

Ecology

Undergraduate Handbook 2018



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

SCIENCE

Welcome to Ecology

The Schools of Biological Sciences and Environment, with assistance from Statistics and Marine Science, welcome you to a rich and rewarding programme in Ecology.



Challenges to the well-being of our environment, and the ecosystems that sustain it, are growing. Meeting these challenges head on requires a deep understanding of the ecological interactions in the world around us, and an ability to bring to bear a range of new techniques and technologies ranging from molecular genetics of small populations to tracking plants and animals across entire landscapes. Such work relies heavily on research done in the field and in the laboratory in New Zealand and abroad.

Are you up for the challenge? Are you excited by the prospect of mastering and creating new knowledge that pioneers ecological approaches that can help restore, maintain and enhance the resilience of our environment? Cooperation across our departments and schools gives you a wide range of choices for how you can make your contribution.

DR KEVIN SIMON
Chair, Board of Studies in Ecology

Why study Ecology?

- Students study the relationships between living organisms, from microbes to animals, and their physical environment
- Core courses provide a foundation in general ecology and biological sciences, physical and environmental sciences, and analytical skills
- Highly flexible course schedule allows students to pursue areas that suit their interests and career aspirations
- Many courses include substantial field components, allowing students to see ecology in action
- Students have access to Centre for Biodiversity and Biosecurity (www.cbb.org.nz)
- Programme has strong links with Crown Research Institutes

Bachelor of Science in Ecology

Ecology is the study of the distribution and abundance of life, and the interactions between organisms and their environment. It brings together aspects of Environmental Science, Biological Science, Marine Science, Geography and Statistics. The first two years of the programme focus on core ecology, environmental science, and management and modelling. In the third year, students have the opportunity to specialise in an area of interest to them. The programme also incorporates training in techniques and skills (computational/analytical/spatial/genetic) that are essential for solving ecological problems.



Photo: Richard Taylor

Preparation for school leavers

Students will be selected on the basis of their rank score. English-rich subjects are useful; however, we recommend that Year 13 students take preparation subjects relating to the major of Ecology. This includes Chemistry, Biology, Statistics or Geography.

www.science.auckland.ac.nz/subject-guide

For course planning and enrolment, go to www.science.auckland.ac.nz/student-centre

Thinking about postgraduate study options?
Go to www.science.auckland.ac.nz/ecology

Complementary majors

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

ECOLOGY +

[Anthropological Science](#)

[Biological Science](#)

[Chemistry](#)

[Earth Sciences](#)

[Environmental Science](#)

[Geography](#)

[Marine Science](#)

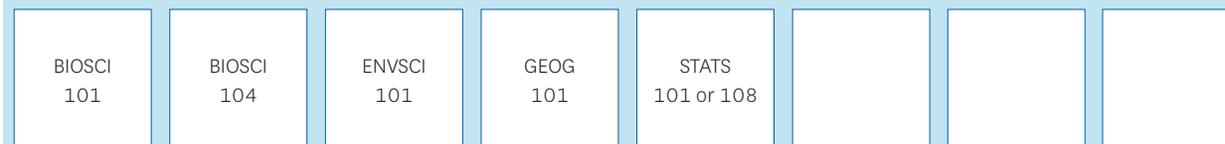
[Statistics](#)

www.science.auckland.ac.nz/doublemajors

BSc degree planner – Ecology

BSc

Year 1



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

Year 2



Any Stage

Year 3



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 (2 courses) must be taken from the appropriate General Education Schedules for BSc students.
5. At least 75 points (5 courses) 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 1.5 point courses). Each box represents one 1.5 point course.
It is recommended that students enrol in 8 courses each year.

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

Undergraduate Ecology courses

| Course code | Title |
|------------------|--|
| Stage I | |
| BIOSCI 101 | Essential Biology: From Genomes to Organisms |
| BIOSCI 104 | New Zealand Ecology and Conservation |
| ENVSCI 101 | Environment, Science and Management |
| GEOG 101 | Earth Surface Processes and Landforms |
| STATS 101 | Introduction to Statistics |
| STATS 108 | Statistics for Commerce |
| Stage II | |
| BIOSCI 206 | Principles of Ecology |
| BIOSCI 209 | Biometry |
| ENVSCI 201 | Natural and Human Environmental Systems |
| Stage III | |
| ANTHRO 349 | Primate Behaviour, Ecology and Conservation |
| BIOSCI 320 | Pure and Applied Entomology |
| BIOSCI 321 | Plant Pathology |
| BIOSCI 322 | Evolution of Genes, Populations and Species |
| BIOSCI 323 | Plant Diversity |
| BIOSCI 328 | Fisheries and Aquaculture |
| BIOSCI 329 | Biology of Fish |
| BIOSCI 333 | Marine Ecology |
| BIOSCI 335 | Ecological Physiology |
| BIOSCI 337 | Animal Behaviour |
| BIOSCI 347 | Environmental Microbiology and Biotechnology |
| BIOSCI 394 | Conservation Ecology |
| BIOSCI 395 | Pacific Biogeography and Biodiversity |
| BIOSCI 396 | Terrestrial Ecology |
| ENVSCI 301 | Environmental Science and Decision Making |
| GEOG 317 | Remote Sensing and GIS |
| GEOG 318 | GIS Principles and Practice |
| GEOG 320 | Resources and Environmental Management |
| GEOG 330 | Research Methods in Physical Geography |
| GEOG 331 | Fluvial Geomorphology |
| GEOG 332 | Climate and Environment |
| MARINE 303 | Freshwater and Estuarine Ecology |

Students can select courses to focus on subject areas such as:

- Conservation Ecology and Biosecurity (BIOSCI 394, 396)
- Ecology, Evolution and Behaviour (BIOSCI 322,337, 396)
- Marine and Coastal Ecology (MARINE 302, 303, BIOSCI 329, 333)
- Quantitative Ecology and Modelling (STATS 302, 330, 341)

For course descriptions and prerequisite information, go to www.science.auckland.ac.nz/ecology

Careers in Ecology

Ecological principles and methods are fundamental to the management of resources, including the utilisation and conservation of species and ecosystems. This degree provides you with a qualification that certifies you have the field, laboratory and analytical skills required by many organisations and companies in New Zealand and overseas. Often graduates further specialise with an MSc or PhD depending on their career goals.

- Conservation careers with councils and government departments (Department of Conservation, Ministry for the Environment, Ministry of Fisheries, Ministry of Agriculture and Forestry)
- Biosecurity and pest management (MAF Biosecurity NZ, regional councils)
- Ecological and environmental research roles in crown research institutes (Landcare Research, NIWA, Cawthron Institute)
- Careers in ecological restoration (terrestrial and aquatic environments)
- Environmental policy, consulting and science advisory roles
- Teaching careers in ecology
- Environmental education and community liaison

Nicole McAulay graduated with a Bachelor of Science (Ecology). She was also an Alumni Scholarship recipient.

"I have always been interested in a wide range of outdoor pursuits, so when I discovered the (then) new Ecology major at the University of Auckland it seemed like the perfect fit. I graduated in 2011 with a BSc (Ecology) specialising in Biosecurity and Conservation.

"After graduating, I enrolled in the NMIT Trainee Ranger Certificate in Nelson. Part of the one-year course was work placement with DOC, mostly with weed control. At the end of that year I managed to secure a job with the Ministry for Primary Industries (MPI) as a Fisheries Observer, and have been with MPI for almost three years now. My job involves living and working at sea on board local and foreign fishing vessels within New Zealand waters.

"I am really enjoying this role as it has a very strong, practical component that allows me to spend a lot of time in the field, while at the same time allowing me to put my academic learning to good use!"



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/rainbowsience

Scholarships and awards

www.scholarships.auckland.ac.nz

Support for students

www.science.auckland.ac.nz/support



Photo: Richard Taylor

APPLICATIONS CLOSE ON 8 DECEMBER

**Questions about Ecology?
scifac@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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