



TE KUNENGA | MASSEY  
KI PŪREHUROA | UNIVERSITY  
UNIVERSITY OF NEW ZEALAND

THAT MOMENT

# SCIENCE

IMPACTS

THE WORLD,  
AOTEAROA AND YOU





# Rankings & Accreditation

**TE WĀHANGA PŪTAIAO SEEKS INNOVATIVE SOLUTIONS TO GLOBAL CHALLENGES, WITH RECOGNISED EXPERTISE IN AREAS SUCH AS VETERINARY SCIENCE, AGRICULTURE, FOOD TECHNOLOGY, INFORMATION SCIENCES AND CONSTRUCTION.**

## **QS (QUACQUARELLI SYMONDS) WORLD UNIVERSITY RANKINGS**

### **Veterinary Science**

Massey is ranked as 28th in the world for veterinary science.

### **Agriculture and Forestry**

Massey is world-ranked and New Zealand's No 1 university in agriculture.

### **Environmental Sciences**

The environmental sciences programme is ranked in the top 350 in the world.

### **Architecture & Built Environment**

Ranked in the world's top 200 universities.

### **Psychology**

Ranked in the world's top 250 universities.

### **Biological Sciences**

Ranked as one of the top 450 universities in the world for biological sciences.

### **Computer Science and Information Systems**

Ranked as one of the top 650 universities.

## **SHANGHAIRANKING**

### **Veterinary science**

Massey ranks 42nd in the world for veterinary science and in the top 4 in Australasia.

### **Food science and technology**

Ranked as one of the top 75 universities worldwide for Food Science and Technology.

### **Agricultural Science**

Massey University is ranked No.1 in New Zealand.

## **INSTITUTE OF FOOD TECHNOLOGIST (IFT) ENDORSEMENT**

Both majors of the BFoodTech (Hons) are approved by the US-based Institute of Food Technologists (IFT).

## **ROYAL INSTITUTION OF CHARTERED SURVEYORS (RICS)**

Massey's Bachelor of Construction is accredited by the Royal Institution of Chartered Surveyors. This global professional body promotes and enforces international standards in the valuation, management and development of land, real estate, construction and infrastructure.

## **NEW ZEALAND INSTITUTE OF QUANTITY SURVEYORS (NZIQS)**

The quantity surveying specialisations in the Bachelor of Construction and Master of Construction are accredited by the New Zealand Institute of Quantity Surveyors for graduate membership.

## **PACIFIC ASSOCIATION OF QUANTITY SURVEYORS (PAQS)**

The Bachelor of Construction (Quantity Surveying major) is accredited by the Pacific Association of Quantity Surveyors (PAQS).

## **IESANZ ACCREDITATION**

Massey's Graduate Certificate in Science and Technology (Lighting) is accredited by Illuminating Engineering Society of Australia and New Zealand (IESANZ). Completing this qualification provides academic requirements for membership.

## **GLOBAL FARM PLATFORM**

Massey's Dairy 1 farm is part of the Global Farm Platform, an international group for optimisation of grazing livestock production systems.

# Science, Agriculture and Technology

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## DEGREES

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07 Bachelor of Agribusiness  
(BAgribusiness)

11 Bachelor of Agricultural Science  
(BAgSci)

13 Bachelor of Animal Science  
(BAnSci)

17 Bachelor of Construction  
(BConst)

21 Bachelor of Food Technology  
with Honours (BFoodTech(Hons))

25 Bachelor of Horticultural Science  
(BHortSci)

27 Bachelor of Information Sciences  
(BInfSc)

33 Bachelor of Science (BSc)

49 Bachelor of Veterinary Science  
(BVSc)

## OTHER QUALIFICATIONS

19 Diploma in Facilities  
Management



### UPDATED MARCH 2024

The information contained in this publication is indicative of the offerings available in 2024 and subsequent years. This information may be subject to change. While all reasonable efforts will be made to ensure listed qualifications are offered and regulations are up to date, the University reserves the right to change the content or method of presentation, or to withdraw any qualification or part thereof, or impose limitations on enrolments. For the most up to date information please go to [massey.ac.nz](https://massey.ac.nz)

# Studying Sciences, Agriculture and Technology

**Massey graduates are advancing knowledge and making a difference. The sciences offer a wide and exciting range of options for study. Those who understand science have an important part to play in our future.**

Science is key in our professional and applied learning qualifications, including our veterinary qualifications, construction, food technology and information sciences.

Massey's heritage is in science and agriculture. Leaders in their fields came to New Zealand to teach students and develop the research qualifications that underpin New Zealand's success today.

The University continues to attract leading researchers from around the world who choose to base themselves in New Zealand and continue to work in internationally leading research.

Our students benefit from these thought leaders, their involvement in the latest findings and their connections to fellow expertise around the world.

## PATHWAYS FOR SCIENCES

Your successful future matters to us, and we will help you get to where you want to be. If you don't have University Entrance we can help. Take a look at our Fast Track Foundation (Certificate of University Preparation). If you have University Entrance and need to catch up one or more subjects then look at page 4 or the information on our website.

## SCHOLARSHIPS

New Zealand's science institutions want employees who know their industry and invest in the future workforce by providing scholarships to students.

## TRAVEL WHILE YOU STUDY

Our Student Exchange Programme provides an international experience with the chance to study courses at overseas universities and cross-credit them back to a Massey qualification. You will pay the same tuition fees while abroad and it's a great chance to gain the overseas experience and knowledge that many employers value.

Some of the top science universities available within the exchange programme are:

- Nanyang Technological University, Singapore
- University of Calgary, Canada
- University of California, USA
- University of Edinburgh, Scotland
- University of Wisconsin-Madison, USA
- Wageningen University, The Netherlands.

## GO ON, APPLY FOR OUR SCHOLARSHIPS

Why not fund your study with a share of the dollars on offer every year?



## STUDY ABROAD

Scan to enquire or apply.



# Nau mai Haere mai



## WELCOME TO THE COLLEGE OF SCIENCE

**The demand for people who understand the sciences and technology continues to grow. Now, more than ever before, the scale of economic, technological, scientific, environmental, social, cultural and political change is enormous.**

Massey offers unique educational qualifications that combine innovative academic study and the excitement of discovery. With the support and intellectual capabilities of a diverse community, you will learn within a truly unique interdisciplinary atmosphere.

You will become a student in a community of world-leading research groups. Our excellent teachers will guide you through your studies. We provide you with transformative learning experiences to prepare you for success in your chosen field, and together we can deliver globally relevant solutions to fundamental and applied scientific challenges.

Our degrees provide the in-depth knowledge and the skill-based learning employers want. We're flexible with our offerings so you can focus on what you are passionate about. This guide is a starting point aimed at helping you think about your options. We encourage you to explore it and to talk with our friendly staff for further guidance to achieve your goals.

Sciences and technology are great study choices for an exciting and rewarding career, and we look forward to welcoming you to Massey University.

### **Professor Ray Geor**

Pro Vice-Chancellor  
College Of Sciences





## Am I ready for study?

Your successful future matters to us, and we will help you get to where you want to be.

### ENTRY REQUIREMENTS

- A** All students must have a university entrance qualification.

AND

- B** A background in relevant science subjects for the qualification you want to study – check out each qualification's requirements via the QR codes on the pages of this book.

#### ARE YOU NEEDING A LITTLE MORE BACKGROUND IN SCIENCE?

If you don't have quite enough background in science or it's been a long time since you last studied we can help you with course selections. The right courses will give you the background you need while studying your degree.

#### JUST MISSED OUT ON UNIVERSITY ENTRANCE?

If you don't have University Entrance or need to catch up in more subject areas, we can help you on your way with pre-degree study.

#### BOOK AN APPOINTMENT

Take a look at the options available on our website using the QR codes on this page, and book an appointment to talk to one of our academic advisors.

If you need to complete preparatory courses before starting your qualification, you can enrol in the following. Some of these courses are available in our Summer School.

Certificate in  
**PROFICIENCY UNDERGRADUATE**  
CPUND



Certificate of  
**UNIVERSITY PREPARATION**  
CertUniPrep



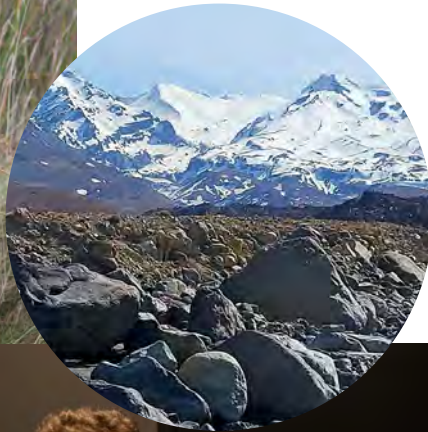
Certificate in  
**FOUNDATION STUDIES**  
CertFoundStud



If you need more courses then you can enrol in the following

Certificate of  
**SCIENCE AND TECHNOLOGY**  
CertScTech





# Our degrees and courses give you the in-depth knowledge and skills based learning employers want

## WHERE CAN I STUDY?

We are flexible with what we offer and where you study. Our qualifications are taught on campus and by distance.

	Auckland	Manawatu	Distance
<b>Bachelor of Agribusiness</b>			
Farm Management		●	●
International Agribusiness		●	●
Rural Valuation		●	●
<b>Bachelor of Agricultural Science</b>		●	●
<b>Bachelor of Animal Science</b>			
Animal Genetics and Breeding		●	
Animal Nutrition and Growth		●	
Animal Welfare		●	
Equine Science		●	
<b>Bachelor of Construction</b>			
Construction Management	●		●
Quantity Surveying	●		●
<b>Diploma in Facilities Management</b>			●

	Auckland	Manawatu	Distance
<b>Bachelor of Food Technology with Honours</b>			
Food Process Engineering		●	
Food Product Technology		●	
<b>Bachelor of Horticultural Science</b>		●	●
<b>Bachelor of Information Sciences</b>			
Computer Science	●	●	●
Data Science	●		●
Information Systems	●		●
Information Technology	●		●
Software Engineering	●	●	●

	Auckland	Manawatu	Distance
<b>Bachelor of Science</b>			
Chemistry		●	
Computer Science	●	●	●
Earth Science		●	●
Ecology and Conservation		●	
Environmental Science		●	●
Exercise and Sport Science	●		
Human Nutrition	●		
Mathematics	●	●	●
Microbiology		●	
Molecular Cell Biology		●	
Plant Science		●	
Psychology	●	●	●
Statistics		●	●
Zoology		●	
<b>Bachelor of Science (Honours)</b>			
Psychology			●
<b>Bachelor of Veterinary Science</b>		●	





Bachelor's degree  
 NZQF level 7 | Undergraduate study  
 3 years full-time (360 credits) | Part-time available  
 Distance study may be available See page 5.



# Bachelor of Agribusiness BAgrribusiness

**Our proud record dates back to 1927 when we offered New Zealand's first degrees in agriculture and horticulture. We have the largest Young Farmer's Club in New Zealand.**

## **You will be in demand**

At Massey many of our agribusiness students have jobs before they even graduate. From running large farm-based agribusinesses right through to international food trade, you will gain the skills and sound business knowledge to help progress the future of New Zealand's primary production sector, and to apply them overseas.

## **Build your agribusiness career**

New Zealand's economy is dominated by agriculture and food. The industry generates nearly \$50 billion in export earnings a year and international demand is predicted to continue to grow.

Massey's agribusiness qualification aligns itself with agribusiness industries throughout the world. This ensures our graduates have the skills and industry knowledge employers need.

## **What will you learn?**

This three-year world-class qualification will:

- Ensure you will be a good analytical thinker able to interpret information to develop sound and innovative solutions
- Give you an understanding of ethics, multi-cultural and international environments
- Give you a strong understanding of what it takes to be sustainable and competitive in global food and fibre markets
- Give you management skills applicable across primary industries
- Help you develop into an effective communicator and a self-directed, independent learner.

## **MAJORS**

- Farm Management
- International Agribusiness
- Rural Valuation.

## **PRACTICAL EXPERIENCE WHILE YOU STUDY**

There is a practical work requirement for this degree, consisting of at least 26 weeks full-time work. This is completed by submission of two reports for assessment. Practical work is normally done during summer vacations throughout the degree. Summer jobs are readily available on farms, orchards and other rural enterprises.

## **CAREERS**

- Business
- Consultancy
- Economics
- Farm management
- Farm ownership
- Government
- International marketing
- Purchasing
- Purchasing manager
- Rural banking
- Rural valuation
- Sales.



# International Agribusiness

## B Agribusiness Major

**Does managing the marketing process of meat, kiwifruit, or milk to retailers in Tokyo or Switzerland excite you? How about sourcing and processing billions of litres of milk every year?**

In the Bachelor of Agribusiness (International Agribusiness). You will learn about the global agri-food system. This includes everything from on-farm procurement in New Zealand to export and distribution of food and other agricultural products to consumers around the world.

### You will learn about

- Agri-food value chains
- Distribution and logistics
- International finance, and
- Manufacturing
- Primary production technologies
- The trade and marketing skills required to take New Zealand's agri-food industry to the global marketplace.

### Industry experience

Your learning will utilise case studies and field trips to local farms and businesses giving you the experience sought by employers. You will need to complete at least 26 weeks of full-time work in agriculture or horticulture, usually done over the summer when work is available.

### Research-led teaching

Our staff are active researchers. Massey's Agribusiness qualification integrates the most recent developments and thinking into your learning.

### A growing, innovative industry

New Zealand's economy is dominated by agriculture and horticulture generating nearly \$50 billion in export earnings each year and international demand is predicted to grow.

### CAREERS

New Zealand's agribusiness sector is flourishing, and there is strong demand for graduates, from running large farm-based businesses through to international trade.

Potential careers include:

- Business analyst
- Business and industry leadership roles
- Business management
- Businesses involved in international trade
- Export and import.

# Farm Management

## BAgribusiness Major

**The Bachelor of Agribusiness (Farm Management) prepares you for the demands of the farming business. From strategic to organisational skills, you will learn how to support profitable and sustainable businesses.**

### Put agribusiness into perspective

The farm management major will give you the ability to interpret and put into perspective issues affecting farm and agribusiness managers. It offers an understanding of how and why managers make decisions and what impact those decisions have on their business and the wider industry.

### Practical experience while you study

Your learning will utilise case studies and will include field trips to provide experiential learning – from talking to and observing farmers.

You will gain practical experience. As part of this qualification, You will need to complete at least 26 weeks of full-time work in agriculture.

### A growing, innovative industry

New Zealand's economy is dominated by agriculture and horticulture generating over billions in export earnings each year and international demand is predicted to grow.

### CAREERS

Potential careers include:

- Farm consultancy
- Farm extension
- Farm input suppliers
- Management of agricultural and horticultural businesses
- Processors and exporters
- Regional/national government
- Rural banking and insurance.

# Rural Valuation

## BAgribusiness Major

**The Bachelor of Agribusiness (Rural Valuation) will help you build the skills you need to have a successful career in today's rural property market. Whether it's a dairy farm sale, estimation of orchard capital value, or getting a bank loan to purchase a new farm, almost every financial transaction involving land requires a valuation to support it.**

You will learn about land-based systems and agribusiness. You will gain specialist valuation knowledge preparing you for opportunities in the rural property industry.

### A relevant qualification

Visiting a wide range of farm properties is an integral part of the qualification. This is essential to the relevance of your study of farm management, investment and valuation. You will also learn the communication skills You will need to operate within the industry and to work effectively with future clients.

You will cover a range of topics relevant to rural valuation such as property markets and resource management, property law and building technology.

### Practical experience while you study

You will gain a huge amount of practical experience. As part of this qualification, You will need to do at least 26 weeks of full-time work in agriculture. This is usually done during the summer when work is readily available on farms and with rural businesses.

### A growing, innovative industry

New Zealand's economy is dominated by agriculture and food. It generates tens of billions in export earnings a year. International demand is predicted to continue to grow.

### CAREERS

The Bachelor of Agribusiness (Rural Valuation) provides the knowledge, skills and competencies to be a registered valuer. But there are also other exciting career opportunities in the rural property sector.

Examples include:

- A specialist valuer with expertise in a class of property
- Farm consultancy, property management planning
- Insurance companies as a rural consultant
- Private practice firms as a generalist rural valuer
- Real estate firms as a rural agent
- Rural banking.

The requirements of lending institutions, local authorities, rental assessments, insurance valuations, and asset valuations for company accounts generate the bulk of valuation work in New Zealand.

The Property Institute of New Zealand (PINZ) is the professional organisation that you will most likely join as a rural valuation graduate. PINZ is closely involved with the development of Massey's courses and actively encourages students to get involved in the affairs of the local branch and become a member of the organisation.



### MASSEY FARMS

You'll have access to a wide range of first-class facilities when you study with us.

Students and researchers can access 2,000 hectares at our six working farms, including:

- Dairy farms
- Our deer breeding unit
- Our mixed enterprise and cropping unit
- Sheep and beef farms.



Bachelor's degree  
 NZQF level 7 | Undergraduate study  
 3 years full-time (360 credits) | Part-time available  
 Distance study may be available See page 5.



# Bachelor of Agricultural Science

## BAGSci

**The Bachelor of Agricultural Science degree gives you the contemporary agriculture-related skills you will need to become a leader in this rapidly growing international industry.**

**Agriculture dominates New Zealand's economy – generating billions in export earnings every year.**

### **Join an industry with a wide range of future options**

You will dig into every aspect of agriculture. That includes pastures, crops, animal and soil sciences, economics, agribusiness, and the influence of Government policies, regulations and factors related to Te Tiriti o Waitangi. You will learn about future and present issues in the industry and gain skills in the use of technology in agriculture. Disciplines like chemistry and biology are also an important part of gaining a broad understanding of the primary industries.

### **Experience before you graduate**

Agricultural scientific experience is integrated into this degree. You will be able to experience and analyse real-world scenarios while you are studying. We align this qualification with what employers are looking for – globally. Most agriculture students secure employment before they graduate.

### **Variety**

One of the best things about this degree is the variety of study.

You will learn about animals and agriculture, soils and pasture, be introduced to agribusiness and decision-making skills. You will also study economics and soil science.

### **Practical work**

As part of this qualification, You will need to do at least 26 weeks of full-time work in agriculture. This is usually done during the summer when work is readily available on farms and with rural businesses.

### **Award-winning facilities**

Massey's Manawatū campus has internationally award-winning multi-function teaching laboratories. as well as the university's own working farms. These are unique in Australasia.

### **CAREERS**

Industries where agricultural science skills are utilised include:

- Agricultural production
- Biosecurity
- Breeding consultancy
- Farm tourism
- Fertiliser
- Management
- Policy
- Research and development
- Sales and marketing
- Seed banking
- Teaching.



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# Bachelor of Animal Science

## BAnSci

**Combine your love of animals and science with the only animal science degree available in New Zealand.**

### Learn from the best

Massey University's animal, agricultural and veterinary science professionals are among the best in the world. They will teach you about the latest developments in animal science.

### Join a world-leading university

Our proud record dates back to 1927 when we offered New Zealand's first degrees in agriculture. Massey University is home to the only animal science team in New Zealand and one of the largest in Australasia.

### Internationally relevant

This degree is equivalent to international animal science qualifications and as a Massey University animal science student, you will benefit from our internationally recognised capability and leadership in these areas.

### Research-led learning

Massey has a number of internationally recognised animal-based research centres including:

- AL Rae Genetics Centre
- Animal Welfare Science and Bioethics Centre
- Centre for Feline Nutrition
- Equine Parentage Genetic Services Centre
- Equine Research Centre
- International Sheep Research Centre,
- Monogastric Research Centre and the Working Dog Centre.

Practical components of the qualification are taught on site at our state of the art teaching laboratories, our sheep, beef and dairy farms, and at our feline and canine facilities.

### MAJORS INCLUDE

- Animal Genetics and Breeding
- Animal Nutrition and Growth
- Animal Welfare
- Equine Science

### CAREERS

- Academic teaching and research
- Agricultural biotechnology, biosecurity and customs
- Animal breeding
- Animal management
- Animal nutrition and health
- Animal welfare officers
- Consultancy
- Disease control
- Equine sport and racing
- Feed/pet food manufacturing
- Laboratory roles in nutrition, meat science and animal health
- Policy and regulation
- Sales and technical
- Technical/managerial roles both domestically and overseas in a wide range of animal and primary production industries.



## Animal Genetics and Breeding

### BAnSci Major

**Learn how animal breeding and genetics can have a positive impact on animal industries and the New Zealand economy. The Animal Genetics and Breeding major is ideal for you if you have an interest in genetics in relation to animals.**

You will learn:

- About reproductive physiology and reproductive technologies
- How effective breeding strategies can both improve animal health and be more effective for farming and agriculture
- How to collect relevant information, analyse it and make decisions to attain those goals
- How to set up a genetic improvement programme based on breeding goals.

#### CAREERS

Possible careers include:

- Animal-related consultancy
- Corporate ram and bull breeding units
- Developing country genetic improvement programmes
- Livestock genetics companies
- On-farm animal technician
- Reproductive management of animals.

## Equine Science

### BAnSci Major

**The Equine Science major will help you understand nutrition, growth, health and performance in the equine athlete.**

The equine industry is large, diverse and economically important both in New Zealand and worldwide. You will be prepared for a wide variety of equine enterprises anywhere in the world.

The qualification will give you knowledge of equine welfare, behaviour and health. You will also gain an understanding of performance nutrition and responses to training of horses. You will acquire a broad understanding of health and production issues, and be able to offer the equine industry up-to-date, scientifically-based knowledge.

#### CAREERS

Roles could be in:

- Equine regulatory bodies
- Other equine enterprises in New Zealand and around the world
- Racing and breeding industries
- Sport organisations
- Stud farm management.





## Animal Welfare BAnSci Major

**The Animal Welfare major will help you understand the science behind how animals experience their environment. You will also examine what influences that and how that affects their behaviour and performance. You will gain a relevant, up-to-date, scientifically-based knowledge of animal welfare.**

You will be well-placed to make a difference in the lives of animals. You'll also learn about nutrition and growth as well as animal genetics and breeding. You will be qualified for technical, advocacy and management roles across different types of industries and animals.

### CAREERS

Roles could be in:

- Animal welfare investigation
- Biosecurity
- Customs
- Government animal welfare
- Local government animal control
- Policy and regulation
- SPCA animal welfare.

## Animal Nutrition and Growth BAnSci Major

**The Animal Nutrition and Growth major will help you understand how what animals eat affects their growth and health.**

The New Zealand meat industry is well recognised around the world for its pasture-raised product. In New Zealand we also have world-leading industries raising poultry and pigs. Nutrition is also extremely important for sport and companion animals. Improving nutrition can optimise the performance of animals in all these industries. You will learn how animals digest food and what feeds are best for them. You will also learn how much they should be eating for the appropriate growth and development, performance and health.

### CAREERS

You will be qualified for technical, advocacy and management roles across the animal industries. These include:

- Animal management
- Animal nutrition consultancy
- Feed manufacturing and development
- Feed testing services
- Inspection and grading services for animal products
- Sales and marketing.



Bachelor's degree  
 NZQF level 7 | Undergraduate study  
 3 years full-time (360 credits) | Part-time available  
 Distance study may be available See page 5.



# Bachelor of Construction BConst

**Become a construction expert who can contribute to the critical needs of the construction sector and be highly sought-after by employers.**

**This qualification allows you to develop and implement best practice building solutions and construction management techniques. You will learn how to add value to the sustainable development of the built environment. It will give you sound technical and theoretical knowledge, industry experience, management and interpersonal skills.**

## DIGITAL TECHNOLOGY IS INTEGRAL

There is an emerging need in the industry for robust technical skills. You will make extensive use of digital technology during your study. Knowledge of digital built environment is embedded within qualifications and courses, so students are equipped to contribute to transformation of practice. Digital representation, modeling and video capturing will be an integral part of the preparation and submission of assignments. Core courses for construction will teach you vital digital skills such as: Computer Aided Design (CAD), Building Information Modelling (BIM), and Augmented and Virtual Reality.

## Flexibility

Although you need to choose a major when you enrol, you can change from one major to another before commencement of your second year.

You can choose to complete parts of your study via distance mode, so you can continue to study while gaining valuable work experience.

## What you will learn

The two available majors focus on relevant industry sectors, such as:

- Building renovation and earthquake strengthening
- Construction companies
- Development consortiums
- Industrial and commercial building services
- Insurance rebuild costs
- Project management and quantity surveying consultancies
- Property development or property management
- The requirements and processes of local authorities and regulatory bodies.

## MAJORS

- Construction Management
- Quantity Surveying

## CAREERS

- Building renovation and earthquake strengthening
- Construction companies
- Development consortiums
- Industrial and commercial building services
- Insurance rebuild costs
- Project management and quantity surveying consultancies
- Property development or property management
- The requirements and processes of local authorities and regulatory bodies.

# Construction Management

## Bconst Major

**With the Construction Management major you will be able to make your mark on this growing industry. Many of our students have secured industry roles or even have been accepted into graduate qualifications before they have finished the degree.**

### Manage the buildings of the future

You will learn how to contribute to client needs assessment and how to offer advice on resolving buildability issues at the design stage. You will plan, schedule, and organise for implementation of new builds, refurbishments and conversions. You will learn how to make sure that things stay on track – financially, quality and time-wise and that you are meeting legal requirements.

You can follow your passion and create your own niche. For instance you may be interested in sustainable construction, or you could be an advocate for energy efficiency and reducing carbon emission of construction processes and built facilities.

### Flexibility

You can choose to complete parts of your study in distance mode. This means that you can continue to study while gaining valuable work experience in addition to earning a sizable and competitive market salary.

### CAREERS

Potential careers include:

- Banking
- Construction and property development
- Construction project management
- Consultancy
- Facilities management
- Government
- Insurance
- Mining
- Oil and gas.

# Quantity Surveying

## Bconst Major

**Work on exciting construction projects from start to finish, ensuring they are well managed financially.**

### Ensure resources are available for project completion

You will work on projects from initiation to completion. You will be helping them to stay on track financially. It's a challenging and interesting role where you will be looked to for your problem-solving skills to help the project go to plan.

Massey's Bachelor of Construction (Quantity Surveying) will teach you all the skills you need to be a sought-after quantity surveyor.

### Flexibility

Although you need to choose a major when you enrol, you can change from one major to another after one year of study.

You can also choose to complete parts of your study in distance mode. So you can continue to study while gaining valuable work experience and starting to earn the excellent salaries that are available to you with your qualification.

### CAREERS

When you graduate you could work in a number of areas.

You have the choice of working for construction businesses as an estimator, or for consultancies offering quantity surveying and project management services.

A key role would be working on the budgeting of construction projects. You'll prepare tender and contract documentation and undertake project appraisals. You'll offer procurement advice and carry out tender planning and adjudication at the tendering stages.

You liaise between the client and the construction company and draft and provide advice on contracts. You'll also manage subcontractors and a number of other roles. You may also undertake wider roles. These include:

- Arbitration
- Expert witness
- Negotiations and dispute resolution
- Project management.



### UNDERGRADUATE DIPLOMAS

Undergraduate diplomas let you try university study before you commit to a degree. They're also useful if you need to advance your career. A diploma at undergraduate level needs 120 credits (1 year if studying full-time).

## Diploma in Facilities Management

### DipFM

**Facilities management is the final step in the design-build-manage cycle of construction.**

**Duration** 1 Year full time  
Part time available (120 credits)

**Location** Distance and online

#### WHAT IS IT LIKE?

As a facilities manager you will oversee the operational management and maintenance of buildings once they're built to ensure our public spaces and workplaces are safe, healthy, sustainable, and productive. You will contribute significantly to the success of an organisation by making sure buildings are fit-for-purpose. That ensures everyone can perform their jobs effectively and efficiently.

The Diploma in Facilities Management is aimed at school leavers and also at junior level facilities management professionals. For those already in the workforce, it will assist you to underpin your skills and practice with foundational knowledge of a rapidly growing sector. You will learn about operational maintenance and management of built facilities.

Skills you will learn include:

- Facilities management planning
- Asset management
- Health and safety
- Teamwork and communication
- Business and financial skills
- Technology and innovation.

The qualification also covers a range of facilities. These include:

- Commercial office blocks
- Educational institutions
- Hospitals
- Industrial buildings
- Key support services.

#### Research-led learning from industry experts

Your lecturers are professional experts in the fields of construction, facilities management, and other related industries. Our lecturers are active in research, ensuring you will be at the cutting edge of this fast-growing industry.



Bachelor's degree with honours  
 NZQF level 8 | Undergraduate study  
 4 years full-time (480 credits) | Part-time available  
 Distance study may be available See page 5.



# Bachelor of Food Technology with Honours BFoodTech(Hons)

**The study of food technology is science and technology-based. It combines fundamental sciences, mathematics and chemistry – and the more applied sciences – with business and management.**

**At the end of the four-year qualification, you will be able to move directly into key roles in the food industry such as product development, process improvement or food engineering.**

## **WORK ON REAL-WORLD FOOD INDUSTRY ISSUES**

Massey's food technology qualification teaches you the fundamental and applied food technology skills that you will need in your career. You learn not only in the classroom, but practical laboratory and workshop sessions that focus on real industry problems and solutions.

Although you do need to choose one of these majors at enrolment, you can change your major as you learn more about the food industry during your study.

### **Sought-after by employers**

Massey graduates are renowned for their ability to co-ordinate product development, process development, quality management and production management. They are also known for their ability to become specialists in specific technical areas such as food microbiology, food chemistry and packaging technology.

### **An internationally-recognised food technology qualification**

Both majors of the BFoodTech(Hons) qualification are endorsed by the US-based Institute of Food Technologists (IFT). It is one of only a handful of qualifications outside the Americas to have achieved this recognition.

## **MORE WORK EXPERIENCE DURING YOUR STUDY**

You're required to complete 800 hours of approved summer vacation employment (over two summer breaks). This is more than other food qualifications in New Zealand and means that you will come out with a broad understanding of the food industry, great references for your CV, and you will be ready to start work from the day you graduate.

In your first year you will be given the engineering and food technology skills to succeed in your qualification while at the same time working on a food technology project. At the end of the semester students will show case their products at an exhibition. First-year students will also take an introductory course on science and sustainability – key concepts for the future.

### **MAJORS INCLUDE**

- Food Process Engineering
- Food Product Technology

### **CAREERS**

- Flavour technologist
- Food chemist
- Food microbiologist
- Food safety manager
- Food technologist
- Packaging technologist
- Process engineer
- Process technologist
- Product development technologist
- Production team leader
- Quality manager
- Technical sales and support
- Winemaker or brewer.



## Food Product Technology

### BFoodTech(Hons) Major

**Every day new food products and food ingredients are developed. Consumers are looking for new healthy and safe food products, using sustainable ingredients. The large-scale food manufacturing processes needed to bring these products safely and sustainably to the world are designed and managed by food technologists. With the Massey University food product technology major, you will have the skills and knowledge to work in and eventually lead this exciting global industry.**

#### Global opportunities

By studying the Bachelor of Food Technology (Honours) – Food Product Technology at Massey you will learn how to contribute towards the global trend and desire for healthier food. Some examples that have been worked on by Massey students include:

- A high-protein cereal
- A low-calorie dessert or chocolate product
- A sports drink to improve performance
- An extruded snack high in protein but low in fat.

#### Join a growing industry

The world looks to New Zealand as a trustworthy provider of safe, healthy food. As a food technologist you will learn how to contribute to economic growth through improvements in productivity and Research and Development (R&D). You will play a key role in the development of new products and processes for the food industry.

#### CAREERS

Career options include:

- Applications technologist
- Development technologist
- Packaging technologist
- Process improvement technologist
- Product development technologist
- Quality and procurement technologist
- Quality assurance supervisor.
- R&d technologist
- Raw materials specifications technologist
- Specification technologist – r&d
- Systems food technologist.





## Food Process Engineering BFoodTech(Hons) Major

**The world needs healthy and safe food products and ingredients manufactured on a large scale. New food products pose challenging and exciting process design problems that you can help solve.**

### **Global opportunities**

You could go on to manage the development and installation of new processing lines and factories producing products meeting the customer requirements in a safe, economical and sustainable way. You could also turn your great ideas into new innovative solutions. These could then be developed into a business. The possibilities are endless, and your skills can be applied all over the world.

### **Join a growing industry**

The world's growing population needs healthy and safe foods and New Zealand is an important link in the global food supply chain to meet this demand. That population needs healthy and safe food products and ingredients manufactured on a large scale. Development of new food products pose challenging and exciting process design problems that you can help solve.

### **CAREERS**

Career options include:

- Design engineer
- Food process engineer
- Process engineer
- Production supervisor.



Bachelor's degree  
 NZQF level 7 | Undergraduate study  
 3 years full-time (360 credits) | Part-time available  
 Distance study may be available See page 5.



# Bachelor of Horticultural Science

## BHortSci

**The Bachelor of Horticultural Science is focused on helping you become a horticulture graduate who can hit the ground running. It will give you the relevant, contemporary skills that industry seek.**

**One of the best things about this degree is the variety of study. You will learn about plant biology and soils, and be introduced to production horticulture, agribusiness and agri-related analytics and statistics.**

### **FUTURE-FOCUSED AND INDUSTRY-LED**

This qualification will give you an understanding of the breadth of horticulture. This includes everything from the genetics of plants to plant growth, the production of food, agribusiness, the influence of government policies, regulations and Te Tiriti o Waitangi (Treaty of Waitangi). You will learn how products are marketed and sold, and how to understand what consumers want in international markets.

### **In demand by employers**

Globally there are more jobs in horticulture than there are people to fill them. In Aotearoa New Zealand, the apple industry alone estimates that they need 150 graduates each year for the next decade. Horticulture will offer you a wide range of exciting and rewarding career opportunities across business and science roles.

### **Experience before you graduate**

Industry experience is integrated into this degree, with practical work courses allowing you to experience and analyse real-world scenarios while you are studying. You will gain a huge amount of practical experience. As part of this qualification, You will need to do at least 26 weeks of full-time work in horticulture. This is usually done during the summer when work is readily available in orchards and horticulture processing businesses.

There are opportunities to attend field trips, multi-day study tours around New Zealand and even international study tours to see world-leading horticultural operations and research.

Through your coursework there are also plenty of other practical applications and real-world experiences including guest lecturers from industry.

### **CAREERS**

- Biosecurity
- Crop disease and pest control
- Horticulture science consultant
- Innovation and robotics
- Orchard and greenhouse production management
- Organic production
- Perishable supply chain management
- International trade, access, and marketing
- Policy, regulation and advocacy
- Post-harvest management
- Technology.



### ENTRY REQUIREMENTS

To enrol in the Bachelor of Information Sciences qualification, you must qualify for undergraduate admission, either through:

- A** Bursaries and Scholarship Examinations
- B** NCEA Level 3, New Zealand University Entrance
- C** Admission with Equivalent Status
- D** Discretionary Entrance or Adult Admission.

Students with excellent achievements in NCEA and prior programming experience through the successful completion of courses and participation in competitions like STAR, NCSS or the ACM SPPC will be considered for direct entry into second-year Computer Science courses.

Bachelor's degree  
 NZQF level 7 | Undergraduate study  
 3 years full-time (360 credits) | Part-time available  
 Distance study may be available See page 5.



# Bachelor of Information Sciences

## BInfSc

**Exciting challenges and careers are available in software development, business analysis, project management. Massey provides you with the technical skills and knowledge to take your place in the fastest growing industry in the world. Link with industry while you study. Massey is the only university in New Zealand specialising in the C and C++ programming languages that are highly sought-after by employers. You will also learn Java, Python, SQL and other languages.**

### Top careers in software design and development

Massey is the only university in New Zealand to offer five ICT-related majors in the same degree. This allows you to mix and match courses to suit your strengths and interests. Include a double major or a minor (in any subject) or New Zealand's only minor in Games Programming.

Massey teaches students the skills and knowledge needed to succeed in the software industry. Topics include:

- Artificial intelligence
- Graphics and games programming
- Machine learning and data wrangling
- Mobile applications
- Networks and security
- Web development and internet programming.

There is a huge demand around the world for people with information and communication technology skills. Massey's Bachelor of Information Sciences will give you the skills needed to make you a sought after employee, both in New Zealand, and internationally.

You may be thinking about studying in this area, but are not sure what major to choose. You will have the flexibility to change your major right up to the commencement of your second year. So you can complete the first year of study, and once you've experienced the different subjects, make up your mind after that.

You can start your degree at the beginning of the year, or in Semester Two (starting July), but this may mean that you will need more than three years to complete the qualification. Once you graduate you can move on to advanced study in the Postgraduate Diploma or Master of Information Sciences.

### MAJORS INCLUDE

- Computer Science
- Data Science
- Information Systems
- Information Technology
- Software Engineering

### CAREERS

There is huge demand for people with information sciences skills. Graduates continue to find employment even during global recessions when graduates in other fields struggled.

Today, there are more employment opportunities in information communication technology (ICT) than any other sector in New Zealand. The same often applies internationally.

Careers for Information Sciences graduates:

- Analyst-programmer
- Business analyst
- Data scientist
- Database developer or administrator
- Networks and systems administrator
- Project manager
- Software architect
- Software developer
- Software engineer
- Software tester
- Systems analyst
- Systems programmer
- User requirements engineer
- Web developer.



## Computer Science

### BInfSc Major

**This major can be taken in either the BInfSc or the BSc. Students should select the BSc if they want to study Computer Science alongside another science major such as Mathematics or Statistics. Students who want to work in the ICT industry should enrol in the BInfSc.**

#### **Challenging careers in software development**

Massey provides you with the technical skills and knowledge to take your place in the fastest growing industry in the world. Connect with industry while you study to get a head start in software development.

The Bachelor of Information Sciences (Computer Science) will give you the applied skills and knowledge to become a sought after ICT professional, able to take on a wide variety of roles in the software industry.

#### **Applied and technical knowledge**

We teach students the applied skills and knowledge needed to succeed. Massey is the only university in New Zealand specialising in the C and C++ programming languages that are highly sought after by employers. You will also learn Java, Python, SQL and other languages. Every computer science course includes practical assignments.

#### **What you will learn**

The computer science major focuses on hardware, software, algorithms and programming. You will learn how computer systems work, and how to create efficient algorithms to solve challenging problems. You will learn several programming languages and gain the skills and experience to confidently start a career in software development.

Topics on offer include:

- Computer graphics
- Computer networking
- Concurrent programming
- Data structures and algorithms
- Embedded programming
- Games programming
- Machine learning
- Mobile applications
- Object-oriented programming
- Web applications.

```

fft2other=fft2d(other,64,64);
// Multiply
fftmul(x,y,xt,yt)=fftbases(x,y,xt,yt)*fft2other(x,y,xt,yt);
// Inverse FFT
a1=ifft2d(fftmul,64,64)
// Squared terms
b2(x,y,xt,yt)=box(xt*SZ+x,yt*SZ+y);
o2(xt,yt)=sum(other(r1.x,r1.y,xt,yt)*o1(r1.x,r1.y,xt,yt));
// Calculate similarity
d2(x,y,xt,yt)=b2(x,y,xt,yt)+o2(xt,yt);

```



## Data Science BInfSc Major

**This major will enable you to become a hi-tech data specialist with the relevant skills to take you to the forefront of this fast-paced industry.**

**The Bachelor of Information Sciences (Data Science) gives you the skills to fill the rapidly growing number of jobs in the area of data science and analytics.**

You will learn how to make sense of complexities so others can understand them and how to apply computing to data-oriented challenges. You may have an interest in commerce, government, natural and social sciences. You can learn how to apply technology to drive potentially world-changing innovation, decision-making and research in those fields. You will learn how to edit and develop relevant code in Python.

Data Science brings together some of the most interesting aspects of computer science, IT and statistics in order to make a unique, custom-designed and relevant specialisation for the current job market.

### A shortage waiting to be filled

LinkedIn's Jobs on the rise 2024 lists "Artificial Intelligence Consultant" in the top ten fastest-growing professions – the Data Science major is an excellent route into a world increasingly dominated by Large Language Models and Machine Learning. Data scientists are in high demand because they:

- Drive greater efficiency in profitability in competitive environments
- Enable management to make better decisions
- Innovate new products.

The skills you learn at Massey University and the qualification you will receive are recognised throughout the world and enable you to work in any industry or government sector.

### CAREERS

Some examples of careers that could lead on from this qualification include:

- Banking fraud detection analyst
- Business analytics consultant
- Customer insight analyst
- Data management architect
- Data science engineer
- Data-product entrepreneur
- Government communications and security analyst
- Government researcher
- Hadoop big-data engineer
- Machine learning specialist
- Scientific researcher
- Software developer
- Text mining analyst.



# Information Systems

## BInfSc Major

**Combine your interest in business and entrepreneurship with an understanding of how information systems are a vital part of organisations. Learn how to manage knowledge, effectively use social media in your business and how to manage IT projects.**

**If you are interested in IT but prefer working with people and establishing client requirements then the Bachelor of Information Science (Information Systems) is the right choice for you.**

### **Information systems are everywhere**

All around us, information systems are increasingly connected and automated. More and more data is being created daily ('Big Data'). This changes the way that businesses and organisations process and apply information about their products. It also affects how they interact with services and customers. Such systems are not only about technology. Their success depends on their designers having an understanding of computer software and they also need to understand the social, human and organisational contexts of these systems.

### **Understand technology and its users**

When you study information systems you will learn the essential soft skills of working with the users of IT systems. You will learn to understand their needs and how systems can be designed to meet them. You will understand the impact of ICT and how information systems are part of the strategy of any organisation. You will learn about computer systems from the perspective of the system developer as well as the manager, the administrator and the entrepreneur.

Our Information Systems major will combine your interest in organisations and entrepreneurship with an understanding of how information systems drive the contemporary enterprise. This is in contrast to computer science and information technology that stress the underlying technologies.

### **CAREERS**

Knowing the potential of information systems and having the ability to put this knowledge to work results in a successful personal career, organisations that reach their goals and a high quality of life. The Information Systems major is well-suited to those interested in a career in management or administration in a technical environment. Some examples of professional careers that follow on from this major include:

- Business and systems analysts
- Database administrators
- Independent consultants
- Project managers
- Software quality assurance
- Software testing
- User support specialists.



# Information Technology

## BInfSc Major

**The Bachelor of Information Sciences (Information Technology) major will combine your love of problem-solving, teamwork and technology with the core skills needed to analyse, design, build and manage a huge range of IT systems, projects and resources.**

**Our personal lives are becoming ever more entwined in social networks, virtual worlds and gaming environments. While commerce and industry are increasingly dependent on new and improved information technology.**

### Meet the needs of future consumers

When you study Information Technology, you will examine the huge range of technology that we use. You will gain skills in designing and building systems that will meet the needs of consumers today and in the future.

### What will I learn?

You will gain skills in:

- How to work in a team in the IT environment
- The analysis, design and deployment of complex information technologies
- The use of professional software tools, and the administrative and organisational aspects of IT
- Topics such as computer security, internet features, user interface design and more.

Information technology can also be taken together with the major in computer science (double major), or another minor of your choice.

### CAREERS

Graduates command some of the highest salaries of any career. There is a strong demand for qualified ICT professionals, both in New Zealand and overseas.

IT employers are constantly seeking skilled staff. High demand areas include: software development, software testing, business analysis, network security, project management and data/database.

Careers of previous graduates include:

- Application testers
- Business and systems analysts
- Cybersecurity experts
- Data administrators
- Project managers
- Team leaders
- Trainers
- User experience (ux) designers
- User support specialists
- Web developers.

# Software Engineering

## BInfSc Major

**Software engineering brings together the disciplines of computer science and information technology. The Massey Bachelor of Information Sciences (Software Engineering) gives you a highly-practical and sought after qualification that is practice-focused and industry-relevant.**

**Studying software engineering will see you gain the knowledge, tools and practical skills to be able to design, construct, test and maintain large software applications.**

### The best of both worlds

The Bachelor of Information Sciences (Software Engineering) is a joint major which means that you will study aspects of both computer science and information technology.

### Your learning will focus on:

- Both soft and hard software development skills
- The design and construction of large software applications
- The technical knowledge of computer programming from computer science combined with the design and team skills of information technology.

### Create real applications, while you study

An exciting part of the joint major is the team project in the third year, when you will work together with other students to create a new application.

### CAREERS

Employers are always seeking increasing numbers of staff. Look at the SEEK website to see the demand for ICT professionals in New Zealand. The majority of the hiring is taking place because of increased demand and new projects.

Software engineering is a high demand area, including jobs for:

- Architects
- Business analysts
- Data/databases
- Developers
- Network security
- Project management
- Software testers
- User requirement specialists.

Software engineers are in high demand throughout the world, which means there are plenty of jobs out there for skilled and hard working graduates.



### EXPLORE OUR SCIENCE MAJORS

We offer a diverse range of science majors that go beyond what you may have studied in high school. We encourage you to scan the QR code on the following pages to find out which majors would interest you, so you can explore these during your first year.

## ENTRY REQUIREMENTS

**A** All students must have a university entrance qualification.

AND

**B** A Year 13 background in a number of the Science subjects. See our desirable NCEA subjects table for further detail.

### DO YOU HAVE A FEW MISSING SUBJECTS BUT STILL WISH TO STUDY?

If you missed out on any of these subjects, you may be able to take courses during Massey's Summer School or Semester Two.

There are introductory courses for:

- Chemistry
- Biology
- Physics
- Mathematics.

See "Am I ready for study?" on page 4 for more information.

## BACHELOR OF SCIENCE DESIRABLE NCEA SUBJECTS

	Biology	Chemistry	Geography	Maths/Statistics	Physics
Chemistry		●		●	
Computer Science				●	
Earth Science		●	●	●	
Ecology and Conservation	●	●		●	
Environmental Science	●	●		●	
Exercise and Sport Science	●	●		●	●
Human Nutrition	●	●		●	
Mathematics				●	
Microbiology	●	●		●	
Molecular Cell Biology	●	●		●	
Plant Science	●	●		●	
Psychology	●			●	
Statistics				●	
Zoology	●			●	

### A FLEXIBLE PROGRAMME OF STUDY

The Bachelor of Science degree provides you with an adaptable base from which to develop in your chosen career. With the right choice of first-year courses, you can keep your options open and change your major in your second year if you wish to. You can select from a wide variety of majors and minors.

Bachelor's degree  
 NZQF level 7 | Undergraduate study  
 3 years full-time (360 credits) | Part-time available.  
 Distance study may be available See page 5.



# Bachelor of Science BSc

**Massey's Bachelor of Science (BSc) is a flexible qualification that will challenge you, while giving you the satisfaction of discovery.**

**With Massey University's Bachelor of Science, you will gain a broad scientific education while also being able to study one or more specialist areas in depth.**

**Leaders and influential thinkers around the world see the training, nurturing and appointment of well-qualified scientists and technologists as instrumental to health, environmental sustainability, and prosperity. Studying science will set you up to play a part in an exciting and prosperous future.**

## Get the skills employers are looking for

You will learn concepts, principles and theories that you can apply in your chosen career, such as how to interpret, summarise, evaluate and present data and information, and how to solve problems.

In addition to the technical skills you will gain through practical experience, you will also develop the communication and quantitative skills that are essential to success in New Zealand and international workplaces. These include time management, technological knowledge and project-planning skills that are useful across a wide range of industries and science-related organisations.

## Learn from the best

Learn from some of the top science researchers and teachers in the world, and use some of the best facilities in New Zealand.

## PLANNING

Full-time students usually take 120 credits each year, 60 credits per semester. Students will normally begin their study with 100-level, (ie. \_\_\_.1\_\_) and progress to 200-level courses in Year 2 and 300-level courses in Year 3. For each of the courses you choose, you will also need to check any prerequisites, corequisites or restrictions that apply.

In your first year of study for this degree you should take a course in each of mathematics and statistics, and the science and sustainability course, plus at least three other 100-level courses from the BSc schedule.

**Note:** Ensure you take the 100-level courses required as prerequisites for the courses you wish to take at 200-level.

If you take the 100-level majoring requirements of several majors and minors in your first year, this will give you the opportunity to study those subjects in later years. At the end of your first year, you should be in a position to make a well-reasoned confirmation of choice of major and minor.

**Note:** that some majors require two 100-level courses in the subject.

## MAJORS INCLUDE

- Chemistry
- Computer Science
- Earth Science
- Ecology and Conservation
- Environmental Science
- Exercise and Sport Science
- Human Nutrition
- Mathematics
- Microbiology
- Molecular Cell Biology
- Plant Science
- Psychology
- Statistics
- Zoology.



## Chemistry

### BSc Major

**A chemistry degree gives you sought after scientific, analytic and problem-solving skills. This is an exciting and challenging time for chemistry. Solutions to global challenges such as sustainability, energy supply and health and medicine will all require new materials and molecules. These will be developed by chemists.**

**The study of chemistry is fun and interesting and the topics you will cover are stimulating and relevant. Your lecturers are passionate, engaging and internationally recognised researchers.**

#### Learn the fundamentals and their applications

The Bachelor of Science (Chemistry) will provide you with a foundation in chemistry's fundamental principles. You will learn theories of structure of molecules and materials and how structure determines their properties and reactivities. You will learn the principles of synthetic chemistry and how to design new molecules. In the laboratory you will synthesise new compounds and learn current analytical methods.

The fundamental principles are applied to modern research and applications in chemical biology, chemical synthesis and materials/nanoscience at our Manawatū campus. You will discuss how the fundamental principles are applied to issues such as green chemistry, production of solar fuels, solar energy conversion, new drug development and biologically inspired materials.

You will develop critical thinking skills which, combined with analytical and problem-solving skills and your understanding of the principles of chemistry will allow you to make valuable contributions to public debates.

In your second and third year of study topics in your chemistry courses include:

- The properties of soft materials, organic materials and bioinorganic materials
- The theoretical basis for why and how chemical reactions occur
- Chemical analysis using fluorescence spectroscopy, radiochemistry and forensic methods
- Science communication skills such as blogging, podcasting and infographics
- Determining the structures of molecules and materials using NMR spectroscopy, X-ray diffraction methods and mass spectrometry

#### State-of-the-art equipment

You will receive training and learn techniques for instruments. These include:

- FTIR
- Gas absorption and membrane testing
- Mass spectrometry
- Molecular analysis
- Nuclear magnetic resonance
- Raman and fluorescence spectroscopy
- Ultra high performance liquid chromatography
- X-ray crystallography.

#### CAREERS

Over 200 different companies in New Zealand employ chemical scientists. Employment opportunities range from research and development roles, to technical laboratory (and laboratory manager) roles, to governmental and regulatory policy development, teaching and more. Increasingly, entrepreneurial opportunities for chemists exist with the rapidly expanding number of New Zealand scientific start-up companies.

Recent chemistry graduates have been employed as brew production managers, analysts in water quality testing laboratories, policy advisors with the New Zealand Government, and as high school chemistry teachers.



**Explore this major**  
Including its specific entry requirements



# Computer Science

## BSc Major

**The Computer Science Major can be taken in either the BInfSc or the BSc. Students should select the BSc if they want to study Computer Science alongside another science major such as Mathematics or Statistics. Students who want to work in the ICT industry should enrol in the BInfSc.**

**Massey teaches students the applied skills and knowledge needed to succeed. Massey is the only university in New Zealand specialising in the C and C++ programming languages that are highly sought after by employers. You'll also learn Java, Python, SQL and other languages. Every computer science course includes practical assignments.**

### Join the real world of software development

Massey has close ties with the innovative and rapidly expanding software companies based in North Auckland. These companies offer opportunities for internships, industry projects, holiday work and possible employment offers. You'll also be involved in creating websites and applications for charities and voluntary organisations.

### What you will learn

The Computer Science major focuses on hardware, software, algorithms and programming. You will learn how computer systems work and how to create efficient algorithms to solve challenging problems. You will learn several programming languages and gain the skills and experience to confidently start a career in software development.

Topics on offer include:

- Computer graphics
- Computer networking
- Concurrent programming
- Data structures and algorithms
- Embedded programming
- Games programming
- Machine learning
- Mobile applications
- Object-oriented programming
- Web applications.

### CAREERS

Graduates are well equipped to move into careers such as:

- Applications programmer
- Business analyst
- Independent consultant
- Network administration and support
- Project manager
- Software architect
- Software developer
- Systems programmer.



### Explore this major

Including its specific entry requirements



Photo: Professor Jonathan Procter

## Earth Science BSc Major

**The increasing human population is placing global biodiversity under immense pressure. Ecologists and conservation managers are urgently needed to help guide us into a sustainable future. Massey's Bachelor of Science (Earth Science) will take you on a journey of understanding the processes that moulded our planet. From observing our landscapes from space to finding solutions to our natural hazards and exploring our geology, it is a huge area to cover, leading to fascinating and varied careers.**

### Understand how the Earth works

You will develop an appreciation of our whenua. You will graduate with cutting-edge skills and the ability to predict future changes in the Earth's surface such as natural disasters, climate change, te ao turoa and water contamination.

Earth scientists are discovering hydrocarbon and mineral resources. They are establishing policy in resource management, environmental protection, public health, safety, and welfare.

### World-leading in Earth science and volcanology

Massey University is one of the few places in the world with a research group that examines the combination of new technologies (satellites, drones etc.) and computer modelling to answer questions from our communities. We are at the forefront of providing solutions to make our communities safe in the face of natural hazards as well as applying new remote sensing and GIS technologies to environmental management.

Massey has a focus on finding innovative solutions to environmental issues and exploring matauranga Māori. You will get an insight into the connections between geology and the environment.

Massey is the number one place to study Earth Science if you are interested in volcanoes.

We have many internationally renowned volcanology experts. You will get to explore this exciting and life-saving area through field trips to volcanoes in the Central North Island. We also have unique equipment that mimics volcanic ash flow.

### TOPICS

Advanced Earth science topics include:

- Field work
- GIS (Geographic Information System) software
- Natural hazards
- New Zealand's Earth material

- Paleoenvironments and climate change
- Remote sensing
- Volcanology.

### CAREERS

Graduates are employed in many varied positions around the world, including in:

- Crown Research Institutes
- Emergency management
- Engineering geology
- Esource management
- Hazard research
- Land rehabilitation
- Regional councils (land and water resources)
- Teaching.

If you are interested in a research career, Massey's BSc will allow you to choose from a wide range of specialist postgraduate qualifications throughout New Zealand and overseas.

Research scientists have specialised in geochemistry, volcanology, phytoremediation (using plants to remove pollutants from soils), groundwater, natural hazards, computational simulations of hazards, satellite remote sensing and spatial science.



### Explore this major

Including its specific entry requirements



Photo: Professor Murray Potter

# Ecology and Conservation

## BSc Major

**From molecules to forests, ecology and conservation is a broad discipline that teaches you how to make sense of the interactions between organisms and their environment.**

**We now have a great deal of information about the natural world available to us. By studying Ecology and Conservation you will discover how to make sense of that information.**

The Bachelor of Science (Ecology and Conservation) at Massey University is your start to a meaningful career spent discovering and shaping the interactions between species on our planet.

- Our ecology and conservation staff are world-leading and by studying with them you will learn about their cutting-edge research.
- Gain transferrable skills that will launch you into a wide variety of careers.
- Our well-established ecology Ecology and Conservation qualification has been helping students discover their passion for Ecology for over 20 years and is the longest running qualification of its kind in Aotearoa.

### TOPICS

The courses taught in the ecology and conservation major include:

- Biodiversity
- Biological evolution
- Conservation science
- Ecology and conservation
- Environments and ecosystems
- Freshwater ecology
- Marine biology and ecology
- Molecular ecology
- Terrestrial ecology.

### Hands-on experience

Practical labs and field trips are an important part of all the ecology and conservation courses. Activities range from identifying fish and invertebrates for monitoring water quality, building a computer model to predict the recovery of an endangered species or set a sustainable quota for a fishery, or surveying biodiversity in a forest or the ocean.

### CAREERS

Many of our graduates work with the Department of Conservation or other government agencies. There are great opportunities for graduates in ecology and conservation to work with managed ecosystems (e.g. farming, forestry, fisheries).

Many of our graduates go on to positions with:

- Central and local government or their agencies (such as regional and district councils)
- Crown Research Institutes
- Environmental or conservation organisations
- Ecological consultancy
- School teaching
- Technical and advisory work.



**Explore this major**  
Including its specific entry requirements



# Environmental Science

## BSc Major

**Studying environmental science will give you the tools and understanding needed to help create a sustainable path for New Zealand and the world. Environmental science focuses on the connections between humans and their natural environments.**

**Managing and mitigating human impacts on the environment is crucial for New Zealand. Our global reputation depends on us becoming truly clean and green despite the increased pressure on the environment.**

**Join one of New Zealand's leading universities in the study of environmental problems and impacts.**

The Bachelor of Science (Environmental Science) will see you become involved in Massey's aims to develop a sustainable path for the future. We are looking to solve real-world issues such as managing natural resources and environmental impacts.

The qualification considers global environmental problems and has a focus on land and water science, and the impact of primary production on the environment. The environmental impact of food production is a particular challenge for New Zealand. You will use skills in GIS ((Geographic Information System) software, remote sensing, land use capability, and practical field techniques such as groundwater monitoring, to explore the processes that impact soil and water quality. By combining environmental science with elective courses in agriculture, horticulture, or animal science, as well as others from science your skills will help you to address global issues like those associated with sustainably feeding a growing population.

To take your studies overseas, you can progress into our postgraduate qualification in environmental management, where you could undertake research all over the world.

Some of the topics include:

- Environmental issues and solutions
- Environmental management
- GIS and remote sensing
- Landscape and human ecology.

### Taught by the experts

Our researchers and teachers have an excellent reputation and are widely published internationally. You will be taught by experts in earth science, physical geography, soil biology, chemistry, freshwater management, ecological economics, environmental technology, and in sociology. Integrating these diverse fields is what an environmental scientist does – we'll show you how.

### CAREERS

Potential employers both in New Zealand and overseas include central government, regional, district and city councils, private sector consultants, and entrepreneurs. You may also find employment in one of these areas:

- Agriculture and forestry
- Biodiversity management
- Coastal management
- Development
- Environmental planning and policy
- Geographic information systems
- Landscape management
- National parks
- Renewable energy
- Soil and water
- Tourism and recreation.



**Explore this major**  
Including its specific entry requirements



**JOEL ARMSTRONG**

BSc (Exercise And Sport Science)

*I have always had a keen interest in sport and performance. I began to look for ways to understand and improve my own sporting performance. After familiarising myself with some basic sport science knowledge, I decided to enrol and further my learning. Massey has also presented many opportunities for internships and work experience which have proved to be invaluable learning experiences for me. I chose Massey as I liked the idea of smaller class sizes and a more accessible university. This allowed me to develop relationships with my lecturers, post-graduate students and my classmates.*



## Exercise and Sport Science

### BSc Major

**The Exercise and Sport Science major is ideal for you if you want a broad base in science coupled with knowledge and skills related to exercise and sport performance.**

With the Exercise and Sport Science major, you will study the key sport and exercise subjects including:

- Biomechanics
- Exercise physiology
- Motor control
- Sport nutrition
- Sport psychology.

Complemented by a strong understanding of other biophysical sciences, you will gain an in-depth knowledge of factors that influence health and sports performance.

Our research-active staff will help you apply the latest knowledge to various sporting situations. You will gain an understanding of how to optimise athletic performance and health through technology, nutrition, psychology and exercise. Additionally, you will learn how training and performance are affected by different environments and the power of the mind.

You will learn theoretical material in lectures, and apply your new-found knowledge in laboratory or practical classes in a range of subjects relating to sport and exercise. You will develop critical thinking, problem-solving and communication skills relevant to this energy-fuelled and constantly progressing field. The main applications are sports performance, and the use of exercise to promote fitness and health. You can combine exercise and sport science with other courses such as sport development, exercise prescription, or science qualifications such as physiology and human nutrition.

**CAREERS**

Massey's exercise and sports science graduates have an excellent reputation in the health sporting industries, including:

- As a sports scientist working with individual athletes, sports teams, sports coaches and regional sporting bodies
- Providing exercise and health guidelines to clients
- Providing occupational health advice to companies and local bodies
- Teaching at secondary and tertiary level.

**Explore this major**

Including its specific entry requirements



## Human Nutrition

### BSc Major

**If you are passionate about food and nutrition and want to learn more about the science of how what you eat affects health, then Massey's Bachelor of Science (Human Nutrition) is for you.**

**Knowledge about human nutrition and the application of this knowledge are essential elements in maintaining a healthy society.**

Human nutrition is a progressive, multi-disciplinary science requiring a wide range of knowledge. That could range from nutrient supply and metabolic processing to psychosocial and behavioural factors influencing diet. The Bachelor of Science (Human Nutrition) is designed to give you a clear understanding of basic nutritional principles. You will also learn about the composition of food, human requirements for nutrients, and how the body processes food and nutrients.

The qualification also highlights the physiological changes that occur as a result of excesses or deficiencies of various nutrients in the diet. It also looks at the changes in nutritional needs from conception through birth, growth, adulthood, and ageing. You will gain an understanding of factors that influence food choice and awareness of practices to promote dietary change.

#### **Help ensure people are healthy**

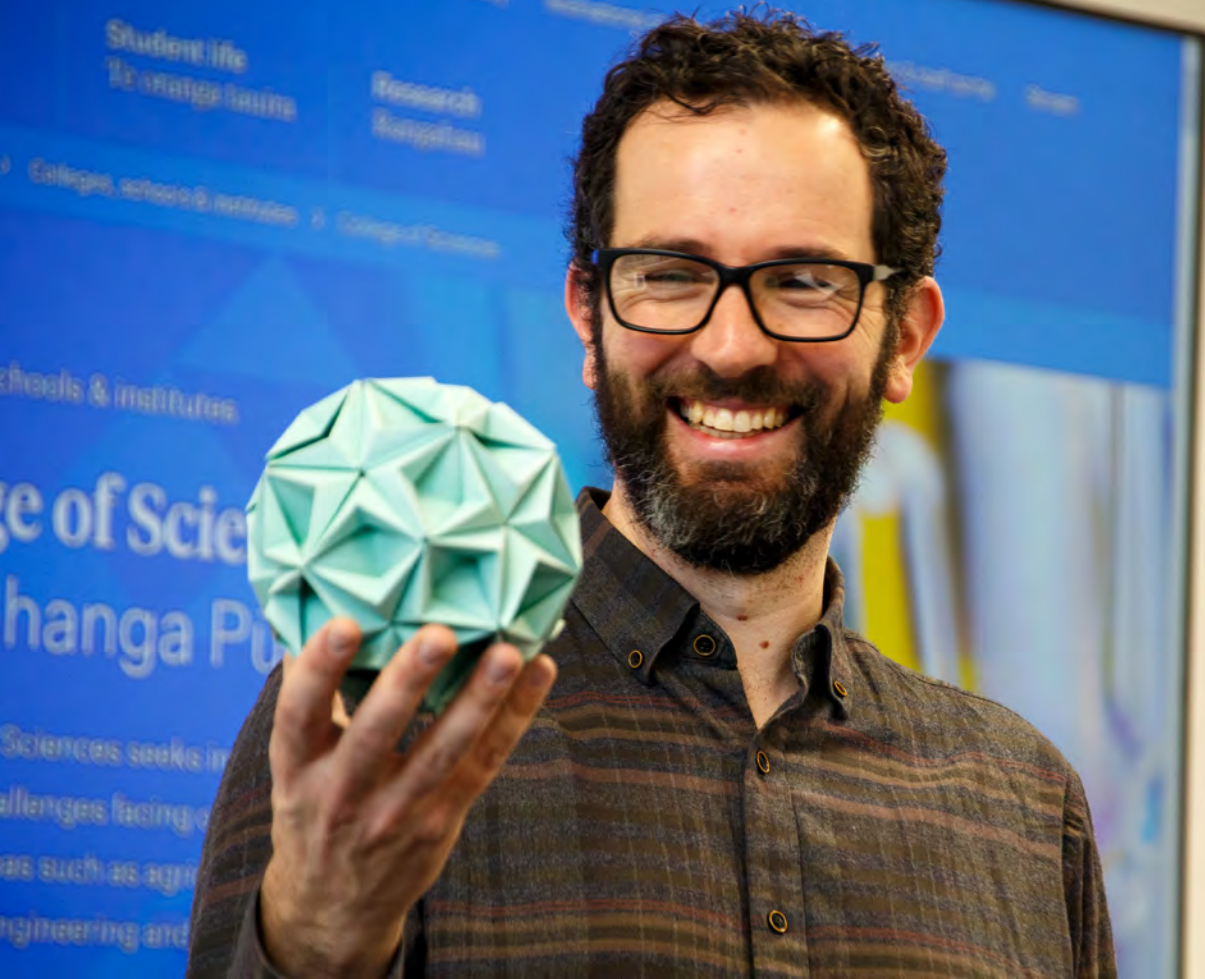
You will gain an integrated understanding of nutrition, biochemistry and physiology all related to the human body.

This will give you the basis of knowledge required for enhancing health and fitness in individuals of all ages, and in groups and communities. The major will provide training in practical skills so you can work at promoting good nutritional practices to individuals, communities and industry. You will also gain an insight into how diet contributes to your own personal health and well-being.



#### **Explore this major**

Including its specific entry requirements



## Mathematics

### BSc Major

**From securing sensitive communications using cryptography to calculating the geostationary orbit of a satellite – mathematics is a product of human ingenuity that underpins our modern world. It is fundamental to our lives.**

#### Real-world skills

Our strength in applied mathematics means you will get to combine your learning with other science disciplines to gain extensive experience in a range of applications. You will be able to use your knowledge to solve problems in areas such as computer programming, climate modelling and transportation.

#### Learn from the leaders

You will have access to some of the world's top mathematical minds. You will graduate well-grounded in basic mathematics principles and be stimulated by your exposure to the latest research and discoveries.

Our mathematics qualification is taught by leading researchers who work in areas such as the modelling of geothermal processes, cell growth, dynamical systems, scientific computing, combinatorics, topology, epidemiology, celestial mechanics, neuroscience, industrial mathematics, number theory, geometry and analysis. This versatility demonstrates the variety of problems mathematically- skilled scientists can become involved in.

#### TOPICS

Mathematics at university starts by building on high school algebra and calculus. But it develops into many new and different directions, including:

- Differential equations, which are used throughout science, engineering, and industry
- Discrete maths, which describes structures like networks and algorithms
- Matrices and vectors, for working with large amounts of data
- Modelling, in which mathematical descriptions are developed for new, real-world situations.

It is also increasingly important to complement your analytical skills with some knowledge of computational and simulation techniques on computers. We suggest supporting minor subjects including computer science, finance or statistics.

#### CAREERS

Mathematics is a tool for communication and understanding that crosses all boundaries and connects with all subjects and areas. It combines particularly well with other areas of science, social science, and business.

Business and agencies are constantly collecting and interpreting data and using it to build understanding and help make decisions. New Zealand organisations that have hired mathematicians in recent years include:

- 3M
- AgResearch
- CompuDigm International
- MetService
- Mobil Oil Ltd
- New Zealand Defence Forces
- New Zealand Post
- New Zealand Treasury
- PricewaterhouseCoopers
- Westpac.



#### Explore this major

Including its specific entry requirements



# Microbiology

## BSc Major

**Massey University is one of only three universities in New Zealand where you can study a microbiology major.**

**Microbiology is an essential science that helps us understand the microbes in the environment, including microbes that dwell in the soil, air and water, in our food and inside people, animals and plants.**

Microbiology can impact on many different areas, such as:

- Agriculture, where rumen microbes are both essential to dairy and good industries, but also responsible for much of New Zealand's carbon emission
- Bioprotection, where efforts to preserve native birds (kiwi) and plants (kauri trees) depend on expert control of microbial pathogens
- Microbes have applications as model systems and are the chief resource of enzymes and other tools used to answer questions beyond the immediate range of microbiology, such as diagnostics, the causes of cancer or birth defects

- Green and bio-based technologies, where microbes help preserve our environment by producing bio-based materials for use in diagnostics and vaccines or by harnessing solar energy for fuel production.

### Multi-disciplinary

You will learn about microbiology hand-in-hand with other science areas such as veterinary, animal, and environmental science. This allows you to explore microbiological disciplines, including environment/ecology, medical, veterinary and food microbiology, and biotechnology. Some of the topics taught in microbiology courses include:

- Applied and industrial microbiology
- Bioinformatics and genomics
- Biotechnology
- Diagnostic tests for infectious diseases (including SARS-CoV2)
- DNA technology
- Environmental microbiology
- Food microbiology
- Immunology
- Medical microbiology
- Microbial diversity.

### Practical laboratory experience

Laboratory skills and experience is a strong focus in the microbiology major. For example, you will get to do a lab-based simulated research project, such as identification of microbes in environment or food, or producing useful proteins in bacterial culture. As a graduate, you will have confidence with laboratory techniques and the unique ability to show potential employers that you are skilled in lab-based experiments.

You will have the opportunity to carry out research projects in the research laboratories by applying for summer studentships. You'll gain first-hand experience with full-time research and the opportunity to connect with potential employers.

### State of the art equipment

Microbiology undergraduates have access to:

- Bioreactors and fermentation facilities
- DNA sequencing facilities
- Fluorescence and optical microscopes
- Protein analysis (mass spectrometry).



### Explore this major

Including its specific entry requirements



# Molecular Cell Biology

## BSc Major

**Become part of the spectacular advances being made in science, medicine and agriculture through modern molecular, cellular, and genomic analyses.**

**The Bachelor of Science (Molecular Cell Biology) will teach you how an understanding of DNA, proteins and cells helps us understand life on this planet.**

Why do diseases or disorders develop and how can we diagnose and treat them? Where did we come from? How are microbes influencing our health? How are we using molecular biology to create vaccines and test for diseases such as COVID-19? How are organisms evolving to our changing planet?

This can in turn help create a better world – with better medicines, more efficient agriculture and better protection from disease for humans and our environment.

It is a discipline that unifies many others, from biochemistry to computer science to medicine and food production.

### Join science that is changing the world

During your study you will:

- Engage with cutting-edge technologies like genome sequencing and how to analyse large data sets using state-of-the-art computational tools
- Find out how organisms are related and how evolution works at a molecular level
- Learn about advances in DNA sequencing – why certain diseases are prevalent and why genetic mutations can be good and bad
- Learn how advances in molecular techniques and dna sequencing are changing the face of medicine, agriculture, ecology and wildlife conservation
- Learn how advances in molecular techniques and DNA sequencing are changing the face of medicine, agriculture, ecology and wildlife conservation.

We are in an era where new pathogens are emerging and existing pathogens are becoming more resistant to treatments. You will be taught by Massey lecturers who are actively researching a broad range of areas including cancer, COVID-19, the genetics of harmful bacteria, the evolution of viruses and bacterial organisms, and new methods to solve problems such as antibiotic resistance.

### CAREERS

As a graduate you will have developed a sound working knowledge of the fundamental aspects of these disciplines. You will also develop skills in written and oral scientific communication, and we will help you develop an analytical approach to problem-solving. These skills are all sought after by employers.

Potential employers include:

- Agricultural and horticultural sectors: dairy, meat, wool, wheat, forestry, leather
- Biotechnology companies
- Medical laboratories
- New Zealand Government (Ministry of Primary Industries, Ministry of Health, Environmental Protection Agency, Tertiary Education Commission), regional and local councils
- NZ research institutes and international research institutes
- Pharmaceutical manufacturing and scientific supply companies
- Scientific publishers
- Secondary and tertiary educational institutions
- Wineries, breweries and food industries.



### Explore this major

Including its specific entry requirements



### EMILY SMITH

BSc(Hons) (Plant Science) PhD Candidate

*I chose Massey because it has a good reputation for having an excellent science programme. Lecturers bring their passion into lectures and labs and really engage the students. Lectures felt more like educated discussions rather than simply being told information. I took a different internship each summer break, one of which led to a part-time job. I also got involved in the Massey Horticulture Society, which gave insight into the more applied side of plant science through guest speakers and visits to growers. It was a great way to meet other students interested in plant science.*

## Plant Science

### BSc Major

**Join the Bachelor of Science (Plant Science) at Massey – the only university in New Zealand where you can study and specialise in the full spectrum of plant science from molecular biology and evolution right through to agriculture and horticulture.**

#### WHAT IS IT LIKE?

Nearly all life on this planet is ultimately dependent on the primary productivity of plants. The study of plants is a fascinating investigation of the origins of life, the natural world and the future of life on Earth. The Plant Science major will help you understand the crucial biological processes that underpin the very basis of life on Earth – and ultimately our own survival.

#### Join a world-leading, relevant university

As a student, you will benefit from our internationally-recognised capability and leadership in this area. Massey has over 50 years' experience in plant-based sciences and has the largest number of plant scientists of any New Zealand university. We have spent decades consistently developing our courses to remain relevant in today's employment marketplace.

#### Understanding the plant world

Studying the Bachelor of Science (Plant Science) will give you a solid understanding of the fundamental elements of the structure and function of plants. You will learn how plants grow and interact with their environment and also how to apply this knowledge in both natural and managed ecosystems.

#### Vital communication skills

A vital element of a scientific career is the ability to communicate your work clearly to future colleagues and employers. At Massey we help you gain the skills to emerge as a well-rounded and effective communicator.

#### Investigate contemporary issues

With this degree you will also develop related skills in contemporary disciplines such as high-throughput gene sequencing and bioinformatics (the analysis of nucleic acid and protein sequences using computers). This can assist in understanding evolution and biodiversity. You will play a vital role helping us better

understand everything from bioconservation issues to the effects of climate change, and be able to take a diverse range of courses that could lead to study at postgraduate level in a Postgraduate Diploma or Master of Science.

#### CAREERS

There is a steady demand for plant scientists in New Zealand and abroad. Related areas of employment include:

- Agriculture
- Crop research
- Forestry
- Grassland science
- Horticulture
- Plant breeding
- Plant conservation
- Plant protection
- Re-vegetation
- Science management and policy.



#### Explore this major

Including its specific entry requirements



# Psychology

## BSc Major

**Psychology covers a broad range of topics, but at its simplest level it is the systematic study of individual behaviour. It considers emotions, personality, and the way individuals interact. It also considers learning, memory, thinking and the brain.**

**Psychology is a growing and ever-changing subject which helps us make sense of the human impact on the world in which we live.**

You will learn how people perceive, learn, think, develop, behave, and relate to one another. Courses will teach you how the structure of the brain affects our behaviour, what makes people different from one another and how being in groups affects people's behaviour. Finally, you will learn how factors like culture, gender, poverty, and mental illness affect our health, our thinking, and our behaviour.

### Market leading in New Zealand

Massey graduates more clinical psychologists than any other university in New Zealand. Our research and teaching is unique and recognised nationally and internationally. This strength and expertise means your learning will be relevant to today's jobs and societies and your degree will have a great reputation.

### Applied learning

During your degree you can take part in our broad selection of courses across areas including forensic, experimental and community psychology that demonstrate how foundational skills can be applied.

### TOPICS

Some of the topics taught in psychology courses include:

- Bicultural perspectives in psychology
- Brain and behaviour
- Community psychology
- Evolution, learning and culture
- Introduction to clinical psychology
- Memory and cognition
- Organisational psychology
- Social psychology.

### CAREERS

A degree in psychology may lead to many possible career paths. Virtually any setting where knowledge of human behaviour and interactions is useful may employ someone with knowledge of psychology. Some areas in which recent graduates have gained employment are:

- Business psychology
- Counselling
- Defence psychology
- Human resource management
- Public health
- Rehabilitation psychology
- Scientific research
- Special education
- Teaching.

After completing the bachelor's qualification, postgraduate study may give you the opportunity to practice as a registered psychologist in clinical or organisational settings.



**Explore this major**  
Including its specific entry requirements



## Statistics

### BSc Major

**If you enjoy working with numbers, you will love studying statistics. It is a broad area of study that involves much more than the organisation and display of data. Statistics involves the careful analysis of underlying questions and critical examination of the sources of data. Modelling the variability in data to evaluate evidence is part of this broad science.**

As a Bachelor of Science (Statistics) student you will learn the quantitative skills to conduct robust statistical analyses that are effective in the real world. With these broadly useful skills, statisticians are able to work across all areas of science and industry – anywhere that data are found.

#### Sought-after skills

You will learn how to work with large data sets to test ideas, discover patterns and draw conclusions. They are sought after skills for many employers. As one of New Zealand's first universities to offer courses in data mining, Massey has both the experience and strength to ensure you graduate a step ahead of the rest.

#### TOPICS

- Biostatistics
- Data analysis
- Data mining
- Design and analysis of experiments
- Gis and spatial statistics
- Multivariate models
- Regression models
- Statistical models.

#### Complementary skills that set you apart

You could choose to take a minor with your statistics major by incorporating a wide range of courses, from volcanology and earth sciences, to infectious diseases and population ecology. If you are studying other science subjects or looking at studying business, studying statistics as a complementary subject can set you apart when applying for jobs.

#### CAREERS

Employers include government agencies like Statistics New Zealand, Crown Research Institutes, schools, hospitals and medical research institutes, and private companies both large and small. Opportunities for statisticians exist worldwide. Careers for statisticians can be advertised under a wide variety of titles, such as:

- Biostatisticians
- Business systems analyst
- Data analyst
- Health informatics analyst
- Market researcher
- Modeller
- Quality assurance specialist
- Risk analyst/consultant
- Statistician
- Survey sampling analyst
- Test analyst.



**Explore this major**  
Including its specific entry requirements





Photo: Professor Murray Potter

## Zoology BSc Major

**Massey University is one of the few universities in New Zealand that offer a Zoology major, and our graduates are highly sought after throughout the country and all over the world.**

**Zoology is the animal science of the natural world. It examines animals on a variety of scales, from biological knowledge at the molecular level to animals as components of systems. It also includes the study of animal behaviour.**

**Our lecturers are passionate about what they do. They have examined bird migration pathways from New Zealand to Alaska and the USA. They have investigated species interactions in the alpine environment and unlocked knowledge about morphology through examining fossils and lineages in rocks. They bring this knowledge and love for what they do into their teaching to help you uncover what truly inspires you.**

### WHAT WILL YOU STUDY?

The Zoology major offers you a wide range of areas to explore from the fundamentals of mainstream zoology to special interest areas. The core Zoology qualification looks at animals on a variety of scales.

You will gain skills in a broad range of related sciences including ecology, conservation diversity and evolution. This major is not just about land-based animals and environments; you will also explore freshwater and marine systems.

#### The latest thinking

You will learn about land-based animals and environments. You will also develop a strong foundation including the latest thinking in genetic and physiological processes, animal development, anatomy and behaviour. You will explore freshwater and marine systems, and our wide range of speciality fields including conservation of biodiversity.

#### An exciting and practical subject

The most exciting advances in biological knowledge are probably at the molecular level, which we cover in the second year. The level of animals as components of systems is covered in the third year.

A key speciality in your study will be the fascinating and practical field of conservation of biodiversity. This looks at both vertebrates (birds, predators) invertebrates (crustaceans, insects), and at their impact on New Zealand indigenous plants and animals. Another interesting area is the study of animal behaviour.

### CAREERS

Zoology graduates are in high demand. They have worked in places like Samoa, South Africa, the Netherlands and United States. You will graduate ready to join them, and to take the best of your knowledge to the rest of the world.

Locally, you could contribute your skills to:

- Biosecurity in New Zealand
- Crown Research Institutes
- Department of Conservation
- Environmental Risk Management Authority
- Fish & Game New Zealand
- Ministry for the Environment
- Ministry of Primary Industries
- News media including magazines, newspapers, websites, radio, television and documentary making
- Private conservation initiatives
- Private environmental consultancy firms
- Regional councils
- School teachers
- SCION (formerly Forest Research Institute).



#### Explore this major

Including its specific entry requirements



## ENTRY AND PRE-SELECTION REQUIREMENTS

If you meet the requirements for admission to Massey University, you can enrol in the *pre-selection phase* in Semester One.

In order to give yourself the best chance of being selected into the professional phase, it is recommended that you have completed the following (or their equivalent) before commencing this phase:

- A 14–20 credits of NCEA Level 3**
  - Chemistry
  - Biology
- B Credits in NCEA Level 2**
  - Mathematics
  - Physics

**Note:** There are 125 places for domestic (NZ) students in the professional phase of the BVSc qualification for the 2025 academic year, and about ~350 students apply for these places. Students who are not selected can credit passed courses towards other Massey degrees and may reapply for selection in the future up to a total of 3 attempts. The selection process is based on academic and non-academic assessments.

These are held during the first semester of pre-selection; they consist of online assessments and in-person assessments held on the Manawatū campus. Please see the Bachelor of Veterinary Science web page for more details. If you are selected into the professional phase you will take a range of courses covering everything you need to become a qualified veterinarian.

## HOW DOES IT WORK?

**The Bachelor of Veterinary Science is a five-year (10-semester) qualification offered solely on the Manawatū campus.**

- 1 Phase 1: Pre-selection**  
The first semester (beginning in February) is referred to as the *pre-selection phase*.  
**Note:** Selection is highly-competitive so focussing on great results for your first semester is vital.
- 2 Phase 2: Professional phase**  
Depending on your performance in the pre-selection phase, you may be selected to the *professional phase*, beginning in July (4.5 years long).
- 3 Professional phase selection**  
Once you are in the qualification
  - A** You will study:
    - Core medical sciences (tailored for veterinary students)
    - Normal and then abnormal animal structure and function.
  - B** Then you will be taught:
    - How to ‘fix’ animals, or return them to normal function through clinical studies, medicine, surgery, and health management of companion and agricultural animal species.

### In years 1–4

Throughout years 1–4 there is a focus on professional attributes for veterinarians, and integrative problem-oriented courses. These integrative courses encourage students to apply the information learned in the other individual courses to real-life veterinary cases and scenarios designed to develop problem-solving and critical thinking.

### In your final year

You get to choose an area of interest (track) and will undertake lots of workplace learning while you are studying. This gives you invaluable on-the-job experience. This individualised final year curriculum allows you to further explore areas of interest while ensuring wide coverage of the main veterinary species.

During the qualification, you will attend lectures, tutorials, practical classes and clinical sessions and undertake farm and veterinary practical work outside of university semester time.

Bachelor's degree  
NZQF level 7 | Undergraduate study  
5 years full-time (600 credits)



# Bachelor of Veterinary Science

## BVSc

**By studying veterinary science you will join a world-class veterinary programme that will qualify you to work as a veterinarian in many different countries.**

**Massey is the only university in New Zealand that offers veterinary training, and the degree is widely recognised internationally. The veterinary school is ranked 29th in the world for veterinary science by Quacquarelli Symonds (QS) ranking.**

### WHAT IS IT LIKE?

In line with the international recognition for the degree, you will find that the study of veterinary science is rigorous and challenging. You will need to work hard, and apply yourself, but the result will be an interesting, varied, and rewarding career. You will need a good background in the sciences if you want to become a veterinarian.

### The best facilities in Australasia

Veterinary science is a key focus for Massey University's Palmerston North campus and we now have some of the best facilities in Australasia. In recent years, the Veterinary School's facilities have been completely rebuilt with new, teaching spaces opening in 2022. The last of the new buildings (staff offices, research laboratories, the student commons and another teaching laboratory) will be completed in 2024.

### Accreditations

The Bachelor of Veterinary Science is fully accredited by the:

- Australasian Veterinary Boards Council (AVBC), and
- American Veterinary Medical Association (AVMA) Council on Education.

The BVSc is also recognised through reciprocity by the:

- Royal College of Veterinary Surgeons (RCVS), and
- South African Veterinary Council (SAVC).

This means you could work as a veterinarian not only in New Zealand, but also Australia, the United Kingdom, Canada, the USA, and many other countries. Our veterinary school was the first in the Southern Hemisphere to be accredited by the AVMA and our BVSc is recognised as being equivalent to a Doctor of Veterinary Medicine (DVM) degree from an accredited North American university.

### CAREERS

If you work as a clinical veterinarian you will provide high-quality care for animals, whether they are pets, working animals, farm livestock or wildlife.

You will use diagnostic and communication skills to promote the health and wellbeing of a range of animals, to make a real difference for both them and their owners.

There are many other career opportunities for you with your veterinary qualification, such as:

- Animal disease investigator - helping to diagnose new and emerging animal diseases, and working on responses to potential outbreaks
- Food safety veterinarian and other contributions to public health
- Veterinary researcher contributing to animal health and production
- Protecting New Zealand wildlife in the Department of Conservation.

You could also become a specialist by completing further study. There are veterinary specialists in many areas including oncology (cancer), ophthalmology (eyes), dermatology (skin), epidemiology and surgery. You could use your specialist skills to make your mark as a university lecturer, helping to teach and inspire the next generation of veterinarians.

### PATHWAYS TO POSTGRADUATE STUDY

Most BVSc graduates start working in clinical practice. Qualified veterinarians can undertake on-the-job postgraduate qualifications or return to university to study at a postgraduate level. There are also opportunities to undertake further veterinary training to become a specialist.

### CONTACT US

If you'd rather speak to a real person, feel free to give our friendly contact centre staff a call on 0800 627 739.

If you'd like to actually see a real person, drop in to our campuses in Auckland, Palmerston North, or Wellington.

Email [contact@massey.ac.nz](mailto:contact@massey.ac.nz)

### STUDENT ADVISERS

We understand it's a big decision. We have heaps of people available to answer any questions you may have about studying with us.

Dedicated international, Māori and Pacific student advisers are also available.

### EVENTS

We host a variety of exciting events. Please visit [massey.ac.nz/events](https://massey.ac.nz/events) for details. We also have stands at various career and tertiary education expos held all over New Zealand (and beyond). Feel free to contact us if you want to find out when and where.

### INTERNATIONAL STUDENTS

The International Recruitment team is the first point of contact for prospective students. If you are considering studying at Massey we welcome your enquiry, and look forward to helping you join us.

Phone +64 6 350 5701

Email [international@massey.ac.nz](mailto:international@massey.ac.nz)

Web [massey.ac.nz/international](https://massey.ac.nz/international)

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