



A quick guide to undergraduate **Biological Sciences**

Biology lies at the core of New Zealand's economic and natural environments. The biological sciences have never been more important for preserving our economic prosperity and the natural biodiversity of our islands in the face of global threats such as climate change and population growth.

Studying Biological Sciences at the University of Auckland offers you the chance to learn under world-renowned researchers and academics as you take advantage of the cutting-edge facilities and equipment available. You can choose to keep your Biological Sciences major general, or you can follow one of nine pathways: Biochemistry and Cell Biology, Biotechnology, Ecology, Evolution, Genetics, Marine Biology, Microbiology, Plant Biology or Zoology.

If you're interested in studying Biological Sciences with us, a broad background in general sciences and a solid understanding of high school biology and chemistry is a good start.

Can't choose which subject to study?

With so many options it's sometimes hard to choose what you want to study, but we've got you covered. You can study a double major with our Bachelor of Science to gain a broader base of skills and knowledge.

Complementary majors include:

[Anthropological Science](#)
[Chemistry](#)
[Environmental Science](#)
[Exercise Sciences](#)
[Psychology](#)
[Statistics](#)

Explore and discover everything you need to know about studying
Biological Sciences:
science.auckland.ac.nz/ug-biological



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is ranked
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#1

Biological Sciences

What you'll study in your Biological Sciences degree

BSc

You can choose to keep your Biological Sciences major general, or you can follow one of nine pathways:

- **Biochemistry and Cell Biology:** The structure and function of molecules and how they interact inside cells
- **Biotechnology:** The commercial development of new knowledge and discovery in the biosciences
- **Ecology:** Interactions between organisms and their environment
- **Evolution:** Changes in heritable characteristics of organisms over successive generations
- **Genetics:** The molecular basis of heredity and the role of genes in disease
- **Marine Biology:** The study of organisms that live in our oceans
- **Microbiology:** The study of viruses, bacteria, fungi and other microscopic organisms

- **Plant Biology:** Plants viewed from a molecular, cellular, physiological and biotechnological perspective
- **Zoology:** The anatomy, physiology, evolution and behaviour of animals

INCLUDES A

student-led capstone course



Find out how your degree will be structured and what courses you need to take at

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Omni Arona

Bachelor of Science, majoring in Biological Sciences and Psychology.

"The courses at the Faculty of Science give you a wide range of options and paths to follow, whether it's ecology or human neuroscience."

"Biology and Psychology complement each other well, and I hope that a double major will be a benefit when I apply for postgraduate study. Studying these majors has helped me to not only understand others better, but also to understand myself."

"I really enjoyed a field trip to Rangitoto, where we studied the island's biogeography. It allowed me to get out into the field and consider a career in ecology. This wasn't something I had planned on studying, but it's become something that I'm very passionate about with regards to New Zealand and its biological landscape."

"I also hope to continue into the Clinical Psychology postgraduate programme at the Faculty of Science. I'd like to commit myself to a restructure of New Zealand's mental health system, specifically lowering rates of suicide and depression, for my people of Māori heritage, whose numbers in those areas require affirmative help and action."

"Studying here has facilitated my growth into a free thinking adult. The University of Auckland allows you to participate in any non-academic passions you may have. My love of music has not been restricted by my degree, and I'm still able to be creative within the University's music production club, Beats r us, and the film association."

Careers in Biological Sciences

An exciting field with a great future

Studying Biological Sciences will refine your research skills and also allow you to develop expertise in written and oral communication, teamwork and leadership, and critical thinking.

As a graduate you will gain a unique, integrated perspective of the importance of biology in modern society and in the biological-based industries, leaving you well placed to enter employment or progress to postgraduate study.

With scientific discovery in the biological sciences advancing at breathtaking speed, there are opportunities to apply this learning in a number of different career pathways in New Zealand and overseas. You may find employment in Government, industries, Crown Research Institutes and the private sector.

Our Biological Sciences graduates have been employed in the following jobs:

- Research scientist, University of Oxford
- Environment and quality manager, Sodexo
- Project manager, Fisheries Issues Group, Great Barrier Reef Marine Park Authority
- Nutrition manager, Vejo, Inc.
- Director, Harvey Geoscience
- Researcher, Massachusetts Institute of Technology
- International climate change adaptation specialist, Asian Development Bank
- Environmental engineer, Rockhampton Regional Council
- Quality systems officer, Argenta Manufacturing Ltd

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A quick guide to undergraduate **Biomedical Science**

If you're a very able student with a passion for understanding the scientific basis of health and disease in humans and animals, then Biomedical Science could be the specialisation for you.

This challenging and immensely rewarding specialisation will deliver rigorous scientific training in a range of disciplines, allowing you to gain unique insights into this important and rapidly developing area of modern research.

As a Biomedical Science student at the University of Auckland you can choose to keep your specialisation general, or you can choose one of nine different pathways to focus your studies (see overleaf). Biomedical Science is one of only two ways you can be selected for Medicine (MBChB) at the end of Year 1. You may also apply for selection into Optometry, Medical Imaging or Pharmacy at the end of your first year.

If you're interested in studying Biomedical Science with us you'll find it beneficial to have a strong science background, including high school biology, chemistry, physics and/or mathematics.



Explore and discover everything you need to know about studying Biomedical Science:

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What you'll study in your Biomedical Science degree

BSc

You can choose to keep your Biomedical Science specialisation general, or you can choose one of the following pathways:

- **Anatomical Imaging Science:** Anatomy made accessible for teaching, medical imaging, surgical planning and biomedical applications.
- **Cancer Biology and Therapeutics:** The molecular and genetic basis of cancers and ways of treating these diseases.
- **Cardiovascular Biology:** The structure, function and regulation of the cardiovascular systems and associated diseases.
- **Cellular and Molecular Biomedicine:** The foundation to understanding disease and developing effective treatments.
- **Genetics:** How our genes impact health and wellbeing, and the treatment of disease.
- **Infection and Immunity:** The complex interplay between microbes and their hosts, the principles of infectious diseases, vaccination and immunological disorders.

- **Neuroscience:** The developmental origins, structure and function of the nervous system, what goes wrong in neurological disease and approaches to treating brain disease.
- **Nutrition and Metabolism:** The role of nutrients in metabolic regulation, and the influence of the genome on nutrition.
- **Reproduction and Development:** Study the amazing technologies that have been developed to enhance reproduction.

INCLUDES A

**student-led
capstone
course**



Find out how your degree will be structured and what courses you need to take at science.auckland.ac.nz/ug-biomedical



Minghan Yong

Bachelor of Science in Biomedical Science.

"I decided to pursue this degree as I wanted to understand and uncover the various ways the human body is affected by disease, and eventually be able to come up with solutions and ways to fight them."

"The subject allows students to enjoy the benefits of both the Faculty of Science and the Faculty of Medical and Health Sciences and get world-class teaching in state-of-the-art research facilities. Lecturers and tutors are truly helpful and are eager to share their expertise with students."

"The range of courses offered in the programme is huge. They encompass many important issues in modern society, and provide a solid foundation of important knowledge required for this field of study."

"I've enjoyed having the freedom to choose my own courses and being able to structure my knowledge around my interests. I chose to focus on cancer because of the dedication I saw from my professors in this area, and because of the impact this disease has had on countless people in the world."

"I would like to pursue a masters and eventually a PhD in the future. After that, I hope to become a cancer researcher; understanding and developing new therapies to fight cancer."

Careers in Biomedical Science

A field with future growth

Biomedical Science is a research-led field, which is currently one of the most rapidly developing areas within biological science.

It attracts a high level of public interest and has made transformative contributions over the past decade, stimulating growth in a wide range of industries including medical research, pharmaceuticals, veterinary science and agriculture.

As a Biomedical Science graduate you may find employment within a biotechnology company as a scientific officer or technician, alternatively you may become a science teacher, science writer or a biomedical researcher in a university or Government agency such as a Crown Research Institute.

Employment in biotechnology and pharmaceutical companies is especially buoyant in the United States and Europe, with growth expected in New Zealand.

Our Biomedical Science graduates have been employed in the following jobs:

- Life Sciences Consultant
- Research Assistant
- Embryologist
- Health Reporter
- Clinical Trials Data Manager

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A quick guide to undergraduate **Computational Biology**

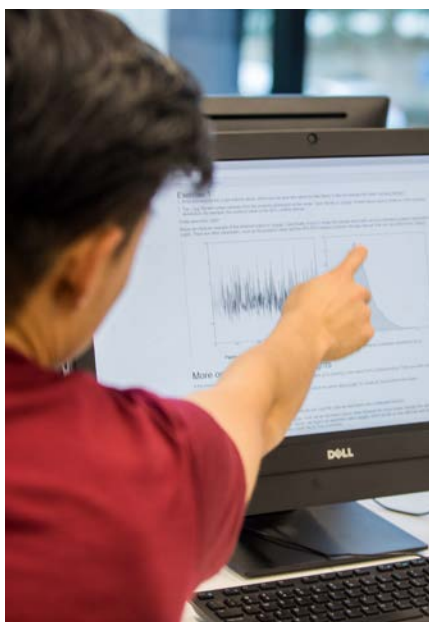
Biologists and life scientists now routinely require skills in computation and complex data analysis in order to conduct their research and apply the results.

Computational Biology is designed to equip you with fundamental knowledge and skills across biology, computer science, mathematics and statistics in order to develop computational biology, genetics and bioinformatics skill sets.

Studying Computational Biology at the University of Auckland means you'll be uniquely placed to learn from leading experts in the field, and exploit the opportunities available at a university ranked first in New Zealand for biology, and computer science and information systems*.

There are many routes into a degree in Computational Biology. If you've done any one of these subjects at high school, you will be well-equipped to get started: biology, chemistry, computer science, mathematics, statistics, physics.

*science.auckland.ac.nz/excellence



Explore and discover everything you need to know about studying
Computational Biology:
science.auckland.ac.nz/ug-comp-biology



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What you'll study in your Computational Biology degree



BAdvSci(Hons)

Topics you can study include:

- Algorithms and machine learning
- Biodiversity, ecology and evolution
- Genetics
- Statistical modelling
- Software development

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science.auckland.ac.nz/ug-comp-biology



Jeffrey Zhang

Bachelor of Science, majoring in Computer Science.

As a Computer Science student, Jeffrey talks about his interest in Computational Biology.

"I have been amazed by mathematics and physics since I was young. I wanted to pursue a subject that would let me learn more about these fundamental ideas at a deeper level, which led me to study Computer Science.

"I enjoy solving logical problems and find the challenges in my subject fascinating. Not only are they important problems with huge implications, but I also like that they are extremely mathematically grounded, yet make intuitive sense.

"Computational Biology leverages the power of mathematical models and efficiency of computer science to tackle problems that have interested biologists for centuries. In the current era of big data and never-before-seen computational power, there is much to learn.

"The Computational Biology specialisation is novel and there are many disruptions in this field due to the rise of big data and scientific technology.

"I wanted to conduct high calibre research, so I am looking forward to continuing my studies at a postgraduate level and pushing our collective knowledge of this field forward."

Careers in Computational Biology

A new biology for the digital age

Specialising in Computational Biology can open up opportunities in both scientific research and industry in the biomedical and life sciences sectors, including all areas of biology from horticulture and agriculture through molecular biology and genome biology to ecology, marine biology and medicine.

You'll develop expertise in computer science, statistics and data analysis, which provides you with the core skills necessary for a career in computational biology, but are also transferable to careers in software design, software development and data analysis, especially where some knowledge of the life sciences is useful.

You could find yourself modelling complex human diseases, analysing large amounts of genomic

data, or creating computational models for gene editing in commercial species.

Your ability to develop algorithms, statistical methods and models to understand biological systems will give you cutting-edge skills to tackle the deluge of big data in the digital age.

Jobs for our Computational Biology graduates include:

- Bioinformatician
- Biotechnology consultant
- Data scientist
- Environmental scientist
- Academic researcher
- Pharmaceutical technician
- Scientific adviser
- Software designer

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A quick guide to undergraduate Ecology

Ecology studies the interaction between animals, plants and microbes, and their environment, as well as the distribution and diversity of life. As an Ecology student at the University of Auckland you'll benefit from our vast biological, environmental and marine knowledge and expertise, as you learn within a multi-disciplinary framework.

Ecology students cover topics such as environmental conservation and management, biosecurity, marine ecology and conservation, evolution and behaviour, and ecological modelling. You'll go on plenty of field trips, which will give you the chance to apply your learning in a real, meaningful way. You'll even study computational, statistical and modelling techniques and learn how they are used to solve ecological problems. The University of Auckland is ranked first in New Zealand for environmental sciences, which includes Ecology*. You can also study Ecology as a pathway in the Biological Sciences major of a Bachelor of Science.

Students intending to study Ecology at the University of Auckland should have a broad background in general sciences and a good understanding of biology and chemistry.

A good basis in mathematics and strong reading and writing skills are also important.

*science.auckland.ac.nz/excellence



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Ecology:
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**2 degrees
at once**



What you'll study in your Ecology degree



BAdvSci(Hons)

Topics you can study include:

- Biodiversity and evolution
- Environmental and resource management
- Quantitative ecology and modelling
- Conservation, pest management and restoration

**Do research
with an
academic
mentor**



Find out how your degree will be structured and what courses you need to take at

www.science.auckland.ac.nz/ug-ecology



Abi Hill

Currently studying Ecology and Statistics.

"I grew up tramping and always loved seeing what cool organisms live around us. What budding ecologist hasn't been inspired by David Attenborough?"

"Ecology is unique in that it combines biology, chemistry, environmental science and geography. No matter what your passion within the discipline, there is always more to learn and discover."

"My favourite part of studying Ecology is poking around in the soil looking for invertebrates or rushing off to observe a bird you heard in the distance."

"The best part of my courses are the field trips. I enjoy applying the lecture material and seeing some beautiful places in the North Island at the same time."

"Many assignments have real-world applications. It's stimulating to know that one day you could be writing a report that may have major environmental and policy impacts. Combining curiosity about the natural world and modern technology allows for extraordinary discoveries to be made."

"I'm planning on doing postgraduate study at some point, but I'll take time off next year to work. Eventually, I hope to become a herpetologist in some capacity. I need a bit more excitement in my life, and working with venomous snakes or lizards will help with that!"

Careers in Ecology

A profession with global impact

Challenges to the conservation of species, the wellbeing of our environment and the ecosystems that sustain it, are growing. Meeting these challenges head on requires a deep understanding of the ecological interactions in the world around us.

It also requires an ability to apply a range of new techniques and technologies, from analysing the molecular genetics of small populations to tracking plants and animals across entire landscapes.

As an Ecology graduate you will have developed field, laboratory and analytical skills that many organisations and companies in New Zealand and overseas will find valuable.

These skills could lead you into a career in biosecurity, conservation, ecological restoration,

pest management or environmental education and community liaison. Other potential roles include environmental policy, science advisory, or ecological and environmental research with research agencies or consultancies.

Our Ecology graduates have been employed in the following jobs:

- Ectotherm keeper, Auckland Zoo
- Teacher, Howick Intermediate
- Project consultant, SLR Consulting
- Cape to City assistant, Hawke's Bay Regional Council

Other positions and roles include:

- Biosecurity and pest management
- Roles in ecological restoration
- Environmental policy, consulting and science advisory roles

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A quick guide to undergraduate **Exercise Sciences**

Are you fascinated by what influences human performance in exercise, sport and the workplace?

Studying Exercise Sciences at the University of Auckland offers you a practical and diverse learning experience, and gives you access to brand new, state-of-the-art laboratories and equipment.

Laboratory work plays an important role in Exercise Sciences and is based around the analysis and evaluation of data collected from humans engaged in physical activity. Throughout your studies you'll develop the skills you need to work with people in movement science, health, wellness, rehabilitation and sport science.

If you're interested in studying Exercise Sciences with us, it would be beneficial to have studied high school biology or human biology. Chemistry, physics, calculus, statistics and physical education also provide helpful background knowledge.

Can't choose which subject to study?

With so many options it's sometimes hard to choose what you want to study, but we've got you covered. You can study a double major with our Bachelor of Science to gain a broader base of skills and knowledge.

Complementary majors include:

[Biological Sciences](#)

[Chemistry](#)

[Physics](#)

[Physiology](#)

[Psychology](#)

[Statistics](#)

Explore and discover everything you need to know about studying **Exercise Sciences**:

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29
in the world



Sports-related
subjects

What you'll study in your Exercise Sciences degree

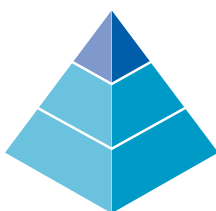


BSc

Topics you will study include:

- Human anatomy
- Movement neuroscience
- Exercise physiology
- Biomechanics
- Sport and exercise psychology

INCLUDES A
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capstone
course**



Find out how your degree will be structured and what courses you need to take at
science.auckland.ac.nz/ug-exercise-sci



Courtney Hanlon

Bachelor of Science, majoring in
Exercise Sciences

"I chose the University of Auckland as I knew of its high ranking. My father studied at the University, and it has the best programmes for what I wanted to study."

"I have always had a huge interest in sport, nutrition and exercise, and I found myself wanting to learn more about it in my free time. I love learning about the body, how it functions, and how to improve in a health or physical fitness way."

"I like that Exercise Sciences is relatable and relevant, and has plenty of hands-on learning. It's great to be able to have fun with friends at the same time as learning!"

"In the future I would like to complete an honours degree and hopefully progress to do my masters in Clinical Exercise Physiology."

Careers in Exercise Sciences

An important discipline for everyday life

Exercise Sciences is an important discipline that relates to all aspects of our everyday life. It is key to understanding how the human body grows, and how ageing and disease impact physical activity.

There is a growing demand for people who can not only research and analyse performance techniques, but can work as allied health professionals to optimise human performance to improve general health and wellbeing through exercise.

Studying Exercise Sciences will allow you to develop practical skills for critical and analytical thinking, communication, independence, collaboration and the processes of experimentation.

As a graduate you will be prepared for a career in exercise science, movement science, health, wellness, physical fitness, rehabilitation, sport science and clinical exercise physiology.

Our Exercise Sciences graduates are employed in the following jobs:

- Director, Optimize Health
- Public Health Advisor, Auckland Regional Public Health Service
- Owner/Operator & Fitness Coach, Train Harder, Train Smarter
- Respiratory Physiologist, NZ Respiratory and Sleep Institute
- Strength And Conditioning Coach, Next Level Netball

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A quick guide to undergraduate Food Science and Nutrition

We all need to eat, and there is a wealth of science behind the food we eat, how it's made, and how it affects our health. This science is part of a fascinating subject that is highly relevant to the lives of everyone: Food Science and Nutrition.

When studying this subject at the University of Auckland, you choose between two distinct pathways: Food Science or Nutrition.

If you choose the Food Science pathway, you'll study topics like food manufacturing, processing and production, food components and their properties, food safety, and product development.

If you choose the Nutrition pathway, you'll study topics like human nutrition, the health and wellbeing of individuals and populations, and the environmental, social, economic and cultural influences on eating behaviours.

Food Science and Nutrition involves many scientific disciplines. You'll find it useful to have a broad science background, including high school chemistry and mathematics for the Food Science pathway. High school biology, physics and statistics are helpful but are not essential. Note that high school food technology is not required because it is not really related to Food Science at University.



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**award-winning undergraduate
Chemistry laboratory**

What you'll study in your Food Science and Nutrition degree

If you follow the **Food Science pathway**, your study will include:

- A consolidation of chemistry, biology and mathematics subjects in first year
- Taking foods apart to look at the individual food components, their functionalities and nutritional quality
- Food microbiology, food processing, food preservation, emerging technologies and their benefits
- Product development

If you follow the **Nutrition pathway**, you'll study topics such as:

- Human anatomy and physiology
- Biochemistry and metabolism

- Population health
- The many factors influencing eating behaviours

Find out how your degree will be structured and what courses you need to take at

science.auckland.ac.nz/ug-food-nutrition

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Zoe Xie

Bachelor of Science in Food Science and Nutrition (Food Science pathway).

"I am really curious about food composition and structure. I've always wondered why most of the healthy food is not that delicious, while the junk food tastes so good. I hope to one day produce one kind of food that is healthy and has perfect taste as well."

"The University of Auckland is one of the world's highly ranked universities and the Faculty of Science has plenty of knowledgeable professional staff. The study environment is really good, and my fellow Food Science students are all passionate about what we do."

"The study of Food Science is amazing and interesting. I've learned so much in my studies. We have a lot of labs where we can actually explore the samples – plus, we have a lot of fun! I can't wait to get to the next level in my studies."

"In the future I hope to find employment where I can work with food every day, possibly where I can explore and produce food."

"The University of Auckland provides brilliant opportunities for students. For example, I am going to study at the University of California as an exchange student in one of my semesters. I am so excited and looking forward to exploring life in the USA!"

Careers in Food Science and Nutrition

Food Science

The food and beverage industry and food research institutes need well-trained Food Science graduates who can help to ensure safe, innovative and high-quality food production. Industry is constantly striving to meet consumer demands for foods that are not only safe but healthy, sustainable, natural, convenient and have good sensory properties to maintain wellbeing. Your day-to-day work could include research, food and ingredient manufacturing, food safety, product development and food analysis.

Nutrition

With an increasing awareness of the role of the foods we eat and their effect on health, our nutrition graduates are equipped to work in health promotion in the community, health policy in government, nutrition consulting as a registered nutritionist, nutrition information services, food industry, and the health and fitness industry. You could also choose to undertake specialised post graduate training in order to register as a dietitian.

Our Food Science and Nutrition graduates can be employed in many aspects of the Food, Nutrition, and Health industries. Some examples are:

- Danone, and Danone Nutricia Specialised Nutrition, Nestle, Bronson & Jacob and other large food multinationals;
- Heinz-Watties, Synlait, Westland Milk, Fonterra, Ceres and many classic NZ food companies;
- Retail health consultant, Auckland Clinical Studies;
- Ministry of Primary Industries, The Ministry of Health and other regulatory and policy government roles;
- Registered Nutritionist at companies such as Radix Nutrition, Zesperi;
- Public health positions at The Heart Foundation, Healthy Auckland Together, Health Promotion Agency, and Healthy Families NZ;
- Plant and Food Research and other research organisations;
- Many laboratory and testing companies.

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A quick guide to undergraduate Marine Science

Marine Science is the scientific study of our oceans in areas such as aquaculture, coastal processes, marine biology, marine conservation and oceanography. Studying Marine Science at the University of Auckland gives you access to purpose-built laboratory facilities, as well as trips to the Leigh Marine Reserve – New Zealand's first marine reserve.

The Leigh Marine Laboratory and its facilities (including a 14m research vessel, diving facilities, a flow-through seawater system and meteorological station) offers students unique opportunities to study our oceans and environment. The University of Auckland is ranked first in New Zealand, and in the top 100 in the world, for earth and marine sciences*. Our credentials are impressive, but don't just take our word for it – read what one of our students has to say, overleaf.

You don't have to have taken any particular subject at high school to study Marine Science with us. However biology, chemistry, geography, physics, mathematics or statistics will provide you with helpful background knowledge. You'll also use written and oral communication skills, so high school English is a useful subject too.

*science.auckland.ac.nz/excellence

Explore and discover everything you need to know about studying
Marine Science:
science.auckland.ac.nz/ug-marine



THE UNIVERSITY OF
AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

SCIENCE



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- ✓ **Bachelor of Advanced Science (Honours) (BAdvSci(Hons))**

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**2 degrees
at once**



Our subject is
ranked in the
TOP 100
worldwide

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TOP
100
in the world



Earth and
Marine Sciences

What you'll study in your Marine Science degree

BSc

Topics you can study include:

- Biodiversity and marine ecology
- Fisheries and aquaculture
- Environmental modelling
- Data analysis
- Climate and ocean processes

BAdvSci(Hons)

Topics you can study include:

- Dynamics of marine systems
- Molecular ecology and evolution
- Environmental chemistry
- Water quality science
- Coastal and resource management

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Careers in Marine Science

A world of opportunities

As a graduate majoring in Marine Science, the skills you acquire will enable you to guide your career in the marine environment.

New Zealand has the world's fourth largest exclusive economic zone. It must be managed sustainably to ensure it provides for our social and economic wellbeing.

There are plenty of issues to investigate, from the management of New Zealand's extensive marine areas, to oceanography and climate impacts, to the welfare of marine animals and fish stocks. All of these issues need good scientists and well-trained technicians who understand the marine environment, and means the number of jobs in marine science is increasing steadily.

Whether you are interested in seafood, conservation, management or contributing to the science that will influence our future, you will find employment in a wide range of organisations.

Our Marine Science graduates have been employed in the following jobs:

- Aquarist, Kelly Tarlton's
- Survey engineering technician, Land Partners Ltd
- Aquaculture and water quality technician, Pacific Reef Fisheries
- Water and well systems engineer, American Samoa Power Authority
- Marine biologist, Norwegian Institute of Marine Research
- Creative brand strategist, Mecca Entertainment
- Laboratory technician, AsureQuality
- Fisheries Act observer, Ministry for Primary Industries
- Oceanographer, US Naval Research Laboratory



Melanie Hayden

Māori, Ngati Huia

Bachelor of Science, majoring in Marine Science.

"I've always known I'd go to uni to study science, and Marine Science was the best fit because I've always loved being around the water."

"The programme isn't all theory. We go out on fieldtrips to get the practical skills we're likely to need in the workforce."

"In particular I really enjoyed the Stage II Biological Sciences field trip to Whangarei Heads where we spent the mornings gathering data and the rest of the day writing out full scientific reports. It was full-on but it taught me a lot about working under pressure and prepared me well for the workload of third-year study!"

"I'm interested in getting into fisheries research, or getting involved in marine spatial planning, but before I do that I plan to continue studying, either a postgraduate diploma or a masters in Marine Science."

"I'm lucky enough to have received the University of Auckland Chancellor's Award for Top Māori and Pacific Students. It helped me to just focus on my studies, as it paid for accommodation in my first year, as well as covering all of my tuition fees for three years."

"The Tuākana programme also helps me, by providing a group environment to study in so I'm not 'going it alone.'"

Have any questions? Our Science Advisers are happy to help

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A quick guide to undergraduate Pharmacology

Pharmacology involves the study of the actions of drugs and chemicals on cells, tissues and the whole body. It includes finding out how drugs produce beneficial and adverse effects, with the aim of improving the way drugs are tested and to give greater benefit in the treatment of disease.

As a Pharmacology student you'll study the cellular and chemical abnormalities of disease states, so that you'll be able to design specific molecules to correct the abnormality. Studying Pharmacology requires an understanding of normal body functions (biochemistry and physiology) and the problems that occur (pathology).

You don't have to have taken any particular subject at high school to be able to study Pharmacology with us. High school biology, chemistry, physics and mathematics are beneficial because they provide helpful background knowledge, but they're not essential.

Can't choose which subject to study?

With so many options it's sometimes hard to choose what you want to study, but we've got you covered. You can study a double major with our Bachelor of Science to gain a broader base of skills and knowledge.

Complementary majors include:

- [Biological Sciences](#)
- [Chemistry](#)
- [Mathematics](#)
- [Physiology](#)
- [Psychology](#)
- [Statistics](#)

Explore and discover everything you need to know about studying
Pharmacology:
science.auckland.ac.nz/ug-pharmacology



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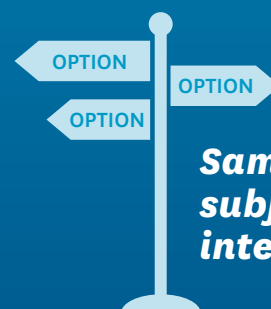


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Home of the
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What you'll study in your Pharmacology degree



BSc

On average it takes three years to complete a BSc. Courses you can study include:

- Pharmacology and Toxicology
- Molecular Pharmacology
- Pharmacokinetics and Drug Toxicity
- Pharmacology of the Brain and Body
- Integrated Pharmacology

INCLUDES A
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capstone
course**



Find out how your degree will be structured and what courses you need to take at

[science.auckland.ac.nz/
ug-pharmacology](http://science.auckland.ac.nz/ug-pharmacology)



Simon Delos Reyes

Bachelor of Science in Pharmacology

"I've always been fascinated with human health and disease, and I really enjoyed chemistry at school, so Pharmacology seemed a natural fit. I'm also big into tennis, and love looking at statistical data surrounding tennis and other sports, so I also ended up taking a number of Statistics courses up to Stage III, which proved to be helpful for my Pharmacology major."

"My lecture material was always riveting and covered the development of drug treatments for brain and other organ disorders, how drug processing differs in the young, the pregnant and the elderly, and the study of toxic compounds. Our lab sessions were very helpful for learning important practical skills, and for deepening our understanding of lecture material. The animal-handling labs were particularly interesting!"

"I completed a Summer Research Scholarship in the Davidson Lab on 'Using Kidney Organoids to Model Fibrosis'. This was an incredible experience as I was able to develop a variety of practical and analytical skills, while being able to feed off the wisdom and knowledge of the more experienced members of the lab. I also got to give a presentation on my project, which was out of my comfort zone, but I ended up enjoying the experience and learning a lot from it."

"Truly, the very best thing about Pharmacology is the lecturers and other staff. They are knowledgeable, engaging and friendly, and are willing to take the time to explain tougher concepts to you one-on-one."

Careers in Pharmacology

An assured future

Pharmacology is the basis for much of the research and development of new drugs. The future of pharmacology is assured, as there remain many diseases for which neither cure nor palliation have been devised – for example, Alzheimer's disease, neurodegenerative diseases and many forms of cancer. Even when a cure or treatment is available, few medicines are perfect and the search for better drugs continues. In addition, other scientists such as physiologists, biochemists and psychologists often find knowledge of pharmacology useful as they use drugs to probe and define the biological systems they are studying.

Pharmacology graduates can find employment in the following areas:

- Teaching and research in higher educational institutions
- Clinical teaching and research
- Biotechnology
- Pharmaceutical research development
- Government department and research institutions
- Medical publishing and drug information
- Toxicology

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A quick guide to undergraduate Physiology

Physiology is the study of how living organisms work, with a major focus on understanding what goes wrong in disease.

Physiology is highly quantitative and has close links with biochemistry, biophysics, molecular biology, mathematical modelling and pharmacology, as well as zoology and plant biology. A large part of medical research is centred on Physiology. It is an active and developing science that promises to be one of the most exciting disciplines for the foreseeable future.

You don't have to have taken any particular subject at high school to be able to study Physiology with us. High school biology, chemistry, physics and mathematics are beneficial because they provide helpful background knowledge, but they're not essential.

Can't choose which subject to study?

With so many options it's sometimes hard to choose what you want to study, but we've got you covered. You can study a double major with our Bachelor of Science to gain a broader base of skills and knowledge.

Complementary majors include:

[Biological Sciences](#)

[Chemistry](#)

[Exercise Sciences](#)

[Pharmacology](#)

[Psychology](#)

[Statistics](#)

Explore and discover everything you need to know about studying
Physiology:

science.auckland.ac.nz/ug-physiology

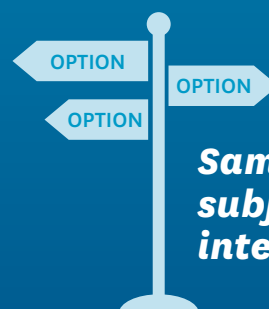


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What you'll study in your Physiology degree



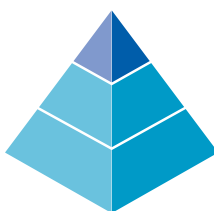
BSc

On average it takes three years to complete a BSc. Courses you can study include:

- Human Structure and Function
- Mechanisms of Disease
- Cardiovascular Biology
- Endocrinology of Growth and Metabolism
- Neuroscience

INCLUDES A

student-led capstone course



Find out how your degree will be structured and what courses you need to take at

science.auckland.ac.nz/ug-physiology



Tabitha Leong

Bachelor of Science in Physiology

"I've always had an aptitude for science, and from a young age I was interested in how the body functions in health and disease. Coming from a background of 11 years of dance training, I've been fascinated with how different aspects of the body are able to work together to carry out certain tasks which appear seemingly impossible."

"A BSc in Physiology feels like the perfect degree as I can pursue my interests in the human body and have the freedom to explore other interesting fields, because the BSc is very flexible. This has allowed me to delve into areas that interest me, such as the cardiovascular and nervous systems, as well as get a taste of other subjects like Psychology and Exercise Physiology."

"The biggest thing I will take away is how to be an independent learner by thinking critically and evaluating evidence. I've been given the skill set to expand my own knowledge in emerging areas of research or in subjects that particularly interest me. Not only can I take away specific knowledge from my courses, I also have the skills to be able to expand and build on this knowledge."

"I've loved having the opportunity to learn from an amazing range of female researchers and teachers, who are at the top of their fields. They are all so inspiring and driven, it is obvious they love what they do. When you learn from someone who has a genuine passion for what they teach, they pass that passion on to their students. That has been the most enriching part of my degree."

Careers in Physiology

An active and developing science

While Physiology is an important subject in its own right, it offers broad training in scientific and technical skills that naturally feed into other disciplines. Physiology is an active and developing science which promises to remain one of the most exciting biological disciplines for the foreseeable future. Physiologists have many roles in society as physiology occupies a central place amongst the biological and medical sciences.

Graduates with a background in Physiology can find employment in the following areas:

- Biomedical research
- Industrial research
- Medical journalism and science communication
- Sports physiology
- Clinical professions such as audiology, optometry and veterinary medicine

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