

Biological Sciences

Postgraduate Handbook 2018



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

SCIENCE

SCHOOL OF BIOLOGICAL SCIENCES

Welcome to the School of Biological Sciences

Each year the School of Biological Sciences welcomes more than 100 new postgraduate students seeking to acquire internationally competitive skills and research training through diplomas and masters degrees, or professional postgraduate training that contributes directly to the New Zealand economy through the Master of Bioscience Enterprise programme.



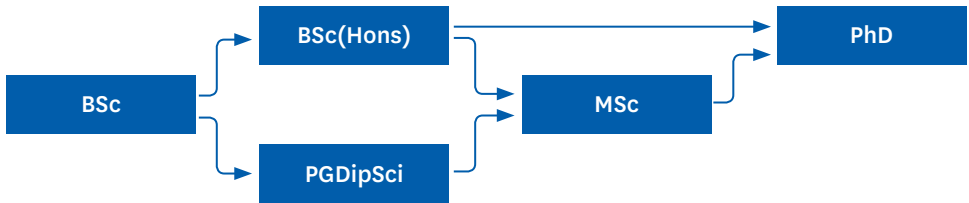
As a postgraduate student you'll be working much more closely with our staff and professional researchers based in the school, in areas as diverse as biomedicine, bioinformatics and conservation ecology. Our staff are recipients of national and international research funding and awards, and feature regularly in scientific communication through all forms of media.

We offer real-world research experience in the Institute for Innovation in Biotechnology (IIB) with industry co-locators, or our Joint Graduate School partnerships with Crown Research Institutes like Plant & Food and the Cawthron Institute, or the Department of Conservation, the Auckland Museum and Auckland Zoo, and many more government and industry partners.

The School of Biological Sciences is a fun, vibrant and supportive place to learn and train for a science-based career – we look forward to welcoming you.

PROFESSOR EILEEN McLAUGHLIN
Head of School

Postgraduate study options in Biological Sciences



Bachelor of Science (Honours) (BSc(Hons))

Prerequisites

- A BSc or an approved equivalent with at least 90 points at Stage III or above, including at least 60 points from Stage III Biological Sciences
- You will require a GPA of at least 5.0 in 45 points at Stage III or above in Biological Sciences
- Approval from the Head of School is required. Students with a GPA below 7 are advised to consider taking the PGDipSci followed by the 120-point MSc degree.

Programme structure

- One year full-time or two years part-time, including a research dissertation (BIOSCI 788) worth 45 points
- The courses, worth a total of 75 points, must include:
 - 15 points from BIOSCI 762
 - At least 45 points from BIOSCI 724-759, BIOINF 701
 - Up to 15 points from a 700-level course in a related subject

Postgraduate Diploma in Science (PGDipSci)

Prerequisites

- A BSc or an approved equivalent with a major in Biological Sciences, and a GPA of at least 3.0

Programme structure

- 90 points from BIOSCI 724-761 or BIOINF 701. 30 points may be taken from 600 or 700-level courses in related subjects. The total enrolment for the PGDipSci must not exceed 160 points.
- A class size limit is imposed (on BIOSCI 724, 725, 727, 731, 735, 736, 739, 741, 747, 748, 749, 755, 757, 758, 759, BIOINF 701) and students may be placed on a waitlist.
- Students wishing to proceed to MSc should enrol in the Thesis Proposal course (BIOSCI 761) as part of their PGDipSci programme, provided they have achieved the required grades and identified a thesis research topic in consultation with a member of the academic staff who has agreed to supervise the MSc project.



Master of Science (MSc)

Prerequisites

- A PGDipSci in Biological Sciences, including BIOSCI 761 or equivalent with a GPA of at least 4 in 90 points, at least 75 points of which must be in 700-level courses; or a BSc(Hons) in Biological Sciences, with a GPA of at least 4 in 90 points.
- Applications for admission to the MSc following a Bachelor of Technology (Biotechnology) will be considered on a case-by-case basis.

Programme structure

- A Thesis (BIOSCI 796) worth 120 points, completed between one year full-time to two years part-time, or some combination
- Enrolment must begin on 1 December, 1 March or 15 July, as arranged with the supervisor.
- Students who have passed BIOSCI 762, BTECH 432, ENVSCI 701 or MEDSCI 701 are not required to complete BIOSCI 761.
- If BIOSCI 761 was not completed as part of the PGDipSci, students must obtain special permission to complete this course in the first semester of the MSc programme.

Doctor of Philosophy (PhD)

Quick facts

Points per degree: 360 points

Full-time study: 3-4 years

Part-time study: 6-8 years

Degree structure: Research

Application closing dates: Apply at any time

Start date: Start at any time

For more information, go to

www.science.auckland.ac.nz/phd

Entry to PhD

The normal requirement for admission to the PhD is an honours degree with second class honours (first division) or better, either BSc(Hons), BTech or MSc. Candidates with overseas qualifications will have their eligibility for admission to PhD assessed by the Admissions Office upon receipt of all required documentation. Candidates may be required to enrol in one or more courses concurrent with research work to complement either their research work, or their background in the subject.



For a searchable database where you can find masters and doctoral supervisors and research projects that you can join visit www.findathesis.auckland.ac.nz

Research areas

Research in the School of Biological Sciences is conducted across three research groups and several research centres and institutes. Subject areas range from biomedical, microbial and plant biotechnology to environmental, ecological and conservation science. The school operates cutting-edge facilities and services supporting both academic groups and co-located companies. Many services are also available to external companies on a contract basis.

- Biomedical and applied biology
- Cellular, molecular and organismal biology

- Ecology, evolution and behaviour
- Joint Graduate Schools with Crown Research Institutes

Scholarships and awards

The University of Auckland will provide guaranteed scholarships to high achieving domestic students admitted to programmes, including BSc(Hons), PGDipSci, MSc and PhD.

Find out more on

www.auckland.ac.nz/scholarships

“My interest in Biology and the research environment meant that postgraduate study was the most likely direction for me to take after my undergraduate studies.

“My research is focused on drug development to target and treat obesity and diabetes. My area of study utilises the theory and practicality of all fields of research within the biological sciences, ranging from structural biology to translational animal studies.

“When I complete my PhD, I hope to enter the highly competitive research field. My experiences could also lead into academia and teaching.

“I’ve been involved with the Postgraduate Students’ Association (PGSA). The group frequently holds social activities and events specifically for postgraduate students, which has made it easy for me to meet new people from different backgrounds and disciplines.

“It can be a daunting experience to study in a large university and faculty, but I think the amount of support and resources available and the people you meet on your journey more than make it worthwhile!”

Aqfan Jamaluddin is studying for a PhD in Biological Sciences. He received a Maurice Wilkins Centre PhD Student Scholarship.



Postgraduate Biological Sciences courses

Course code	Title	Semester
BIOINF701	Bioinformatics	S1
BIOINF 702	Comparative Bioinformatics	S1
BIOSCI 724	Marine Ecology	S1
BIOSCI 725	Ecological Physiology	S1
BIOSCI 728	Neuroethology	S1
BIOSCI 735	Advanced Behavioural Ecology	S1
BIOSCI 737	High Resolution Imaging of Biological Molecules	S1
BIOSCI 738	Advanced Biological Data Analysis	S1
BIOSCI 739	Dialogues in Biology	S1
BIOSCI 741	Applied Microbiology and Biotechnology	S1
BIOSCI 747	Biosecurity and Invasion Biology	S1
BIOSCI 752	Plant Genomics and Biotechnology	S1
BIOSCI 755	Genomics and Gene Expression	S1
BIOSCI 759	Molecular Cell Biology and Biomedicine	S1 & 2
BIOSCI 761	MSc Thesis Proposal	S1 & 2
BIOSCI 762	BSc(Hons) Dissertation Proposal	S1
BIOSCI 788 A+B BSc(Hons)	Dissertation in Biological Sciences	S1 & 2
BIOSCI 796 A+B MSc	Thesis in Biological Sciences	S1 & 2
BIOINF 703	Genome Bioinformatics and Systems Biology	S2
BIOINF 704	Statistical Bioinformatics	S2
BIOSCI 727	Aquaculture	S2
BIOSCI 729	Evolutionary Biology	S2
BIOSCI 730	Entomology and Biosecurity	S2
BIOSCI 731	Biogeography	S2
BIOSCI 733	Molecular Ecology and Evolution	S2
BIOSCI 734	Terrestrial Plant Ecology	S2
BIOSCI 736	Microbial Genomics and Metabolism	S2
BIOSCI 746	The Molecular Machinery of The Cell	S2
BIOSCI 748	Weed and Pest Management	S2
BIOSCI 749	Ecology of Microbial Interactions	S2
BIOSCI 751	Plant-microbiology Interactions	S2
BIOSCI 753	Synthesis of Plant Products and Foods	S2
BIOSCI 754	Plant Genomes and Gene Expression	S2
BIOSCI 757	Structural Biology	S2
BIOSCI 758	Development, Differentiation and Disease	S2

For course descriptions and more information, go to sbs.auckland.ac.nz/courses

Careers in Biological Sciences



"I've always had a deep interest in the natural world. I chose to study a Master of Science in Biological Sciences because I want to contribute something new to the study of biodiversity.

I love being immersed in the academic literature and debates that form the foundation of my area, and the idea of contributing something new to the discourse excites me.

"My masters thesis is focused on improving capture methods for parasitoid wasps. Before we can begin to understand the estimated 3,000 species of parasitoid wasps in New Zealand, it is crucial to understand how to catch them more efficiently and in more cost-effective ways.

"I received two summer studentships at Landcare Research which gave me paid experience in the field of biodiversity and ecology. I fostered links with my future masters supervisor during that time and developed an understanding of what 'real research' and experience looks like.

"When I finish my masters, I hope that it will lead me into a career in academia or within applied sciences.

Tom Saunders is studying for a Master of Science in Biological Sciences.

Biological Sciences investigates all levels of life, from biological molecules to global ecosystems. The number of graduates in this area has grown rapidly in recent years. Possible career options are as follows:

- Agriculture
- Aquaculture
- Aquatic biologist
- Biomedical research scientist
- Biomedical company representative
- Biotechnologist in Government and industrial laboratories
- Brewing industry
- Clinical biochemist
- Conservation biology
- Dairy industry
- Ecologist
- Entomologist
- Environmental resource management planning
- Environmental consultant
- Fisheries scientist
- Food scientist
- Government service (MPI, DOC)
- Health-related occupations
- Journalism
- Laboratory technician
- Marine biologist
- Medical research
- Museum curator
- Nursery management
- Parks conservator
- Patent law/intellectual property
- Pharmaceutics
- Physiologist
- Plant tissue culture
- Plant protection and conservation
- Publishing
- Research scientist
- Science librarian
- Teaching: primary, secondary, polytechnic, university
- Zoological curator

Helpful information

Academic dates

www.auckland.ac.nz/dates

Accommodation

www.accommodation.auckland.ac.nz

Apply for postgraduate study

www.auckland.ac.nz/applynow

Career Development and Employment Services

www.cdes.auckland.ac.nz

Childcare

www.auckland.ac.nz/childcare

Course advice and degree planning in Science

www.science.auckland.ac.nz/student-centre

Disability Services

www.disability.auckland.ac.nz

How to enrol

www.auckland.ac.nz/enrolment

Information for postgraduate students

www.postgraduate.ac.nz

International students

www.international.auckland.ac.nz

Libraries and Learning Services

www.library.auckland.ac.nz

Māori and Pacific students

www.science.auckland.ac.nz/tuakana

Need help?

www.askauckland.ac.nz

Postgraduate Students' Association

www.pgsa.org.nz

Rainbow Science Network for LGBTI students

www.science.auckland.ac.nz/rainbowsience

Scholarships and awards

www.scholarships.auckland.ac.nz

www.auckland.ac.nz/fees

Support for students

www.science.auckland.ac.nz/support

APPLICATIONS CLOSE ON 8 DECEMBER

**Questions about Biological Sciences?
pgscience@auckland.ac.nz**

Disclaimer

Although every reasonable effort is made to ensure accuracy, the information in this document is provided as a general guide only for students and is subject to alteration. All students enrolling at the University of Auckland must consult its official document, the University of Auckland Calendar, to ensure that they are aware of and comply with all regulations, requirements and policies.



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