reasons I was drawn to Marine Science is the variety it offers. There are so many things you can do in a day, from working in the lab, going out on the boat, or diving. During my postgrad studies I enjoyed getting involved with local community initiatives.”

Isla Twigg

Doctor of Philosophy (Marine Science), Bachelor of Applied Science with Honours (Aquaculture and Fisheries)

Postdoctoral Researcher, University of Galway



Mathematics

Mathematics guides construction planning, protects digital information, drives medical modelling and helps us understand climate systems. It also opens the door to deep ideas like patterns in prime numbers, elegant geometry, and the nature of infinity.

When you study Mathematics, you'll build a toolkit for tackling real problems. You'll learn to analyse complex situations, break challenges into manageable parts, and find creative solutions. These skills transfer across careers in technology, finance, data science, research, engineering and more.

Mathematics is also beautiful. It offers pure intellectual challenge and the thrill of exploring ideas that have inspired thinkers for generations. It's about curiosity, imagination and the excitement of discovering how things truly work.

Career opportunities

Mathematics graduates follow diverse career paths. You could find work as a data analyst or data scientist, a software or algorithm developer, a teacher, educator or academic, a quantitative modeller, or a researcher in applied mathematics or a mathematics-adjacent field.

Microbiology and Immunology

Microbes make up over half of all life on Earth – tiny, unseen, and endlessly fascinating. At Otago you'll learn how microbes influence human health, ecology, industry and global systems.

From how our immune system responds to infections, to how microbes help recycle nutrients or even produce food and medicines, this subject opens opportunities across biology, health and environment.

You'll get hands-on with lab work in modern facilities, build real-world skills and explore questions that matter now and into the future.

Career opportunities

You could go on to work as a microbiologist in healthcare or diagnostic labs, a research scientist in biotechnology or pharmaceuticals, an agricultural microbiologist, a quality assurance or food safety office, or as a science communicator.

Neuroscience

Turn your curiosity about the brain into real discovery. You'll explore the organ that drives everything we do – from thought and emotion to memory, movement, and recovery after injury.

At Otago, Neuroscience connects biology, psychology, chemistry, and computer science into one fascinating story of how the brain works. Build hands-on experience in labs, develop sharp data and research skills, and tackle real questions about health, behaviour, and human performance.

This is a subject that looks forward, with breakthroughs in medicine, mental health, artificial intelligence, and robotics all starting with an understanding of the brain.

Career opportunities

Majoring in Neuroscience prepares you to work as a laboratory technician, research assistant, research manager or policy analyst. It also provides a useful first degree if you later want to specialise in medicine, pharmacy, physiotherapy, optometry, audiology or nursing. If you're planning on becoming a neuroscientist, you'll need to go on to postgraduate study.

Pharmacology and Toxicology

Explore how medicines are discovered, how they work in the body and mind, and how they can be used safely and effectively.

You'll learn how drugs move through the body, how they act on organs and cells, and how new treatments are developed.

Toxicology adds another vital layer – understanding how chemicals and medicines can harm, and methods of prevention.

You'll learn alongside researchers shaping breakthroughs in drug design and new therapeutics, and benefit from small classes, modern labs, and supportive teaching.

Career opportunities

Graduates go on to careers in health, research and industry. You might find employment as a drug development researcher in pharmaceutical companies or biotech; a clinical pharmacologist or specialist in hospital or healthcare settings; a toxicologist working in environmental, regulatory or industrial contexts; a science communicator or policy adviser; or as a technical specialist or adviser.

“I work as a power trader in a Sydney-based hedge fund (think *The Big Short* but for electricity instead of housing debt). I compete to quickly and accurately predict the price of electricity based on the weather (solar, wind, hydroelectricity), economic factors, behavioural factors, statistics, and regulatory changes. It is highly competitive and ridiculously fast-paced.”

Josh Signal

Bachelor of Science with Honours (Mathematics)
Trading Analyst, Pacific Energy Trading



Physical Education, Activity and Health

Learn about the intricacies of human physiology, how it's enhanced by physical activity, and the role that the physical environment plays in physical activity and health.

This major has a focus on Māori physical education and health, emphasising the important roles of hauora, Te Tiriti o Waitangi, and te ao Māori in supporting health and wellbeing.

Our programme incorporates practical learning, providing exciting opportunities for you to apply your knowledge in real-world settings. Whether through walking labs, placements, practicums, or community outreach initiatives, you'll gain valuable hands-on experience while making a positive impact on the lives of others.

Career opportunities

Specific roles could include a health coach, exercise programme adviser, sports coach, or a health and fitness professional in a gym setting.

Physics

Physics is a search for and an application of rules that can predict the evolution of the world around us. This includes planetary motion, quantum jumps in atoms, and the propagation of light.

Through central concepts such as energy, force, particles and waves, Physics attempts to answer fundamental question about nature, while at the same time providing solutions to technological problems.

Physics will hone your thinking ability, and help you to develop high-level analytical and problem-solving skills.

Career opportunities

A Physics degree will give you multiple future options. You could work in high-tech areas such as electronics, laser technology, smart materials, healthcare, analytics, or telecommunications.

Physiology

Physiology is all about how living things work. Understanding what's normal is the key to recognising when things go wrong, and enabling the development of effective treatments.

Studying Physiology will help you understand real-life problems such as ageing muscles, diabetes, high-performance sport, neural disorders, and lung disease. You'll explore how single cells transport molecules, how brain cells talk to each other, and how the heart, lungs and kidneys keep things working.

As you discover how the body functions and adapts, you'll build strong analytical, lab and communication skills, highly valued across research, health, and technology fields.

Career opportunities

Physiologists pursue opportunities in research, health-tech or biotechnology, clinical support roles, sport science, high-performance coaching and public health.

Plant Biotechnology

Plant biotechnology has revolutionised agriculture to address global challenges. Using techniques like genetic engineering and selective breeding, scientists manipulate the genetic makeup of plants to increase crop yields, improve their resistance to pests and diseases, and improve their nutritional content.

This dynamic field, encompassing plant physiology, biochemistry and molecular biology, plays a vital role in sustainable food production, environmental conservation, and the creation of resilient crops to meet the demands of a growing world population.

Career opportunities

Graduates will find opportunities in Crown Research Institutes, biotechnology and agricultural technology companies, research, environmental and sustainability advisory roles, and science communication.

otago.ac.nz/subjects

“Throughout my Anatomy studies, I've gained valuable skills. These include technical lab skills like microscopy, histology, cell culture, and dissection, as well as skills such as critical thinking, scientific communication, ethical reasoning, and creative problem-solving.”

Anita Clark

Te Atiawa (Taranaki), Ngāi Tahu / Kāi Tahu

Studying for a Bachelor of Science with Honours (Anatomy), Bachelor of Science (Majors: Anatomy, Physiology)



Psychology

Psychology is the science of behaviour, brain and cognition – the study of how humans and other animals interact with the world and each other. It's about what drives us, how we think, and why we act the way we do.

At Otago, you'll dive into the fascinating processes behind perception, emotion, memory, and decision-making. You'll see how psychology connects science to everyday life – from transport safety and mental health, to child development, workplace wellbeing and eyewitness testimony.

Career opportunities

Psychology provides a deep understanding of human behaviour that's valuable across many sectors including business, health, education, technology, and community work. Our graduates work in diverse fields such as mental health support and youth work, marketing and consumer behaviour, human resources and organisational management, research and data analysis, health coaching and promotion, the criminal justice sector, teaching, social work, and nursing (with additional qualifications). Psychology graduates from Otago can also apply for entry into professional psychology training programmes, including the Clinical Psychology Programme which leads to registration as a Clinical Psychologist, and programmes leading to registration as a Psychology Assistant (subject to NZ Psychologist Board approval in 2026).

Software Engineering

(Degree – see page 4)

Sport and Exercise Nutrition

From athletes fine-tuning their training to healthcare professionals addressing lifestyle-related health issues, there's a growing need for expertise that bridges nutrition science and exercise physiology.

In this programme, you'll delve into the theory of human nutrition and sport and exercise science, covering topics like human body systems and biochemistry. You'll also gain practical experience in hands-on labs, practical sessions, tutorials, and workshops.

Career opportunities

With this degree you could pursue careers in sports nutrition consultancy, public health, research, product development, clinical practice and corporate wellness.

Sport Development and Management

Sport is used as a development tool across many sectors of the community. In this programme, you'll examine the people, institutions and policies that influence the structure, management and experience of sport. You'll focus on the quality of organisations and societal conditions that support sport participation, the psychological variables that help sporting development and performance, and the impact of sport on community objectives such as wellness, social integration and economic renewal.

Career opportunities

Careers in this sector include sport development officers, administrators and managers in national/regional sports organisations, community trusts, commercial sports entities, government ministries and local councils. The programme also provides pathways into teaching, coaching, youth work, sports marketing and sports journalism.

Sports Technology

(Minor subject only)

Sports technology is an integral part of modern sport. Encompassing the use of advanced analysis tools, hi-tech sportswear, and innovative training equipment and programmes, it offers opportunities for enhancing performance, preventing injury, and improving our understanding of the human body.

Statistics

Statisticians find information in data and apply this knowledge to real-life scenarios. Statistical techniques are used in just about every field, from evaluating the environmental effects of pollutants to helping researchers evaluate new drugs and medical procedures.

You'll learn how to design experiments and surveys, analyse data, and extract meaningful information. You'll gain

“Originally, I enrolled in a BA, studying Sport Development and Management. However, in my first-year Anatomy and Physiology papers, I enjoyed learning about the science behind physical activity, sport, and movement. Changing to a Bachelor of Science gave me the opportunity to engage with practical experiences that aligned more closely with my career goals.”

Riley Piebenga

Studying for a Bachelor of Science
(Sport Development and Management)



expertise in statistical computing, quantitative reasoning and mathematical modelling – all skills that will make you highly employable.

Your teaching will be enhanced by the varied research interests of our staff, which include ecology, bioinformatics, biostatistics, quantitative genetics, and problems such as disease spread and seismic and volcanic hazards.

Career opportunities

Career pathways include data analyst or statistician in government, business or research settings; biostatistician supporting public health, medical studies or clinical research; data scientist working with analytics, modelling and real-world datasets; market or consumer insights researcher; risk analyst or financial analyst supporting smart decisions in finance and insurance.

Surveying

(Degree – see page 4)

Surveying Measurement

This major is comprised of papers from the surveying methods and geospatial aspects of the Bachelor of Surveying degree. It's ideal for overseas students who wish to study Surveying but without the New Zealand land law, statutory planning or land administration aspects of the longer degree.

Career opportunities

Graduates find opportunities in the land development sector and on surveying projects in the private sector.

Sustainable Energy

Cutting carbon emissions from fossil fuels is crucial if we want to avoid the worst effects of climate change. The world needs cleaner, more sustainable ways to generate power and this programme will equip you with the knowledge and skills to drive change.

You'll delve into the science behind renewable energy, energy efficiency and carbon reduction. You'll gain a deep understanding of a range of renewable and non-renewable energy resources and develop the key skills required for energy analysis in industrial and commercial settings.

We cover a variety of sustainable energy topics in our

courses, meaning you could dive into projects as diverse as energy-efficient housing, heat pump technology, generating energy from waste, identifying energy saving opportunities on campus, designing renewable energy installations, and assessing the potential for solar energy in university flats.

Career opportunities

Our graduates have gone on to work in a diverse range of positions: designing and implementing renewable energy technologies, identifying and implementing energy efficiency and carbon reduction measures at industrial sites and commercial buildings, and developing energy and sustainability plans for government departments.

Zoology

Zoology is the study of animals in all their extraordinary diversity. From microscopic DNA adaptations to the complex behaviours that help animals find food, reproduce and survive – it's a subject that operates at every scale imaginable.

You'll explore how animals have evolved to sense and navigate their environments, how populations change over time, and how species interact with each other and the world around them. Your teachers will include ecologists, physiologists, developmental biologists, geneticists, evolutionary biologists, mathematicians, and even filmmakers giving you a genuinely broad scientific education.

Alongside lectures and tutorials, you'll gain valuable hands-on skills through lab work, field trips and research studies. Dunedin's diverse natural surroundings provide an extraordinary range of native wildlife and habitats for study, including marine environments, mountains, grasslands and wetlands.

Career opportunities

With a degree in Zoology you could work as a wildlife biologist or ecologist; an environmental consultant analysing populations, ecosystems and conservation strategies; a laboratory scientist in genetics, physiology or biotechnology; a marine or freshwater scientist; or as a science communicator, educator or curator.

otago.ac.nz/subjects

“I took STAT 115 Introduction to Biostatistics and really enjoyed it. A lot of people have a perception of statistics as calculating numbers or a p-value; there are those aspects, but more broadly we use statistics to answer questions and explain behaviours we see in the world using data – everything from predicting earthquakes to genetics.”

Sarah Croft

PhD candidate, Bachelor of Science with Honours (Statistics), Bachelor of Science (Majors: Genetics, Statistics)





HANDS-ON EXPERIENCE FOR SECONDARY STUDENTS

Alongside the community engagement programmes developed by individual departments, the Division of Sciences offers three important programmes.

Science Academy

Science Academy is an exciting programme aimed at Year 13 students from rural/provincial and formerly lower decile schools with a passion for science and the potential to excel in their final year NCEA and/or scholarship science exams. It provides you with the opportunity to work alongside, and be challenged by, leading scientists across a wide range of disciplines.

You'll attend two residential science camps on the University of Otago campus – a summer science camp in January and a winter science camp in July. Between science camps you'll work collaboratively in small teams on a science communication project that you'll present at the end of the July camp. Following the July camp you'll be supported by our online tutors, who will present 10 online tutorials targeted at NCEA/scholarship physics, chemistry and biology in the run up to your externals at the end of the year.

otago.ac.nz/science-academy

Tuia i Hawaiki, tuia i te Uru – Science Wānanga

Tuia i Hawaiki, tuia i te Uru – weaving together the strengths of western science (te Uru) and mātāuranga Māori (i Hawaiki) to navigate new ways forward for our people and to bring the best of both worlds together.

Science Wānanga is a three-day noho marae full of fun, interactive science activities for rangatahi Māori in Years 7–10.

Staying on a marae with University student tuākana, scientists and kaumatua, rangatahi Māori get to hang out and do real science in their local communities. The supportive partnerships between iwi, kura and Te Whare Wānanga o Ōtākou, the Division of Sciences, are the strength of the programme.

If you're a Māori student passionate about the world around you, we'll help you get to where you want to be.

otago.ac.nz/science-wananga

Hands-on at Otago

Experience a week of Otago student life over the summer holidays.

Each morning, students participate in a research project in a university department. Allocation to these projects is based on the five projects you selected at registration. For each project we also try to achieve a good balance of skills and backgrounds, while accommodating the specific requirements of individual projects and supervisors.

The Taster programme allows students to experience a variety of other research activities, both on and off campus, during the afternoon programme. Each afternoon Taster comprises two hours of interactive, fun opportunities for students to see researchers in action in real-life situations.

The learning programme is balanced by a variety of social and recreational activities in the afternoons and evenings.

otago.ac.nz/hands-on-at-otago



GET HELP WITH YOUR APPLICATION

Schools' liaison

Schools' liaison work with anyone considering study at Otago, including secondary school students and adults thinking about returning to education.

If you're a secondary school student, your schools' liaison officer will visit your school to help you plan your first year of study. You can also contact them at any time through their offices.

otago.ac.nz/liaison

Course advice

Once you're on campus, course advisers are available to help. Course advice is available as many times as you need during your time at Otago.

otago.ac.nz/courseadvice

AskOtago

AskOtago is your one-stop shop for all questions about studying at Otago. Find answers with our searchable knowledgebase, or use our online form to request a service. You can also chat to us online, phone us, or visit our hub in the Information Services Building, or at one of our other hubs around campus.

ask.otago.ac.nz

How to apply

Applications to Otago are made online through eVision. Once you've created your account, eVision will guide you through the application process. All enrolment, scholarship, and residential college applications are made via eVision.

otago.ac.nz/study/enrolment

USEFUL INFORMATION

Māori Sciences at Otākou

We're a dedicated team offering a range of programmes, workshops, activities and support services to engage taurira Māori in Sciences, foster whanaungatanga with other taurira, and create a culturally safe space for them to thrive and succeed.

otago.ac.nz/sciences/maori

Sciences at Otago

otago.ac.nz/sciences

General information for new students

otago.ac.nz/future-students

Applying to study at Otago

otago.ac.nz/enrolment

Sciences Pacific Student Support

We provide academic skills support (for undergraduate through to postgraduate studies), academic progress guidance, and academic and social engagement opportunities for students.

otago.ac.nz/sciences/pacific

Scholarships

otago.ac.nz/entrance-scholarships

Accommodation at Otago

otago.ac.nz/accommodation

Local students

otago.ac.nz/locals

KEY DATES

1 August

Residential college applications open online.

15 August

Applications close for most University of Otago entrance scholarships.

30 September

Residential college applications due.

15 November

Applications due for international students.

10 December

Closing date for applications for all new students taking Summer School, semester 1 or full-year papers or courses.

While all information in this booklet is, as far as possible, up to date and accurate at the time of production, the University reserves the right to change courses and course requirements, and to make any other alterations as may be deemed necessary.

Printed March 2026.

