# University of Canterbury Postgraduate science





Tūhuratia tō ao Discover your world

# UC has the most field stations of any New Zealand university

# More than 20 postgraduate science degrees to choose from





## Postgraduate science at UC

### Contents

1
4
5
6
8
10
13-17
18
20

### Welcome to UC Science | Nau mai, haere mai ki Te Rāngai Pūtaiao

At UC Science, we take pride in your success. If you want to dive deeper into your field of research, are keen to advance in your career, want to boost your employment potential or are seeking a new challenge – we will help you do it.

#### It's all here

At UC Science you'll find like-minded people, leading researchers to mentor you, state-of-the-art facilities and challenging, rewarding degrees – some of which are the only ones of their kind in Australasia. You'll get to experience science in the real world – in our labs and on-site research centres and clinics, at our field stations, and in the workplace.

#### **Realise your potential**

Most of our postgraduate courses include practical industry placements, internships, projects, lab or field work. Global study experiences are also on offer, including the chance to go on an exchange to a partner university.

Expand your mind, open doors and realise your potential with UC Science.





# Take the next step.

Postgraduate science is your ticket to amazing places, new opportunities and career success. The journey starts now.

# Why postgraduate science?

Postgraduate study can fast-track career advancement, significantly increase your earning potential, help you stand out to employers, and increase your knowledge in an area you're interested in.

#### In-depth research

Research is a central part of the postgraduate experience. Most postgraduate degrees involve a significant research component. This allows you to dive deep and specialise in your chosen field and conduct original research that contributes to knowledge in that area. UC Science students can specialise in a broad range of research areas at graduate and postgraduate level.

#### **Expert supervision**

Interaction with academics and teaching staff increases at postgraduate level, and effective supervision is a key part of the learning experience for higher degree candidates. At UC, students are taught and supervised by scientists at the forefront of advances in their field. Teaching and supervision is available in most disciplines up to PhD level.

#### **Build connections**

Networking is a crucial part of career development. Postgraduate study gives you wide access to professionals in your chosen field, through internships, work experience, research with expert supervisors, industry placements, clinical experience, and more.

#### **Career advancement**

A postgraduate degree is a marketable qualification that can make you even more employable. It is evidence of intellectual ability, persistence, determination and high achievement – all qualities sought-after by employers looking to fill leadership roles.

#### **Employment opportunities**

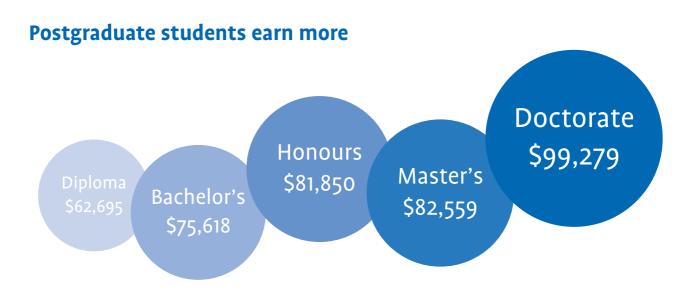
A postgraduate degree can open doors for employment and gain you entry into specific occupations. In fact, many roles and career sectors call for a master's degree as the minimum requirement for employment.

#### **Better earning potential**

The more educated you are, the more you earn. Research shows that study at postgraduate level (master's and PhD) gives students a salary advantage. See figures below.

#### **Recognition and credibility**

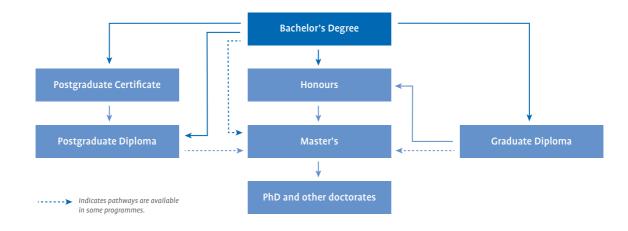
An advanced degree makes a difference on a CV. A postgraduate qualification is evidence of high academic achievement and self-discipline. It's also a mark of your independent research capability and original thinking.



Of full-time workers in the last New Zealand census, people with a PhD earned 22 percent more (NZD) than those with a master's or honours degree, while those with a master's or honours degree earned about nine percent more than bachelor's degree holders: www.universitiesnz.ac.nz

# Choosing a postgraduate degree

Postgraduate study at UC is flexible, challenging and hugely rewarding. You can study full- or part-time and choose from six-month courses through to a four-year PhD. Have a look at the options below and see if there's one that suits you.



#### **Graduate diplomas**

If you've completed a bachelor's degree, a diploma may be for you. Graduate qualifications allow you to change subject focus, either within your first degree area or in a completely different area. This can increase the value of your undergraduate degree in the job market or be a first step to a new career or further study.

#### Postgraduate certificates and diplomas

Postgraduate certificates and diplomas are often undertaken by practitioners looking for professional development. The short period of study allows you to gain additional skills and a recognised qualification without a long-term commitment. Postgraduate certificates often include a specialised professional development opportunity. Postgraduate diplomas are longer and more in-depth than the certificate. As well as offering structured courses, many allow you to undertake an independent project or research.

#### **Honours degrees**

An honours degree allows you to delve deeper and more rigorously into a subject you are passionate about. It involves a personalised study programme in the subject of your first degree and typically takes one year of full-time coursework, which includes a research component. An honours degree is often a pathway to higher study, such as a master's degree.

#### **Master's degrees**

UC offers three types of master's degrees – research master's, coursework master's, or a combination of both. A research master's degree enables you to conduct a significant piece of independent research under expert supervision. A coursework master's provides a structured programme of taught courses at an advanced level.

#### Taught postgraduate study

Taught postgraduate study can be a good way to change direction in work or study, as some qualifications do not require any previous study in the subject.

#### **Doctoral studies**

A doctoral degree is the highest academic degree offered at UC. Those who earn it must demonstrate significant intellectual achievement, high scholarly ability, and great breadth of knowledge. The UC PhD is a research-only degree (no coursework), which can be completed in over 80 disciplines, carried out under academic supervision and using world-class facilities.

> For qualification advice please email sciencepgadvice@canterbury.ac.nz

# **Discover your world**

For many, a highlight of postgraduate study is the chance to go deep in an area of science that fascinates and interests them.

#### Your research comes first

Postgraduate research allows you to explore topics of interest to a much greater depth while also developing your creative scientific research ability. In fact, your own research topic is the most important part of the postgraduate programme at UC. Our students are engaged in a variety of projects across many scientific areas – from the sea to the stars.

#### **Be inspired**

Not sure what to study? Looking for inspiration?

UC Research Profile is a searchable website that showcases UC's research. You can find information about individual researchers, the projects they are working on, the specialist equipment they use, and more. Search our database: researchprofile.canterbury.ac.nz

### Bringing innovative technology into the medical community

Hannah Prebble wanted to be a scientist since high school.

After school she earned a BSc in biochemistry and biology, MSc in biochemistry and PhD in biochemistry. Today, Hannah is living the dream as a scientist at MARS Bioimaging Ltd – an award-winning manufacturer of innovative medical research technology like 3D colour x-ray systems.

Hannah's role as a sales and application support specialist for the company, sees her travelling the world to promote MARS technology to the global medical community and showing other scientists how it works and where it can make a difference. 'One of the best things about my job is that every day is different.'





### Harnessing solar energy efficiently

Dinga Wonanke has a dream that solar energy will one day become the planet's ultimate source of power. His PhD studies into alternative means of using solar energy, over current power sources, are helping turn that dream into a reality.

Through his research into theoretical and computational chemistry, Dinga is using computer modelling to investigate how everyday chemical reactions work.

'My day-to-day activity involves modelling and designing new, cheaper, photovoltaic molecules that can efficiently utilise solar energy, with the aim of eventually propelling solar energy to become the ultimate source of energy for our planet.'



# Can micronutrients improve mental health symptoms?

Postgraduate study has exposed Hayley Bradley to cutting-edge research that could change lives. The psychology PhD student is working with UC's Mental Health and Nutrition Research Group on a world-leading clinical trial to find out if micronutrients (vitamins and minerals) can improve symptoms of depression and anxiety in pregnant women. New Zealand has some of the highest rates of antenatal depression and anxiety in the developed world, and the illnesses are the leading cause of maternal morbidity worldwide.

# Solving real-world problems with science and finance

Studying a Bachelor of Science with Honours gave Nicholas Steyn the opportunity to create a degree tailored to his interests. Through his BSc(Hons) in Computational and Applied Mathematics he was able to study both science and commerce.

'It provided an awesome range of subjects that I couldn't get any other way. They all relate to each other more than I expected.'

Nic graduated with valuable skills in finance, research and business. Since graduating, he's undertaken an internship at Optiver – a global market trading company. More recently, Nic has joined a team of researchers at Te Pūnaha Matatini, based at the University of Auckland and University of Canterbury, working on COVID-19 modelling for various government organisations.





### Giving native species a helping hand

For Amy Whitehead, doing a PhD in Ecology gave her an 'incredible opportunity' to work with threatened species and give them a better chance at survival.

Now a Freshwater Ecologist at NIWA, Amy uses large quantitative sets of data to analyse a variety of ecological and environmental factors to help people make informed decisions for a range of conservation projects.

'I enjoy doing work that has some meaningful real-world outcome. Finding better ways to help people protect threatened species, improve water quality, or build biodiversity-friendly cities is immensely satisfying.'

# Why UC Science?

At UC Science you decide where you're going – our job is to help you get there. We offer heaps of options and flexibility, state-of-the-art facilities, amazing research opportunities (in the lab and the field) and passionate, world-recognised lecturers.

#### **Applied learning**

You'll have more hands-on practical and clinical learning experiences – in lectures, in the labs, at our field stations and on work experience. You'll get to work on real-world problems such as climate change, food security, and developing new, smarter technologies.

#### Interdisciplinary approach

At UC you can explore a wide range of subjects – from astronomy to Antarctic studies, from physics to psychology. Our interdisciplinary approach to science creates more potential pathways and enables you to delve deeper or broaden your studies, depending on your research or career goals.

#### **Compact city and campus**

Christchurch is an accessible city with many businesses and research locations close to the university. Our campus is set on over 87 hectares, with world-class libraries and equipment, and over 15 recognised science research centres, institutes and hubs.

#### **Purpose-built**

Our purpose-built facilities enable you to learn and research at the cutting edge. We've got the most field stations of any New Zealand university and a new \$216 million hi-tech science hub with dedicated postgraduate facilities.

#### Learn from the best

UC is the most research-intensive university in New Zealand. You'll work with and learn from passionate people who are leading the way with their research and regularly receive national and international recognition for their work.

#### Living laboratory

Christchurch and Canterbury are a living laboratory where you can see and study science in action – from the mountains, to the sea and beyond the stars. Whether you're in native bush, a glacial lake, or the International Dark Sky Reserve – this is your Canterbury classroom.

#### **Visiting experts**

Specialists from all over the world come to UC to teach and collaborate, providing unparalleled access to expertise. UC's renowned Erskine Fellowship programme enables 75 international experts to teach and conduct seminars here every year.

#### **Globally connected**

UC is the only New Zealand university to be a member of the AC21 Academic Consortium: 19 of the world's leading research universities. UC maintains partnership agreements with many distinguished universities around the world, giving students the chance to study overseas.

#### Advice and academic support

We offer a range of support services to help you succeed. For advice about degree planning, subject choices, selecting a supervisor and more, go to: www.canterbury.ac.nz/science/current-students/ postgraduate-advice-and-forms or email our postgraduate advisor: sciencepgadvice@canterbury.ac.nz

#### **Scholarships**

Scholarships are an excellent way of funding postgraduate study. UC offers a wide range of scholarships catering for all levels of study up to doctoral level.

Find out about our scholarships and how to apply: www.canterbury.ac.nz/get-started/scholarships he Rutherford Regional Science and Innovation Centre is a hi-tech science hub for students and researchers



'Thanks to my postgraduate studies, I've been able to pursue my interests and have a successful career.'

– Dr Gareth Taylor Postgraduate Diploma and PhD in Environmental Science Senior Environmental consultant and Director at Collaborations

## **Research centres and institutes**

UC Science is home to many world-leading research centres and institutes. They attract high-calibre academics and offer exciting research and work opportunities for postgraduate students.

#### **Biomolecular Interaction Centre**

A multidisciplinary research centre dedicated to the study of molecular interactions critical to a range of fundamental sciences, new treatments for disease, and highly functional products.

#### **The Psychology Centre**

A cutting edge training and research centre offering a range of clinical psychology services, assessments and treatments.

#### **Gateway Antarctica**

A focal point for Antarctic study. It attracts national and international participation and plays a leading role in global Antarctic research projects.

#### **Geospatial Research Institute Toi Hangarau**

A focus for geospatial research in New Zealand. It delivers world-class geospatial science and brings together iwi, business, government and researchers to serve New Zealand's geospatial needs.

#### Waterways Centre for Freshwater Management

A joint partnership between Canterbury and Lincoln Universities. It aims to improve skills, knowledge and awareness in the water sector.

#### **Rose Centre for Stroke Recovery Research**

A state-of-the-art facility to extend stroke research and clinical expertise. It provides clinical services and new rehabilitation techniques through research.

### Field stations and research areas

Our extensive network of field stations and research areas give you the chance to test out your knowledge and extend your research in a wide range of terrains, ecosystems and even into galaxies.

#### **Cass Mountain Research Area**

The Cass Mountain Research Area is located in the central South Island. It enables access to montane grasslands, scrub, riverbeds, scree, beech forests, swamps, lakes, streams and alpine habitats.

#### **Westport Field Station**

Westport Field Station is in the Westport township, nestled between the Southern Alps and the Tasman Sea. It offers access to a rich geological and ecological learning ground.

#### **Christchurch and surrounds**

Our region is packed with rolling hills, mountains and waterways waiting to be explored. Your course may take you to the Pacific Ocean or Southern Alps, an ancient volcanic peninsula or an alluvial plain. Some research locations are within a few minutes of campus.

#### University of Canterbury Ōtehīwai Mount John Observatory

UC's world-renowned observatory near Lake Tekapo houses four principal telescopes and detectors for astronomy studies. It provides outstanding conditions for observations and discoveries of the southern sky.

#### Scott Base, Antarctica

UC's research in Antarctica is undertaken from Scott Base, New Zealand's station on Ross Island, and at a field campsite on the Ross Ice Shelf.

#### **Nigeria Field Station**

UC's most remote field station is found at the edge of Nigeria's amazingly diverse and ecologically important Ngel Nyaki Forest Reserve.

See all of our research centres: www.canterbury.ac.nz/departments/research-centres/ Check out our field stations: www.canterbury.ac.nz/life/facilities/field/ University of Canterbury Ōtehīwai Mount John Observatory, Tekapo





Scott Base, Antarctica. Photo credit: James Pinchi

'I want to help make sure our people, whānau, and communities are prepared and resilient to natural hazards and climate change.'

– Kristie-Lee Thomas (Ngāti Mutunga o Wharekauri) Bachelor of Science in Geology and Geography, with an endorsement in Environmental Science Master of Disaster Risk and Resilience Master of Science in Disaster Risk and Resilience NSC Research Programme Co-lead -Whanake te Kura i Tawhiti Nui Lecturer in Disaster Risk Reduction, University of Canterbury

A geography field trip to Franz Josef Glacier, West Coast

# **Our postgraduate science degrees**

Finding the degree to match your interests and ambitions is easy with UC. We offer a wide range of postgraduate science qualifications to support your research interests, professional development and advancement. Explore some of our degree options here, or for a full list, see our website.

### Meeting industry demand

Be ready for work with these job-focused degrees created to meet industry demand:

#### **Master of Disaster Risk and Resilience**

The master's degree is designed to meet global demand for disaster specialists and develops skills in risk communication, disaster reduction and resilience strategies. Graduates gain knowledge and skills to help communities and organisations become stronger, more resilient and able to recover in the face of adversity.

#### **Master of Applied Data Science**

Data science is an essential skill set in a world where everything from education to commerce, communication to transport, involves large-scale data collection and digitalisation. This degree focuses on the broader skills required of data scientists, such as advanced analytical capability, problem solving, teamwork and critical thinking. It includes an industry data science project.

#### Geospatial science and technology – three degrees

We offer three qualifications designed to meet demand for geospatial experts in New Zealand and overseas – a Professional Master, Postgraduate Diploma and Postgraduate Certificate in Geospatial Science and Technology.

These qualifications are designed to equip current and future geospatial professionals with the advanced skills required for geospatial leadership roles in government, industry and research. They include the chance to use disruptive technology to create real-world solutions for health, remote workforces, urban planning and earthquake recovery. The degrees can be studied full- or part-time and are ideal for practitioners looking for professional development or more advanced study.

#### **Master of Spatial Analysis for Public Health**

This master's degree provides students with the skills, knowledge and competencies to undertake spatial analysis roles within a wide range of health organisations. It provides a solid foundation for career development and moving into senior spatial analysis roles within New Zealand and internationally.

#### **Master of Science in 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.

This degree offers an introduction to environmental science and decision-making, and will enable you to advance your knowledge through independent research. The programme consists of two parts: coursework and a thesis.

#### Master of Water Science and Management\*

This master's degree prepares you for a professional career in water management in the public and private sector. It is jointly taught by UC and Lincoln University and delivered with support from the Waterways Centre for Freshwater Management. The programme includes specialist knowledge, work in interdisciplinary teams and experience in community engagement.

#### **Professional Master in Computer Science**

This programme is designed to provide advanced subject knowledge in computer science and the ability to upskill in different areas of the discipline. The degree is applied, with courses providing up-skilling in the theory and application of advanced computer science and has been designed to meet the demand for graduates with highly developed computer skills.

\* Subject to CUAP 2022

### Enter from any degree

Here are a few degrees you can do that don't require any science background:

#### **Graduate Diploma in Science**

This diploma offers people who hold a bachelor's degree in a major in an unrelated area the opportunity to study science in depth. It is designed to provide a route for graduates seeking to qualify for entry to postgraduate qualifications in science, change career direction, or to extend or upgrade their existing qualifications. This qualification can be studied full- or part-time and is an ideal pathway into postgraduate study.

#### **Master of Urban Resilience and Renewal**

This master's degree prepares you for a career in the emerging and rapidly developing field of urban resilience and renewal. You'll engage with community groups and local government, and learn how to help communities and governments address the challenges facing their cities – now and in the future.

#### **Postgraduate Certificate in Antarctic Studies**

This degree attracts graduate students from a diverse range of disciplines and draws on the expertise of over 30 academic staff and guest speakers. Students examine major scientific and environmental themes as well as contemporary issues facing Antarctica.

#### Postgraduate Diploma in Applied Data Science

Data science is a new profession emerging along with the exponential growth in size and availability of 'big data'. Data scientists look at past and current data to provide insight into future trends. This degree is designed to build data science capabilities in people from a range of backgrounds.

### **Professional development**

Our professional development degrees can help you upskill and get ahead in your career:

#### **Professional Master of Engineering Geology\***

Engineering geology is a multidisciplinary area applying geological sciences to engineering work, identifying and mitigating geological hazards and aspects of land-use planning. This strongly applied degree concentrates on professional training for practitioners, with students completing a practice-focused project.

It is the only degree of its kind in Australasia. Course content includes principles of geo-materials, geomorphology, risk, and communication as applied to real-life case studies. Graduates meet the requirements for Engineering New Zealand accreditation as graduate Engineering Geologists; and can provide knowledge and advice to engineers in the context of engineering projects.

#### Postgraduate Diploma in Clinical Psychology

This professional qualification in clinical psychology has a strong practical component, which facilitates a greater understanding of real people and their experiences. The degree consists of two years' coursework and at least one year of practical work experience. Entry is limited to 10 to 12 people each year.

#### **Master of Financial Engineering**

Financial engineering combines financial and economic theory with mathematical and computational tools to design and develop financial products, portfolios, markets, and regulations. This degree links real-world problems in financial engineering to an underlying theoretical framework. Graduates gain industry-level skills and are capable of high-level performance in the financial industry.

#### Postgraduate study in Cognitive Behaviour Therapy

Cognitive Behaviour Therapy (CBT) is a 'gold standard' evidence-based, psychologically informed speaking therapy. It has proved effectiveness in treating substance misuse, and common mental health issues including depression and anxiety. This programme will appeal to registered health practitioners and practising health practitioners in primary care and government and nongovernment health and social service organisations.

\*Not open to enrolments in 2023

### In-depth research

Dig deeper into an area you're interested in with our research-focused degrees:

#### **Master of Science**

The Master of Science usually consists of two parts: coursework and a thesis. Students can investigate areas of interest to them and conduct independent and original research. Over 30 subjects are available, and some can only be studied at postgraduate level.

#### **Postgraduate Diploma in Science**

This one-year degree offers those with some background in science the opportunity to undertake more advanced and in-depth study in a subject they're interested in. There are over 20 subjects to choose from, including new subjects for 2023, Forensic Psychology and Organisational Psychology\*. Some can only be studied at postgraduate level, which can allow for specialisation and career pathways for graduates.

#### **Master of Antarctic Studies**

This one-year degree gives students a 360-degree view of Antarctic issues. It combines coursework with an Antarctic-related research dissertation. The degree starts with summer courses that are coordinated by Gateway Antarctica – an internationally recognised research centre based at UC.

#### **Doctor of Philosophy**

A PhD is an opportunity to conduct extensive, sustained and original research and study in your chosen subject. The degree is carried out under expert supervision and typically takes three to four years to complete. PhD scholarships are available to students with excellent First Class Honours degrees.

### **Clinical and specialist programmes**

Thanks to our professional expertise, we're able to offer a range of highly specialist qualifications:

#### **Master of Science in Organisational Psychology**

This degree is one of the oldest and most recognised applied psychology degrees in New Zealand. Entry is competitive with just 15 students a year accepted to the programme. Most of our students are recent psychology and business graduates, or HR professionals who want to enhance their education. Graduates can go on to work in occupational psychology as HR professionals, organisational consultants, research analysts, or academics.

#### **Master of Science in Medical Physics**

Medical physics applies the concepts and methods of physics to the diagnosis and therapy of human disease. Medical physicists are in high demand and have excellent job prospects. UC offers New Zealand's only accredited medical physics education programme. Also available as BSc(Hons), PGDipSc, PhD.

#### **Master of Audiology**

This is an internationally recognised qualification focused on training professional audiologists. It develops clinical knowledge and skills across the scope of practice for audiologists and includes a strong foundation in acoustics, psychoacoustics, and neuroscience. It is endorsed by the New Zealand Audiological Society.

#### Master of Speech and Language Pathology

This is a full-time, two-year professional qualification accredited by the New Zealand Speech-Language Therapists' Association. The degree includes clinical experience working with clients of all ages with communication disabilities. Study areas include swallowing, fluency and voice, clinical linguistics and speech and language development and disorders.

**Full course information:** www.canterbury.ac.nz/science/qualifications-and-courses/ **Individual courses fees:** www.canterbury.ac.nz/future-students/fees-and-funding/feesguide/ **How to enrol:** www.canterbury.ac.nz/enrol

#### Full list of degrees >

Qualification	Description	Requires	Start date	Duration
Bachelor of Science with Honours (BSc (Hons))	The BSc (Hons) degree comprises one full- time year of coursework that includes a research component. See the subject options on pages 12–13.	BSc with a high level of attainment in appropriate subjects.	February and July <sup>#</sup>	1 year full-time; 2 years part-time.
Graduate Diploma in Science (GradDipSc)	This diploma offers existing degree-holders the chance to study science in-depth. Ideal for graduates seeking to extend their existing degree or qualify for other postgraduate science degrees.	Any bachelor's degree. Acceptance will depend on the standard and relevance of previous studies.	February and July <sup>#</sup>	1 year full-time; 2+ years part-time.
Postgraduate Certificate in Antarctic Studies (PGCertAntaStud)	Examines major scientific and environmental themes as well as contemporary issues facing Antarctica.	Any bachelor's degree.	February	14 weeks full-time.
Postgraduate Certificate in Geospatial Science and Technology (PGCertGST)	Equips geospatial professionals with the advanced skills required for geospatial leadership roles.	Undergraduate degree (minimum B- average), or recognised professional discipline- specific experience.	February	8 months full-time; 2–4 years part-time.
Postgraduate Certificate in Science (PGCertSc)	This certificate provides a more accessible professional development qualification for those with work commitments, and can lead into further postgraduate study.	Bachelor of Science or equivalent degree with relevant background study.	February or July	6 months full-time; 2 years part-time.
Postgraduate Diploma in Applied Data Science (PGDipADS)	Ideal for students wanting to enhance or build their data science capabilities, and combine these with skills and knowledge they bring from previous studies.	B average in relevant 300-level undergraduate courses.	February	1 year full-time; 2 years part-time.
Postgraduate Diploma in Clinical Psychology (PGDipClinPsyc)	Professional qualification in Clinical Psychology. Selection for the course is competitive: a maximum of 12 people are selected each year.	MA, MSc or PhD in Psychology or BA(Hons) or BSc(Hons) in Psychology and enrolled in a PhD.	February	2 years of coursework and at least 1 year of practical work experience.
Postgraduate Diploma in Cognitive Behaviour Therapy (PGDipCBT)	Cognitive Behaviour Therapy (CBT) is an evidence-based, psychologically informed talking therapy. It has proven effectiveness in treating substance misuse, and common mental health issues including depression and anxiety.	A bachelor's degree in Psychology with a B- grade point average	February	2–4 years part-time
Postgraduate Diploma in Geospatial Science and Technology (PGDipGST)	Equips geospatial professionals with the advanced skills required for geospatial leadership roles. Aimed at practitioners looking for professional development and/or considering more advanced study.	Undergraduate degree (minimum B average), or recognised professional discipline- specific experience.	February	8 months full-time; 2–4 years part-time.
Postgraduate Diploma in Science (PGDipSc)	This degree offers the opportunity to undertake more advanced and in-depth study in a science subject with over 20 subjects to choose from.	BSc or other bachelor's degree and approved undergraduate science courses.	February and July <sup>#</sup>	1 year.
Master of Antarctic Studies (MAntaStud)	Combines coursework with an Antarctic- related research dissertation. Students gain a 360-degree view of Antarctic issues.	PGCertAntaStud or evidence of ability to complete advanced level academic study (normally a B average in 400-level, or equivalent, courses).	November	1 year full-time; 2 years part-time.

Qualification	Description	Requires	Start date	Duration
Master of Applied Data Science (MADS)	Designed for students who wish to build their data science capabilities and combine these with skills and knowledge acquired from previous studies.	A university undergraduate degree, B average in relevant undergraduate 300-level courses.	February and July	1 year full-time; 2 years part-time.
Master of Audiology (MAud)	Includes coursework, and clinical and research experiences. Coursework focuses on training professional clinical audiologists.	BSLP(Hons), BA, BSc; other bachelor's degrees also considered.	February	2 years full-time; up to 4 years part-time.
Master of Disaster Risk and Resilience (MDRR)	Prepares students for a career in disaster risk management. Covers disaster causes, risk communication and risk reduction strategies, and resilience-building methodologies.	A relevant university degree, normally with a B average or higher in the final year.	February	1 year full-time; 2 years part-time.
Master of Financial Engineering (MFEng)	Prepares students for a career as a quantitative analyst in the global finance industry. Focuses on developing and designing financial products, markets and investment strategies, and developing regulatory frameworks.	Any bachelor's degree normally with a B+ average (including some Statistics, Mathematics and Finance courses or completion of a qualifying course).	February	1 year full-time; 2 years part-time.
Master of Science (MSc)	The MSc usually consists of coursework and a thesis, allowing students to conduct independent and original research. Over 30 subjects to choose from, and some can only be studied at postgraduate level.	BSc, BSc(Hons), PGDipSc, PGDipEngGeol, or any bachelor's degree and a qualifying programme. Child and Family Psychology has other criteria.	February and July <sup>#</sup> or anytime start <sup>**</sup>	2 years full-time; up to 4 years part-time; Part II (thesis only): 1–2 years full-time; 2–4 years part-time.
Master of Spatial Analysis for Public Health (MSAPH)	The MSAPH provides students with skills and knowledge to undertake spatial analysis roles within a wide range of health organisations.	Some basic prior experience/ training in statistics, programming (eg R or Python) and GIS.	February	12 months full-time; 2-4 years part-time.
Master of Speech and Language Pathology (MSLP)	A hands-on degree programme including clinical practice experience.	Any bachelor's or master's degree.	February	2 years full-time; up to 4 years part-time.
Master of Urban Resilience and Renewal (MURR)	The MURR focuses on how communities respond to challenges facing today's cities. Ideal for students with a science or social science background wishing to address broader urban issues and engage with communities.	Relevant bachelor's degree eg Geography, Environmental Science, Sociology (normally a B grade average required at 300-level).	February	1 year full-time; 2 years part-time.
Master of Water Science and Management (MWSM)*	Students will gain specialist knowledge, the ability to work in interdisciplinary teams and experience in community engagement. Graduates will be prepared to work as water scientists and decision makers in the public and private sectors.	A relevant bachelor's degree.	February	1 year full-time or 2 years part-time.
Professional Master in Computer Science (PMCS)	The PMCS is an application-focused programme providing advanced computer science theory and practice.	A BSc degree in Computer Science or equivalent in relevant computing discipline	February	1 year full-time Up to 3 years part- time
Professional Master of Engineering Geology (PMEG)^	Engineering geology is a multidisciplinary area applying geological sciences to engineering work. This is a strongly applied degree focusing on professional training for practitioners.	BSc in Geology or Earth Sciences or BE(Hons) in Civil Engineering.	February	1 year.
Professional Master of Geospatial Science and Technology (PMGST)	Equips geospatial professionals with the advanced skills required for geospatial leadership roles. Includes an independent project and/or industry placement.	Undergraduate degree (minimum B average), or at least 3 years of professional experience in GIS.	February	12 months full-time; 2–4 years part-time.
Doctor of Philosophy (PhD)	The PhD comprises advanced research carried out under supervision and presented in a thesis.	Bachelor's degree or master's degree with first- or second-class division 1 honours or equivalent.	Anytime start**	2–4 years full-time; 3–7 years part-time.

\* Subject to CUAP 2022

^Not open to enrolments in 2023

\*\* Doctoral studies and master's study by thesis-only can be started at the beginning of any month.

" Some subjects allow a July start, please contact the Department for clarification.

# A community of minds

At UC we don't just teach science – we do science. In fact, UC has the highest proportion of academics conducting both teaching and research of any New Zealand university.

#### Leading scientists who teach

Our programmes are research led. As a postgraduate student you'll be taught and supervised by academics at the forefront of advances in their field of study, who are making significant contributions to knowledge. As teachers, they make learning interesting; many receive international and national awards for the quality of their teaching. They will challenge, inspire and nurture you as you pursue your own research journey.

#### Sharing knowledge and ideas

At UC, we won't just support you in your research pursuits – we'll also invite you to join us in ours. You could work on any number of world-leading research projects, from developing new drugs to treat disease to designing nextgeneration nanochips and discovering new plant species or planets. We look forward to working with you!

### Interactive lessons inspire students

Dr Heather Purdie is an expert in glaciology – specifically glacier mass balance, dynamics, and climate change. In 2018, she was one of eight UC academics awarded Royal Society Te Apārangi Marsden Funding to lead pioneering research into societal effects of natural disasters.

As well as being an excellent scientist, students consistently rate Heather as a fantastic teacher who delivers fun, interactive lessons that connect them with the natural world. As one student wrote: 'You can really tell she's passionate about geography – it rubs off on you and really pushes you to want to know more about the subject.'





### A new paradigm for disease treatment

UC researchers are working on a revolutionary drug-targeting system that could one day be used to treat a range of fatal, inherited diseases caused by genetic enzyme deficiencies. They're focusing on around 60 or 70 incurable diseases called the lysosomal storage disorders, of which there are around 200 sufferers in New Zealand. The system could deliver recombinant enzymes and other drugs to a specific organelle (a structure in a cell that performs a specialised function) within human cells, where they are needed.



# Award-winning teacher has the 'x-factor'

Geology lecturer Ben Kennedy wants to start a revolution – against traditional, passive teaching lectures. The associate professor is already leading by example through his own teaching, which includes integrating real-world volcanology research into his lectures and lab sessions. In 2019 he won the UC Teaching Medal – UC's highest award for tertiary teaching excellence. His efforts also earned him the Sustained Excellence award at the 2017 New Zealand Tertiary Teaching Excellence awards. The award recognises teachers who demonstrate the 'x-factor', create inspirational learning experiences and ignite inquiry and engagement in their students.

### **Planet hunters**

A team of UC astronomers have eyes on the universe – 24/7 (weather permitting!). With the help of international researchers and three identical telescopes in Chile, Australia and South Africa, the team is helping answer some of the great unknowns about the planets in our galaxy. For example, how many planets are there around different stars? Do all stars have planets? What type of planets are they? Where are they found in relation to their parent stars? The research project uses microlensing to detect planets orbiting stars near the centre of the galaxy, thousands of light years away.





### Understanding prejudice and intergroup conflict

Dr Kumar Yogeeswaran is a social psychologist specialising in the areas of diversity, social identity, stereotyping and prejudice. He is fascinated by intergroup relations and how people's membership in social groups influences their thoughts, feelings, and behaviours toward others; as well as their self-conceptions. Dr Yogeeswaran's research is consistently published in leading international journals and directly applies to understanding many contemporary social and political issues.



# Make your next move

Get in touch today and find out how we can help you realise your potential and take your career to the next level. Learn more about our degree options, study opportunities, how to enrol, and more.

Phone: +64 3 369 4141 Email: sciencepgadvice@canterbury.ac.nz Web: www.canterbury.ac.nz/science

#### Are you an international student? We have a dedicated team to help you.

Find out more on our website: www.canterbury.ac.nz/science/international/ or contact us at: www.canterbury.ac.nz/science/contact-us/international-enquiries 'Regardless of your circumstances persistence, hard work and confidence can get you where you want to go.'

> – Mahali Matehe Ngāi Tahu, Ngāti Porou Master of Science in Medical Physics



The Southern Lights (Aurora Australis) captured from the University of Canterbury Ōtehīwai Mount John Observatory in Tekapo

# Pūtaiao. Te pū o te ao.

