Biological Sciences

Undergraduate 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

A degree in Biological Sciences introduces you to some of the major challenges and opportunities of the 21st century, and sets you on the path to meet them.

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

Scientific discovery in the biological sciences has advanced at breathtaking speed since the turn of the millennium and is now delivering a new generation of therapies in health and medicine, sustainable consumer-focused products in agricultural biotechnology and strategies for the protection of fragile ecosystems. To be a part of this biological revolution we need graduates that are biologically literate with knowledge that transcends traditional discipline boundaries in biosciences. The School of Biological Science offers courses that span the spectrum of biology from atoms and molecules to ecosystems, each taught by teams of academics who are experts in their field. The undergraduate major in Biological Sciences captures the sense of rapid innovation in this field of science and gives our students a unique, integrated perspective of the importance of biology in modern society and in the biological-based industries, leaving our graduates well-placed to enter employment or progress to postgraduate study.

On behalf of all the staff within the School of Biological Sciences, I look forward to meeting you during your studies and sharing our passion for biology.

DR JOHN TAYLOR
Deputy Head (Academic)

Bachelor of Science in Biological Sciences

We offer a wide range of subject areas that allow you to integrate both molecular and whole organism aspects of biology.

Preparation for school leavers

If you're interested in studying Biological Sciences, we recommend that you take Biology, Chemistry, Physics, one of either Statistics or Calculus, and an English-rich subject to prepare yourself for study in this area.

Tertiary Foundation Certificate

If you lack the grades to gain admission and you would like to study Biological Sciences, we encourage you to enrol in the Tertiary Foundation Certificate programme. It is a one-year programme that prepares students for study at tertiary level. As part of the programme, two courses in Biological Sciences are offered, and a pass in these two courses will provide you with the necessary background to continue with any Stage I Biology course.

For more information visit **www.auckland.ac.nz/tfc** or **email tfc@auckland.ac.nz**

Complementary majors

We strongly recommend a double major as it will enhance your career options by providing a broader base of skills and knowledge.

BIOLOGICAL SCIENCES +

Chemistry
Earth Sciences
Environmental Science
Geography
Marine Science
Pharmacology
Physiology
Exercise Sciences
Statistics

www.science.auckland.ac.nz/doublemajors

BSc degree planner – Biological Sciences

BSc

Year 1

BIOSCI 101	BIOSCI 1XX	BIOSCI 1XX	BIOSCI 1XX				

With appropriate prerequisites can also be filled by Stage II or III.

Year 2

BIOSCI 2XX	BIOSCI 2XX						GEN ED

Stage II: At least 30 pts, with at least 15 pts from each of two of the three groups:
(BIOSCI 201-203) (BIOSCI 204, 205, 208) (BIOSCI 206, 207, 210)

Any Stage Any Stage

Year 3

BIOSCI 320-396, BIOINF 301	BIOSCI 320-396, BIOINF 301	BIOSCI 320-396, BIOINF 301	BIOSCI 320-396, BIOINF 301				GEN ED

Stage III Science

Stage II or III Science

1. Courses in a minimum of three subjects listed in the BSc Schedule.
2. At least 180 points (12 courses) must be above Stage I.
3. Up to 30 points (two courses) may be taken from outside the faculty.
4. 30 points (two courses) must be taken from the appropriate General Education Schedules for BSc students.
5. At least 75 points must be at Stage III, of which 60 points must be in the majoring subject.

It is the student's responsibility to check that the final programme complies with University Regulations. The Faculty of Science is the final authority on all BSc regulations.

To view regulations for majors, and course descriptions, see www.calendar.auckland.ac.nz
BSc degree requires: 360 points (24 x 15 point courses). Each box represents one 15 point course.
It is recommended that students enrol in eight courses each year.

Degree Planners for double majors can be found at www.science.auckland.ac.nz/course-planning

Undergraduate Biological Sciences courses		
Course code	**Title**	**Semester**
Stage I		
BIOSCI 100/BIOSCI 100G*	Antarctica: The Frozen Continent	S2
BIOSCI 101	Essential Biology: From Genomes to Organisms	S1
BIOSCI 102	Plants, Microbes and Society	S2
BIOSCI 103	Comparative Animal Biology	S2
BIOSCI 104/BIOSCI 104G*	New Zealand Ecology and Conservation	S1
BIOSCI 106	Foundations of Biochemistry	S2
BIOSCI 107	Biology for Biomedical Science: Cellular Processes and Development	S1
Stage II		
BIOSCI 201	Cellular and Molecular Biology	S1
BIOSCI 202	Genetics	S2
BIOSCI 203	Biochemistry	S2
BIOSCI 204	Principles of Microbiology	S1
BIOSCI 205	Plant, Cell and Environment	S2
BIOSCI 206	Principles of Ecology	S1
BIOSCI 207	Adaptive Design	S2
BIOSCI 208	Invertebrate Diversity (not taught in 2018)	
BIOSCI 209	Biometry	S1
BIOSCI 210	Evolution and the Biological Origin of Life	S2
Stage III		
BIOINF 301	Introduction to Bioinformatics	S1
BIOSCI 320	Pure and Applied Entomology (not taught in 2018)	
BIOSCI 321	Plant Pathology	S1
BIOSCI 322	Evolution of Genes, Populations and Species	S2
BIOSCI 323	Plant Diversity	S2
BIOSCI 328	Fisheries and Aquaculture	S1
BIOSCI 329	Biology of Fish	S2
BIOSCI 333	Marine Ecology	S1
BIOSCI 335	Ecological Physiology	S2
BIOSCI 337	Animal Behaviour	
BIOSCI 340	Plant Cell Biology and Biotechnology	S2
BIOSCI 347	Environmental Microbiology and Biotechnology	S2
BIOSCI 348	Food and Industrial Microbiology	S2
BIOSCI 349	Biomedical Microbiology	S1
BIOSCI 350	Protein Structure and Function	S1
BIOSCI 351	Molecular Genetics	S1
BIOSCI 353	Molecular and Cellular Regulation	S2
BIOSCI 354	Gene Expression and Gene Transfer	S2
BIOSCI 356	Developmental Biology and Cancer	S1
BIOSCI 358	Nutritional Science	S2
BIOSCI 394	Conservation Ecology	S1
BIOSCI 395	Pacific Biogeography and Biodiversity	S2
BIOSCI 396	Terrestrial Ecology	S1

**Note: Cannot be taken by Biological Sciences majors as General Education courses.*

Careers in Biological Sciences

There are many career opportunities with a degree in Biological Sciences.

Agriculture	Health-related occupations
Aquaculture and aquatic biologist	Journalism
Biomedical representative	Laboratory technician
Biotechnologist	Marine biologist
Brewing industry	Medical diagnostics
Clinical biochemist	Museum curator
Conservation and biology	Nursery management
Dairy industry	Parks conservator
Ecologist	Pharmaceutics
Education	Physiologist
Entomologist	Plant protection
Environmental consultant	Plant tissue culture
Fisheries scientist	Research scientist
Food scientist	Zoological curate
Government services (MPI, DOC)	

Ankita Kaw *is studying for a Bachelor of Science majoring in Biological Sciences.*

"I decided to study Biological Sciences because I have an immense interest in knowing what happens to the body and why: how we are made, and how things function in our body to get us going through the day.

"I love how relevant biology is to us. Learning about all the physiological processes occurring in our bodies, for example, what happens while we're sick. It's so interesting knowing exactly why you get struck down with a cold, and what your immune system is doing to fight it.

"I really enjoy my labs. They're such an interesting way to grasp the concepts of what we study. Being a visual learner, it helps a lot. Most of the labs I enjoy are ones that involve dissections – they're very eye opening!

"I'm leaning towards doing postgraduate research in Biological Sciences, but I'm keeping my options open.

"I would love to go to France for an exchange, which hopefully I can do during my postgrad study. I learnt French for years and would love to place myself in an environment where I can study and speak the language at the same time."

Helpful information

Academic dates
www.auckland.ac.nz/dates

Academic Integrity Course
www.auckland.ac.nz/academic-integrity

Accommodation
www.accommodation.auckland.ac.nz

Buy coursebooks
www.science.auckland.ac.nz/resource-centre

Career Development and Employment Services
www.auckland.ac.nz/careers

Course advice and degree planning in Science
www.science.auckland.ac.nz/student-centre

General education
www.auckland.ac.nz/generaleducation

How to apply
www.apply.auckland.ac.nz

How to enrol
www.auckland.ac.nz/enrolment

International students
www.international.auckland.ac.nz

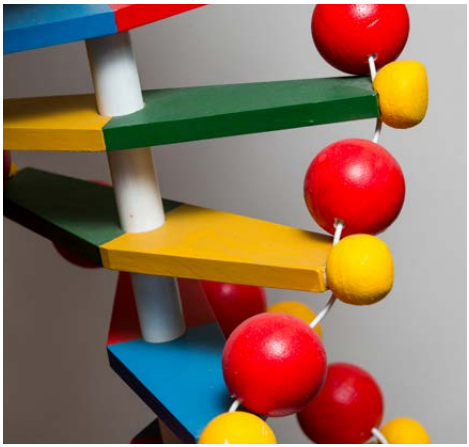
Māori and Pacific students
www.science.auckland.ac.nz/tuakana

Need help?
www.askauckland.ac.nz

Rainbow Science Network for LGBTI students
www.science.auckland.ac.nz/rainbowscience

Scholarships and awards
www.scholarships.auckland.ac.nz

Support for students
www.science.auckland.ac.nz/support



APPLICATIONS CLOSE ON 8 DECEMBER

Questions about Biological Sciences?
sbs-info@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.

THE UNIVERSITY OF AUCKLAND
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NEW ZEALAND

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