

Mātai Kori Tinana Undergraduate Exercise Sciences



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

What you will learn

Exercise scientists study the mind, muscle, mechanics and metabolism of the moving human body and the role of exercise in human health.

Studying Exercise Sciences will facilitate skills for lifelong learning, critical and analytical thinking, communication, independence, collaboration and intellectual curiosity.

In laboratory classes you will develop hands-on skills in interacting with human participants and measurement of human activity and performance.

You will develop an understanding of how the body moves, how it responds to physical activity (and inactivity), how fitness levels can be tested and adapted, and the connections between physical activity and health.

While there are no specific subjects required from high school to be eligible to study Exercise Science, chemistry, physics, calculus, statistics and physical education all provide helpful background knowledge.

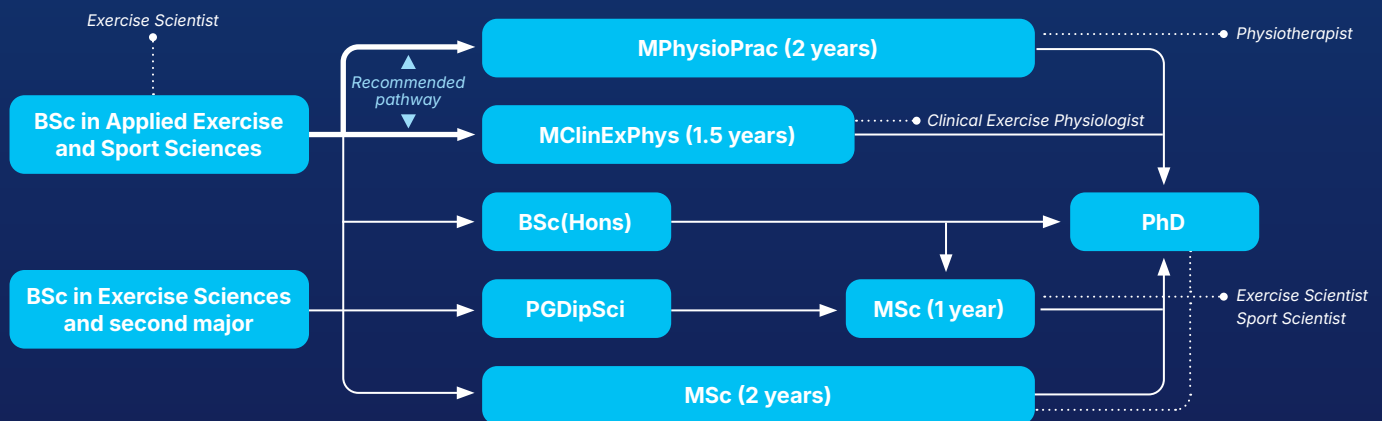
Choosing a subject

With so many options it's sometimes hard to choose what you want to study, but we've got you covered. The Applied Exercise and Sport Sciences specialisation, which is the equivalent of two majors, is for students who want a career in the exercise sciences. It provides all the knowledge you need for international accreditation as an Exercise Specialist at the end of your BSc.

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



Career opportunities

An important discipline for everyday life

Exercise Sciences is an important discipline that relates to all aspects of our everyday life. Our courses cover human anatomy, exercise physiology, biomechanics, exercise prescription, exercise and sport psychology, and movement neuroscience.

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.

As a graduate you will be prepared for a career in exercise science, high-performance sport, sports science, health and wellness, physical fitness, and movement science.

This degree provides the perfect pathway to further study in order to pursue a career in physiotherapy and clinical exercise physiology.

Jobs related to Exercise Sciences:

- › Exercise scientist
- › Sport scientist (consultant in biomechanics, exercise, nutrition, physiology)
- › Corporate exercise specialist
- › Human movement scientist
- › Injury prevention consultant
- › Respiratory physiologist
- › Clinical exercise physiologist
- › Cardiac physiologist
- › Physiotherapist

What you can study

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



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

auckland.ac.nz/science/ug-exercise-sci

Applications close on 8 December.



"Growing up I was always very active in playing sports and dancing ballet. My love for the human body came from ballet. It taught me which muscles are used in a movement, and how to improve a movement by understanding how the body works. I was driven to carry on learning about the human body, so I enrolled in a Bachelor of Science in Exercise Sciences, hoping to apply it to both exercise and the treatment of people living with chronic conditions and disease."

Sasha Douglas
PG Dip in Clinical Exercise Physiology.

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Have any questions?
Contact the Student Hub

auckland.ac.nz/student-hubs

Mātai Pūtaiao Kai me Taioranga Kai Undergraduate Food Science and Nutrition



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.

What you will learn

Food Science and Nutrition is the science behind the food we eat. From the effect food has on our behaviour and wellbeing, to new applications in food development, processing, compliance and food safety.

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

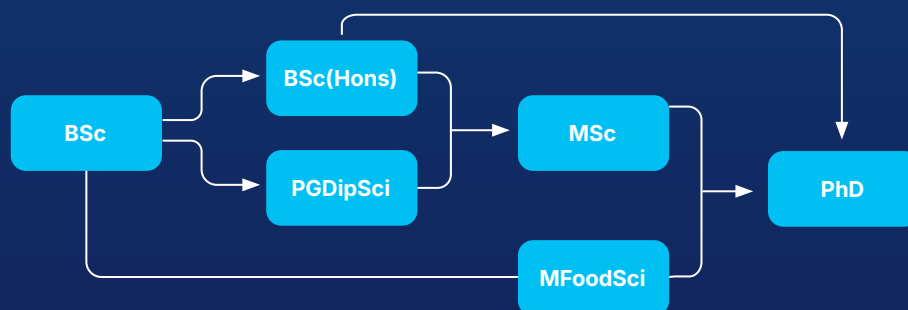
If you choose the Food Science pathway, you'll study topics like food manufacturing, processing and production, food components and their properties, food safety, and product development.

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 includes courses from Biological Sciences, Chemistry, Medical Science and Population Health, to answer questions like:

- > What constitutes a healthy diet?
- > Is there a way to engineer food to improve its nutritional value?
- > How does the human body break down food to provide us with the energy we need?

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. High school biology, physics and statistics are helpful but are not essential. Note that high school food technology is not required.



Career opportunities

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, research, nutrition consulting as a registered nutritionist, nutrition information services, food industry, and the health and fitness industry. You could also choose to undertake specialised postgraduate 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, Zespri;

- › 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.

What you can study

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 more about how your degree will be structured and what courses you need to take at

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

Applications close on 8 December.



"I have always had a passion for creating food; from reading cookbooks, being hands-on in the kitchen doing little experiments and watching how it's made via video online. But really keeping it all together by understanding all the processes that goes on behind bringing these products to life. My ultimate dream was to see something that I created on a supermarket shelf and being enjoyed by consumers, and a part of that started off with doing this degree."

Bonnie Lam
BSc in Food Science and Nutrition (Food Science pathway).

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Mātai Pūtaiao Moana Undergraduate Marine Science



Marine Science draws on a range of disciplines to advance our understanding of the functioning and management of the oceans. Our students have a diverse range of ethnic backgrounds including Māori and Pacific people, and come from all over New Zealand and around the world.

What you will learn

Marine Science is the scientific study of the oceans and combines research areas in aquaculture, coastal processes, fisheries science, marine biology, marine conservation, marine ecology, marine geology, ocean management and oceanography to explore the marine habitat. Alongside learning about the theory of Marine Science, you will have the opportunity to develop practical skills in research design and analysis of the marine environment.

Leigh Marine Laboratory

Marine Science is centred at the Leigh Marine Laboratory, which offers unique opportunities in marine research. Facilities include a 16m research vessel and several smaller boats, diving support, a flow-through seawater system for tank experiments, onsite accommodation for students and visitors, a library and access to the University's online resources, aquaculture facilities, a meteorological station and well-equipped laboratories.



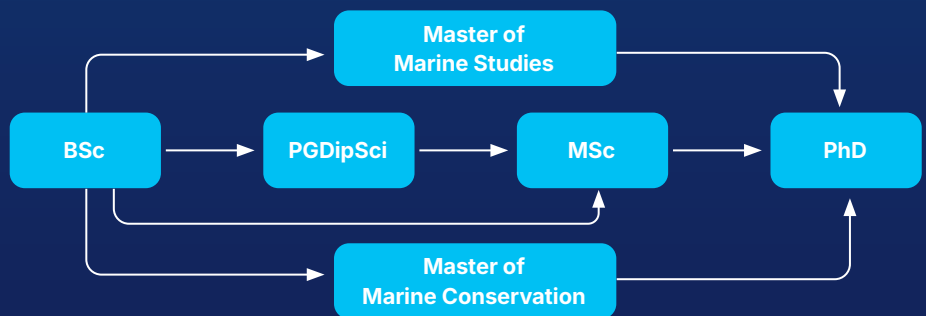
You don't have to have taken any particular subject at high school to study Marine Science with us. However, biology, chemistry, geography, physics, mathematics or statistics will provide you with helpful background knowledge. You'll also use written and oral communication skills, so high school English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

Choosing a subject

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
- > Earth Sciences
- > Environmental Science
- > Geography
- > Mathematics
- > Statistics



Career opportunities

A world of opportunities

The versatility of Marine Science and its multidisciplinary relationship with other sciences means our graduates find employment in the areas of aquaculture, conservation and environmental management and research focused on 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

What you can study

- > Biodiversity and marine ecology
- > Fisheries and aquaculture
- > Environmental modelling
- > Data analysis
- > Climate and ocean processes
- > Dynamics of marine systems
- > Molecular ecology and evolution
- > Environmental chemistry
- > Water quality science
- > Coastal and resource management



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

auckland.ac.nz/science/ug-marine

Applications close on 8 December.



"I was inspired to pursue the postgraduate qualification because I wanted to get a taste of the research process. After getting advice from multiple supervisors, I came to the conclusion that doing a masters would be my best option. I knew the University of Auckland was my preferred choice of university to study Marine Science, with the Goat Island/ Leigh Marine Lab facilities, it was an easy choice for me."

Gemma Cunnington
Bachelor in Marine Science (BSc)
MSc in Marine Science

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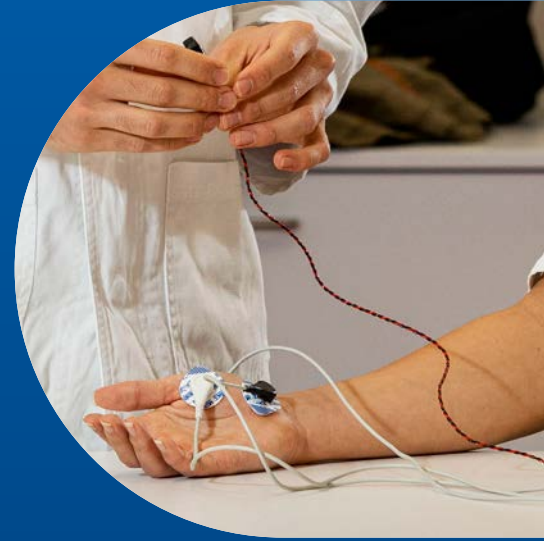


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Mātai Whaiaroaro Undergraduate Physiology



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

What you will learn

Physiology is the study of how living organisms function, from the cellular to the whole-body level. If we understand how organisms work, we can understand what goes wrong in disease, and develop a scientific basis for its treatment.

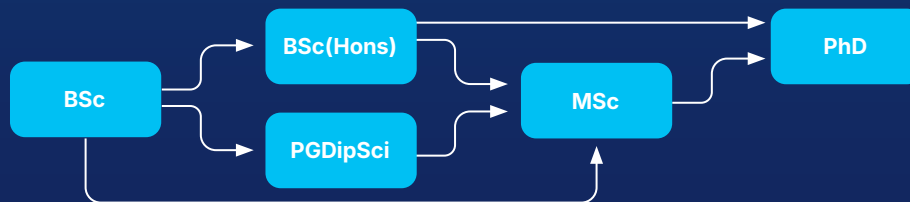
Physiology is highly quantitative and has close links with biochemistry, molecular biology, mathematical modelling, pharmacology, zoology and neuroscience.

Choosing a subject

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



Career opportunities

An active and developing science

Physiology provides a great foundation to find employment in research or in the rapidly growing healthcare sector in New Zealand and overseas.

A Physiology background is also very desirable for clinical professions. For example, it could lead to work in the areas of audiology, medicine, optometry and veterinary medicine. Physiology has always been important in medical research and drug development.

Graduates with a Physiology background are employed in a range of professions, in areas that include:

- > Biomedical science
- > Clinical research science
- > Exercise physiology
- > Healthcare science
- > Pharmacology
- > Audiology
- > Medicine
- > Optometry
- > Veterinary medicine

What you can study

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



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

auckland.ac.nz/science/ug-physiology

Applications close on 8 December.



"A few papers into my first year, I realised it was the human physiology and neuroscience aspects that intrigue me the most within biology. At this point, I changed my major to physiology which offers a good selection of papers that delve into neuroscience, cardiac physiology, and research – right up my alley!"

Farheen Kothiwala
BSc (Hons) in Physiology

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