



Botany

Connecting plants and people for a sustainable future

"We receive plants that are among the last of their kind in the world, and we have to establish them in a culture and then bulk them up. There will always be plants, so (for botanists) there will always be a job."

Sarah Painter, Lifetech

Because plants provide us with food, fibres and medicines, knowledge about plants is fundamental to our survival.

It's also vital to the health of the planet, as plants influence the Earth's climate, and most life forms on Earth depend directly on plants for oxygen, food, or habitat. Plants also include some of the strangest and most beautiful living things on Earth.

Modern Botany includes research into the biochemistry, ecology, genetics and physiology of plants, plant evolution, the role plants play in ecosystems and plant biotechnology. It covers topics from the breeding of crop plants using the most modern molecular techniques, through to modelling the effects of climate change on plants.

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Why study Botany at Otago

It is an exciting and challenging degree taught by a team of excellent plant scientists. You will learn about important, topical issues such as biotechnology, genetic modification, ecosystem services, sustainability and the ecological impacts of environmental change.

Studying Botany at Otago will enable you to examine New Zealand's unique flora on land and in the sea. You will study its diversity and evolutionary history as well as how this flora may be affected by changing climatic conditions, ocean acidification, and invasive organisms. Botany courses will cover a wide range of topics from how photosynthetic organisms function to understanding their role in ecosystem processes. This will include the importance of plants in addressing some of the challenges and problems that face society in the 21st Century.

Botany courses have great field-trips focusing on various aspects of plant ecology, and allowing you to participate in hands-on study of our exciting natural environment.

The wide range of topics and skills learnt in Botany can lead to many different careers.

CAREER OPPORTUNITIES

There will always be jobs for plant scientists because plants are so fundamental to life on earth.

The world's economies are highly dependent on plants and their associated habitats, not only for food production but also for timber, for the fibres and chemical compounds plants produce and for the ecological services they provide, such as removing CO₂ from the atmosphere.

Plant scientists are employed around the world in industry, governmental and non-governmental organisations that seek to understand and conserve the natural environment, and to educate people about it.

Botany graduates are in high demand in industries such as biotechnology, horticulture, tourism and agriculture.

A Botany degree can also lead to a career in conservation, biosecurity, environmental education, environmental consultancy or academic research.

Our graduates take up positions in local and national government, for instance at the Department of Conservation, and Ministry of Primary Industries and Crown Research Institutes.

BACKGROUND REQUIRED

While an understanding of basic biology would be useful, it is not essential – you will be taught everything you need to know once you start your course.

The basics of cells, plants and their environments are covered in the first year Biology and Ecology papers. All you need is enthusiasm and curiosity!

What will I learn?

A Botany degree will provide you with basic training in plant biology and evolution, ecology and physiology, marine botany, mycology, plant diseases and biotechnology.

You will also gain important skills that are transferable to any career: critical thinking, written and oral communication, information analysis and interpretation, time management, problem solving and lateral thinking.

Can I combine botany with other subjects?

A degree in Botany also allows you to enter into higher degrees at Otago and other institutes. You can include papers from almost any other area in the University in your Botany degree.

For students doing a double degree or double major, Botany is most often combined with Ecology, Plant Biotechnology, Genetics, Law, Zoology, or Marine Science.

Botany is also offered as a degree minor alongside other degree subject majors.

How will I study?

Botany lecturers have an interactive style and work closely with undergraduates.

In laboratory classes, you will gain hands-on experience of fundamental botanical techniques ranging from plant genetics, structure and function to tissue culture and ecological surveys.

Botany courses include field-trips to native forests, grasslands, mountains and beaches.

The Department of Botany provides a friendly, supportive learning environment and produces graduates who are independent, informed people that make a positive contribution to society and the economy – nationally and internationally.

What about further studies

A degree in Botany also allows you to enter into higher degrees at Otago and other institutes. Many MSc and PhD graduates in Botany are employed as research scientists around the world including New Zealand.

PROFILE

Max Buxton

BSc Ecology, PGDipSci Botany, MSc Botany

An abundance of different habitats and environments makes Otago the perfect location for anyone interested in studying botany, says Max Buxton.

"There's so much variation. I've fallen in love with alpine plants, which is something that likely wouldn't have happened at a different university."

Max, who gained a BSc Ecology, a PGDipSci Botany and an MSc Botany during his time at Otago, became interested in this area of expertise after taking some papers for his ecology degree.

"People sometimes think of plants as boring because they don't move around like an animal, but they do - just on different timescales and in really clever and deceptive ways. These adaptations are amazing."

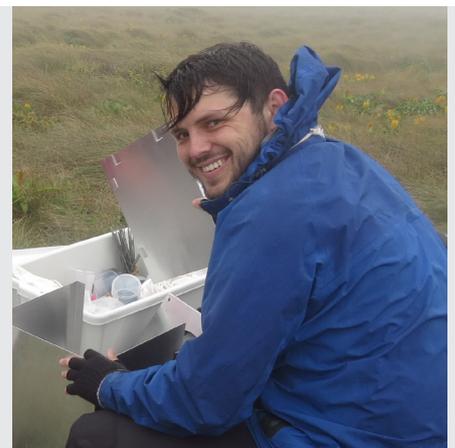
"Botany has a lot to offer and I strongly recommend that anyone interested in sciences should take this course in some capacity. As a discipline it's extremely varied and the students and staff were undertaking very different

projects, from the cellular level right up to the broad ecological level."

Max now works as a Research Associate in the Pollination and Apiculture team at Plant and Food Research, where he studies pollination services in orchards as well as ways to improve the health of honeybees. His studies at Otago were instrumental in preparing him for the job, he says.

"My undergraduate studies provided a good knowledge base and understanding of the methods used in botanical research, and my postgraduate studies are directly related."

"In the future, I plan to continue working in pollination research with the odd bit of science outreach where I can. During my studies I worked and volunteered in science outreach and education, which not only exposed me to new experiences but also helped me to share my love for plants and the natural world and, I must admit, helped me to learn a lot more at the same time."



For questions about
Botany
otago.ac.nz/botany

