

What can I do with a degree in Biological Sciences?

Biological Sciences.



What is Biological Sciences?

Biology is the study of living things, encompassing animals, plants and microorganisms. It covers a huge range of scales from molecules and cells to organisms, populations, and ecosystems.

Understanding how microorganisms, plants, and animals function and interact is essential for preparing for the future.

As biology continues to evolve and new discoveries emerge, it plays a pivotal role in advancing society, particularly in fields such as medicine, agriculture, and biotechnology. Antibiotics, vaccines, disease-resistant crops, and organ transplantation have been all made possible through our understanding of biology.

Biologists are actively researching solutions to critical challenges affecting the living world, including climate change, food security, environmental conservation, and disease eradication.

Learn more

It is important to do some research when planning a future career. Speak with, ask questions of, and follow relevant professional bodies, organisations, companies, thought leaders and industry professionals to learn more about:

- Career opportunities, work environments and salary information
- Education and training requirements.

Examples of professional bodies

- New Zealand Microbiological Society
www.nzms.org.nz
- New Zealand Society of Plant Biologists
<http://plantbiology.science.org.nz>
- Te Apārangi Royal Society of New Zealand
www.royalsociety.org.nz
- The New Zealand Society for Biochemistry and Molecular Biology
<https://www.nzsbmb.org>
- Science Communicators Association of New Zealand
www.scanz.co.nz

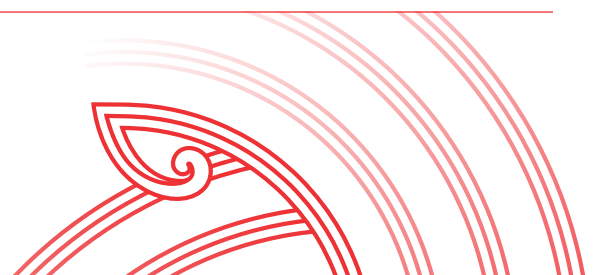
Career and study information

Some study pathways and degrees have a recommended school background, and some careers may require further study beyond a first degree or additional experience.

Gather helpful information from:

- Subject-specific content at
www.canterbury.ac.nz/study/academic-study/subjects/biological-sciences
- Job profiles on career websites like
www.careers.govt.nz
- Job adverts/vacancy descriptions
- Industry professional bodies.

This resource is part of a set of brochures focused on subject majors; many can also be studied as minors.





What skills can graduates gain?

Through studying a degree in Biological Sciences, graduates develop a valuable set of skills and competencies. These skills can include:

- The ability to solve complex biological challenges
- Application of the scientific method
- Knowledge of biological systems and concepts
- Data collection and practical skills through field work
- Laboratory competencies
- Research and data analysis
- Critical analysis of information
- Numeracy and statistical analysis
- Problem solving and innovative thinking
- Written and oral communication
- Technology literacy
- Project management, planning and organisation
- Resilience and adaptability
- Collaboration, teamwork and leadership.

Applied learning

Applied learning opportunities are available through fieldwork- and laboratory-based courses, as well as researching and developing solutions to real-world challenges. These experiences deepen graduates' skillset, awareness of others, working knowledge and employability.

What do employers look for?

Many employers look for generic skills such as communication, client/customer-focus, bicultural competence, cultural awareness, teamwork and initiative.

With technology, globalisation, and other drivers changing society, skills such as resilience, problem solving, and adaptability are important.

Skills that are likely to grow in importance include analytical and creative thinking, systems thinking and technological literacy.*

*World Economic Forum: www.weforum.org/agenda/2023/05/future-of-jobs-2023-skills

How can these skills be developed?

- Some skills are gained through studying
- Extra-curricular activities can help, such as getting involved in clubs, mentoring, cultural groups, part-time work or volunteering
- Be open to professional and personal development opportunities, whether it is undertaking work experience, overseas exchange, skills seminar, or joining an industry group.

Where have graduates been employed?

There are wide-ranging employment opportunities for biologists.

Biological Sciences graduates have gained roles in:

- Biotechnology, medical technology and pharmaceutical companies e.g. Thermo Fisher Scientific, Applied Research Associates NZ
- Agribusiness and food manufacturing e.g. Landcorp, Ngāi Tahu Holdings, Fonterra, Three Boys Brewery, Meadow Mushrooms
- Laboratory services e.g. Eurofins NZ, Canterbury Health Laboratories
- Scientific consultancies and engineering firms e.g. AECOM, Boffa Miskell, EOS Ecology
- National and regional government, organisations and agencies e.g. Department of Conservation, Ministry for Primary Industries, NIWA, EPA, Stats NZ
- Research organisations e.g. Plant & Food Research, ESR NZ, Manaaki Whenua – Landcare Research, Scion
- Education e.g. Tertiary institutions and secondary schools
- Outreach organisations e.g. science centres, museums, broadcast companies
- Not-for-profits e.g. BirdLife International, Cancer Society of New Zealand.

Graduates have also found work with National and global health, conservation and environmental organisations and charities around the world.

What jobs and activities might graduates do?

Graduates with this degree are employed in a range of jobs — see some examples below.

Note: This list is not exhaustive, and some jobs may require further study, training or experience. It is recommended to start with the section 'How can I gain a sense of career direction?'

Data analyst, bioinformatician

- Analyse data and model techniques to solve problems
- Gain insight across differing domains for decision-making purposes

Field worker / laboratory technician

- Plan and carry out research experiments with guidance
- Maintain and calibrate equipment
- Liaise with scientist and industry personnel
- Collect and collate data, and draft reports

Medical laboratory technician

- Carry out tests on samples e.g. blood or tissue, and communicate results

Biotechnology technician

- Test micro-organisms and monitor data
- Develop and test methods
- Assist with developing new products

Scientist, ecologist, biologist, environmental scientist

- Develop scientific solutions to problems in diverse fields from genomics to marine science
- Carry out field and lab tests, record data
- Conduct analysis and write technical reports
- Communicate results/impact to various audiences such as policy analysts and the public
- Interpret regulations and monitor compliance

Secondary school teacher

- Prepare and deliver learning experiences in specialised subjects
- Understand the learning needs of rangatahi, observe progress to personalise support
- Promote the wellbeing of rangatahi

Biosecurity officer

- Prevent the introduction of pest plants and animals into a country, region or habitat
- Monitor geographical entry points and transport vessels
- Supervise the destruction of pests

Resource management / consents officer

- Ensure adherence to environmental regulations
- Process resource consent requests
- Manage stakeholder engagement processes

Science communicator, content design, education officer

- Present science topics to various audiences e.g. publicise research findings
- Manage educational programmes e.g. exhibitions, outreach events, seminars
- Produce content e.g. media releases, videos, graphics

Quality manager

- Ensure that products, processes and systems meet quality standards
- Develop policies and procedures
- Solve problems, make decisions and support others to achieve these standards

Examples of other job titles and careers include:

- Sustainability consultant
- Nature conservation officer
- Researcher / research assistant
- Soil, water or air quality scientist
- Contaminated sites officer
- Food compliance officer
- Science advisor
- Fisheries analyst
- Project coordinator
- Genetic counsellor
- Neuroscientist
- Microbiologist
- Biotechnologist
- Nanotechnologist.

Further study options

Biological Sciences graduates can progress into a number of programmes from Honours to PhD level. Some do further training e.g. in teaching, forensic science, management, or communications.

It is important to determine which, if any, further study options align with future career aspirations.

For further UC study options visit:

www.canterbury.ac.nz/study/academic-study

How can I gain a sense of career direction?

Understanding yourself and others is important to gain a sense of direction. This grows with experience; therefore, trying new things and reflecting on an ongoing basis is important.

Career planning checklist

Discover and reflect on:

- Your values, interests, strengths, abilities, and aspirations
- Your connection to whānau, people, and places
- Lifestyle preferences and location
- The skills you want to gain, use, or enhance

Engage in a variety of experiences to learn about:

- How you want to contribute to society, the environment, and global challenges
- The tasks, responsibilities and work environments you prefer
- Your work values, priorities and interests

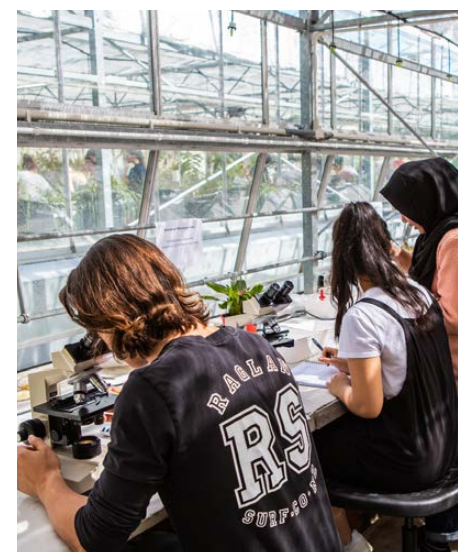
Learn more and gather career and study information

(refer to page one of this resource)

- Speak with people working in careers that interest you; check the realities of a job/career
- Gather information from various sources

Identify your next steps

- Talking to a career consultant can help you to identify your next steps. Visit: www.canterbury.ac.nz/life/jobs-and-careers



What have other students and graduates done?

Explore career stories of students' university experiences and UC alumni who make a difference globally in varied ways.

Visit: www.canterbury.ac.nz/about-uc/why-uc/our-students/student-stories



Michelle

Contract Coordinator, Institute of Environmental Science and Research (ESR)

Master of Science in Biological Sciences

Postgraduate Diploma in Science in Biological Sciences

Bachelor of Science in Biological Sciences

What does your role with ESR involve?

I liaise between scientists, the corporate office, and stakeholders on contractual aspects of scientific work. This includes both commercial work and research projects. Many contracts I handle from inception to completion (writing the contract through to ensuring the contractual obligations have been met).

A good chunk of my role is contract negotiation with stakeholders. This can be around the terms and conditions, hourly rates, milestones, etc.

How did study prepare you for managing all of those details?

The science ESR does is very different to what I studied at uni. However, the basics never change. Uni gave me an understanding of the jargon and the processes behind research projects. Postgraduate study really helped develop my networking and science communication skills which have come in REALLY handy in my role.

Why did you first decide to study Biological Sciences?

I LOVED biology at school. I suppose that made my subject choice pretty easy. My mum also has a Master of Science (in Chemistry) so I thought it was pretty cool that I could (almost) follow in her stead. It was her qualification that really motivated me to continue my study once I had received my Bachelor's.

How did you get involved with the community?

I was the Public Relations Officer and then the President of Golden Key Canterbury. This is where I've made some of those 'friends for life'. Golden Key brings people together across a range of disciplines/subjects all with the common goal of academic success.

Golden Key pushed me outside of the 'science' bubble and gave me the opportunities to develop my communication and leadership skills in a more 'real-world' setting.

Is that something you wish more people knew about doing Biological Sciences?

Biology can take you anywhere. The skills you develop in a science degree are highly transferable and can be applied to any role in any industry. I've always felt like my study was a bit like the jack-of-all-trades in a degree.

Career guidance

Career services are available for future and current students, and recent graduates. To learn more, contact:

Te Rōpū Rapuara | Careers

T: +64 3 369 0303

E: careers@canterbury.ac.nz

www.canterbury.ac.nz/life/jobs-and-careers

Helpful career insights

- Speaking with employers is key to finding opportunities; not all jobs are advertised
- Developing an online presence is useful as employers can search for future employees online
- Learning about recruitment patterns and where to find opportunities is important.

Study advice

Student Advisors at UC help with questions focused on starting, planning and changing studies. To connect with Student Advisors, visit:

www.canterbury.ac.nz/study/study-support-info/study-support

Future students – contact:

The Future Students team

T: 0800 VARSITY (0800 827 748)

E: futurestudents@canterbury.ac.nz

First year students – contact:

Kaitoko | First Year Student Advisors

T: +64 3 369 0409

E: firstyearadvice@canterbury.ac.nz

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Te Kaupeka Pūtaiao | Faculty of Science

T: +64 3 369 4141

E: science@canterbury.ac.nz

www.canterbury.ac.nz/study/academic-study/science

