

What can I do with a degree in Environmental Science?

Environmental Science.



Career planning: what do I need to know?

Knowledge of yourself is important for career decision making. Start by looking at your personal goals, abilities, values and interests to explore study and career options that are relevant to you. Some of these may change over time, so it is important to self-reflect and evaluate your career on an ongoing basis.

What do employers look for?

Many employers look for generic skills such as communication, customer-focus, cultural awareness and teamwork. With technology and globalisation changing the nature of society, skills such as resilience, problem solving and adaptability are valuable at work as well as in life.

How can I develop these skills?

- Some skills are developed through your degree
- Extra-curricular activities can help, for example

getting involved in clubs, mentoring, cultural groups, part-time work or volunteering

- Be open to professional and personal development opportunities. Whether it is undertaking an internship, overseas exchange, skills seminar, or joining an industry group – these activities will enhance your employability.

What else should I know?

The career options in this brochure are examples only and the list is not exhaustive. Some careers may require further study beyond a first degree or additional work experience. Some pathways and degrees have a recommended school background. Find more subject details at www.canterbury.ac.nz/subjects/envr

If this brochure does not answer your questions, talking to an expert such as a career consultant can help you to identify the next steps in your career decision making journey. www.canterbury.ac.nz/careers

What is Environmental Science?

Environmental Science is an interdisciplinary approach to the study of the environment, incorporating its structure and functioning, and human interactions with the environment.

Environmental Science is an integrative subject that builds on a strong disciplinary base in a major subject such as Biological Sciences, Chemistry, Geography, Geology or Physics, with additional relevant study in areas including Antarctic Studies, Forestry, Water Resource Management, Mathematics, Science, Māori and Indigenous Studies, and Statistics.



AT A GLANCE

MORE

Environmental Research Scientists and Spatial Scientists are needed in Aotearoa New Zealand[^]

50

academics from UC and Lincoln University make up the Waterways Centre for Freshwater Management

4.6%

growth expected in the employment of natural and physical scientists by 2020*

What skills have UC graduates gained?

Environmental Science graduates are in demand for their ability to identify, monitor and solve a variety of problems associated with the environment. Through their degree, graduates gain a valuable set of transferable skills such as:

- Understanding and integration of a diverse range of perspectives and disciplines
- Analytical thinking
- Problem solving
- Good planning and organisation
- Oral and written communication
- Cooperation, teamwork and leadership
- Creative, logical and quantitative thinking
- Observation, research and development skills.

Opportunities to apply your learning outside the classroom are available in this major, through field courses and trips. These utilise UC field stations at Cass, Harihari and Westport. Such experiences deepen your skillset, awareness of others, working knowledge and employability.

Where have UC graduates been employed?

Recent UC Environmental Science graduates have gained roles in:

- National and regional government bodies eg, Department of Conservation, Ministry for Primary Industries, Environment Canterbury, New Plymouth Regional Council, Waikato Regional Council, Land Information New Zealand, New Zealand Petroleum & Minerals
- Crown Research organisations eg, Environmental Science and Research (ESR), Landcare Research, GNS Science
- Environmental Science Consultancies eg, New Zealand Environmental Technologies, e3 Scientific
- Professional engineering consultancies eg, Aurecon, AECOM, ENGEO Ltd, Golder Associates Engineering, MWH Global, Parsons Brinckerhoff
- Geotechnical engineers eg, 4D Geotechnics
- Engineering contractors eg, Downer NZ
- Energy companies eg, Solid Energy New Zealand, CRL Energy
- Mining eg, The Moultrie Group, Rio Tinto Group, BHP Billiton
- Spatial systems eg, Vicinity Solutions
- Universities around the world eg, in Australia, Brunei and the United States of America.

📄 www.canterbury.ac.nz/recruitingemployers

[^] Immigration New Zealand's 2017 long-term skill shortage list www.skillsshortages.immigration.govt.nz

* 2017 MBIE Occupational Outlook

What jobs and activities do UC graduates do?

Environmental scientists help businesses be more sustainable, work with engineering agencies to reduce the impact of major projects, advise government on environmental risks, and more – see some examples of jobs below.

Note: Some of the jobs listed may require postgraduate study. See the 'Further study' section.

Environmental scientist / consultant, ecologist

- Develops scientific solutions to problems
- Carries out field and lab tests, records data
- Conducts analysis and writes technical reports
- Interprets regulations and monitors compliance

Resource management officer, resource consents officer

- Ensures adherence to environmental regulations
- Processes resource/building consent requests
- Manages stakeholder engagement processes

Field / laboratory technician

- Plans and carries out research experiments with guidance
- Maintains and calibrates equipment
- Liaises with scientists and industry personnel
- Collects and collates data, and drafts reports

Planner, environmental planner

- Designs and administers plans for developing an area
- Examines how areas are changing and the effect of proposed developments
- Manages projects, including communications
- Reviews and implements policy initiatives and submissions on a region's natural resources

Engineering geologist, geotechnical engineer

- Advises on site selection using geological maps and aerial photographs
- Uses specialised software to design structures
- Advises on construction materials and testing

Geographical information systems (GIS) analyst

- Captures the location of 'assets' eg, bridges, street lights using Global Positioning System (GPS) tools in the field
- Converts data to maps and presents geographical information
- Administers the structures for GIS data storage
- Interprets different datasets and investigates patterns for geographical planning purposes

Geologist

- Studies the Earth's structure and processes
- Carries out research to find natural resources
- Monitors the geotechnical conditions of a site
- Surveys areas to prepare and design maps
- Advises on land use and natural hazard risks

Coal / mine geologist

- Tests ore blending and block modelling
- Facilitates grade control programmes
- Liaises with engineers and managers

Graduate hydrogeologist, junior hydrologist

- Analyses the effect of environmental changes or weather conditions on water flow
- Forecasts and monitors water usage and rainfall
- Measures chemical levels or water pollution
- Administers licences for companies to use rivers

Entrepreneur and CEO

- Develops an idea to form their own business
- Offers their services as a consultant

Get started at www.canterbury.ac.nz/careers/Entrepreneurship/getting_started.shtml

What professional bodies can people link to?

As they progress, students and graduates often join professional bodies relevant to their area of interest. These organisations can provide regular communications and offer the chance to network.

- Environment Institute of Australia and New Zealand www.eianz.org
- Clean Air Society of Australia and New Zealand www.casanz.org.au
- Society of Environmental Toxicology and Chemistry www.setac.org
- New Zealand Hydrological Society www.hydrologynz.org.nz
- New Zealand Ecological Society www.nzes.org.nz
- New Zealand Planning Institute www.planning.org.nz

Social media networks such as LinkedIn, Facebook and Twitter can provide avenues to keep up-to-date with industry knowledge, networking opportunities, events and job vacancies.

Why do further study and what are my options?

Postgraduate study can facilitate career benefits such as specialist skills, higher starting salary, and advanced research capability. It can also lead to an academic job. It is important to determine which, if any, further study will help your career.

Environmental Science graduates can progress into a number of programmes from honours to PhD level. Some do further training eg, in Engineering Geology, Geographic Information Systems, Teaching and Learning, Urban Resilience and Renewal, Water Resource Management.

For UC listings and prerequisites visit www.canterbury.ac.nz/courses



Useful links

UC Careers, Internships & Employment
www.canterbury.ac.nz/careers

UC Careerhub – internships, jobs, tips
www.careerhub.canterbury.ac.nz

Careers New Zealand
www.careers.govt.nz

Crown Research Institute careers
www.careers.sciencenewzealand.org

Future in Tech
www.futureintech.org.nz

Environmental Protection Authority
www.epa.govt.nz

Helena Ruffell



Bachelor of Science in Biochemistry
Studying towards a Master of Science in
Environmental Science

What motivated you to pursue your chosen subjects?

I was really inspired after hearing about how much danger our daily way of life is causing on human and environmental health. I wanted to learn how to help knowing that most of this can be avoided. Biochemistry is the basis of life – everything comes from or is related to it and we need to be able to protect the absolute basics of how we live for us to survive.

How are your career inspirations influenced by environmental concerns?

I want to become an environmental scientist or biochemist to help identify hazards to human and environmental health and to provide a more sustainable future for all inhabitants.

How have you increased your employability?

I took part in a UC summer internship at the Institute of Environmental Science and Research (ESR) through a UC Summer Research Scholarship. I worked with Dr Louise Weaver

looking at data from a groundwater health index and really enjoyed the experience. It is a field of work which is unfamiliar to me (data analysis and computer coding) and I learned so much from it. I have really enjoyed working in a 'real' office setting to help get an idea of what a full-time job would be like.

Do you have any advice for students following the same path?

Always think about how to apply your knowledge for the safety and improvement of our health and environment.

Read more online

Read Helena's full story about her university experience on our profiles website. UC alumni make a difference in varied ways around the globe. Find out where Environmental Science graduates are now at www.canterbury.ac.nz/profiles

The information in this brochure was correct at the time of print but is subject to change.

More information

UC students seeking study advice.

Environmental Science Programme
Te Rāngai Pūtaiao | College of Science

Environmental Science is an interdisciplinary programme, taught by staff from Biological Sciences, Chemistry, Forestry Science, Gateway Antarctica, Geography, Geological Sciences, Mathematics and Statistics and Physics and Astronomy. Academic staff are complemented by guest lecturers from industry, Crown Research Institutes and local government.

As demand for the planet's limited resources grow, so does the need for people who understand the environment and how to protect it. If you would like to be part of the solution, please get in touch.

T: +64 3 364 2818

E: sally.gaw@canterbury.ac.nz

www.canterbury.ac.nz/science/schools-and-departments/environmental-science

Anyone seeking careers advice.

Careers, Internships & Employment
Te Rōpū Rapuara

CIE offers intending and current students and recent graduates a wide range of services, including individual career guidance, seminars, career resources and student and graduate employment opportunities.

T: +64 3 364 3310

E: careers@canterbury.ac.nz

www.canterbury.ac.nz/careers

[UC Careers Employment](#)

Prospective students seeking study advice.

Student Liaison
Te Rōpū Takawaenga

Student Liaison provides intending students with information about the university system in general and the courses, qualifications, support and facilities available at UC.

Ōtautahi | Christchurch

T: 0800 VARSITY (0800 827 748)

E: liaison@canterbury.ac.nz

Tāmaki-makaurau | Auckland

T: 0800 UCAUCK

E: auckland@canterbury.ac.nz

Te Whanganui-a-Tara | Wellington

T: 0800 VARSITY (0800 827 748) ext 93231

E: wellington@canterbury.ac.nz

www.canterbury.ac.nz/liaison