

Undergraduate Courses 2021

Geography, Environment and Earth Sciences

Te Kura Tātai Aro Whenua



Image: An urban landscape, Tokyo, Japan: 2015 Richard Jones

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THE BACHELOR OF SCIENCE

Bachelor of Science Degree Requirements

- A total of 360 points
- At least 210 points must be from 200 and 300-level courses, including:
 - At least 150 points must be from courses listed for the BSc
 - At least 75 points must be from 300-level courses listed for the BSc
- 90 points can be from outside Science (some majors also permit an additional 30 outside points)
- At least one Major, and a second Major may be from Science or from any other first degree with a maximum of 150 points permitted from outside Science.

Science Major Requirements

- 45–60 points at 100-level
- 60–80 points at 200-level
- 60 points at 300-level

Science Minor Requirements

- 60 points above 100-level specified in the major, of which
- 15 points must be at 300-level.

THE BACHELOR OF ARTS

Bachelor of Arts Degree Requirements

360 approved points including:

- maximum of 180 points at 100-level
- minimum of 180 points at 200/300 level, including at least 75 points at 300 level
- at least 180 points must be in subjects from Part A of the BA Schedule

PLEASE NOTE

Cancellation of courses

The courses offered by the University and listed in this prospectus may be cancelled by the University as a result of insufficient resources or student demand, or if other unforeseen circumstances arise.

Timetable changes

Check the timetable for confirmation of course times.

HOW TO USE THIS GUIDE

| Course code | Course reference number | Title | Points | Trimester |
|-----------------|-------------------------|--------------------------------|---------------|------------|
| ↓ | ↓ | ↓ | ↓ | ↓ |
| ESCI 112 | CRN 15147 | FUNDAMENTALS OF GEOLOGY | 15 PTS | 2/3 |

FIELD TRIPS

| | | |
|----------|---|--------|
| ESCI 241 | Introductory Field Geology | 10 pts |
| ESCI 341 | Sedimentary Field Geology | 10 pts |
| ESCI 342 | Structural Field Geology | 10 pts |
| ESCI 343 | Volcanic Field Geology | 10 pts |
| ESCI 344 | Field Geophysics | 10 pts |
| ESCI 349 | Earth Sciences - International Field Course | 20 pts |
| GEOG 222 | Ecology and Environment | 20 pts |
| GEOG 325 | Field Methods | 10 pts |

Please note:

- Field trips may constitute one entire course or be only a part of it and visit a variety of locations and sites. Extra costs are normally included in the course materials fee. However, students may have to contribute towards the costs for some trips.
- Many field trips have a limited number of places –please apply by **1 December 2020**. Applications for limited entry courses will be waitlisted, and if the course is oversubscribed, decisions on final acceptance will be made based on grades.
- Students must be physically able and must have a good level of physical fitness. Staff will need to be informed in advance about any known health issues that might be of concern in a field setting.
- Students are required to fill in, and submit, a confidential form providing emergency contact and health information, prior to their full acceptance into the course.
- Students are also expected to have purchased their own appropriate equipment ordered through the University’s online payment portal system: <https://pay.wgtn.ac.nz/SGEESTransactions/>. These can be collected from the SGEES school office. This equipment may include geological compasses, hand lenses, write-in-the-rain type field notebooks, and geological hammers.
- Students at this level are also expected to have appropriate personal gear including field boots, waterproof and warm clothing, sleeping bag, and protective glasses (for safety when rock hammering). Please note that if you do not have suitable field boots you may be declined from attending the field trip and may result in you failing the course.

YOUR PROGRAMME

Use this template to plan your programme. Start by adding in the core papers for your degree.

Year 1: 120 points

Year 2: 120 points

Year 3: 120 points

DEVELOPMENT STUDIES

Where in the world do Asia, gender studies, Latin America, natural hazards and resources, the Pacific Islands and globalisation meet? The answer is Development Studies.

Our Development Studies programme is the first major of its kind in New Zealand. It's an umbrella under which you can study almost any aspect of the development of human societies and their relationship to the Earth we live on. This multidisciplinary field is concerned with studying inequality between people and nations, and the ethical issues that poverty and inequality create. Because Development Studies investigates the world and the people who live here, it encourages you to be confident and tolerant with cross-cultural issues and to analyse and solve global problems.

You are encouraged to take this major combined with another in a related discipline such as Cultural Anthropology, Economics, Geology, History, Political Science, International Relations, Biology, Education, Environmental Studies, Asian Studies, Pacific Studies or Māori Studies.

REQUIREMENTS FOR MAJOR

- GEOG 112, 212, 312, 316
- Five further approved courses with significant relevance to development studies and/or development studies content, comprising:
 - one regional-based course and one subject-based course at 100-level*
 - one regional-based course and one subject-based course at 200-level*
 - one course at 300-level.

* Visit <https://www.wgtn.ac.nz/explore/degrees/science/requirements?major=development-studies> for a list of courses.

ENVIRONMENTAL SCIENCE

Environmental Science is a major offered across the sciences, drawing on the extensive expertise of staff both in the Faculty of Science at Victoria University and from the science community of Wellington. Graduates of the Environmental Science major will have obtained one of the highest quality BSc degrees available as they will have the opportunity to combine a physical, biological, and mathematical or earth sciences major with the Environmental Science major.

REQUIREMENTS FOR MAJOR

Programme requirements:

- must be linked to a partner Science major from Biological (BIOL, BMAR, EBIO), Earth (ESCI, GEOG, GEOL, GPHS, PHYG), Mathematical (MATH, STAT) or Physical Sciences (CHEM, APHS, PHYS)
- undertake a 300-level supervised independent research project (ENSC 302 or 303)
- undertake a 300-level taught course (ENSC 301) on a variety of environmental science topics that will allow students to link their partner major to an environment science context.

Specific major requirements are:

- STAT 193; 15 points from MATH courses, and 30 further points from 100-level BIOL, CHEM, ESCI, GEOG, MATH, PHYS and STAT
- GEOG 214; at least 40 points in 200-level BIOL, CHEM, ESCI, GEOG, MATH, PHYS and STAT in addition to that required by the partner major
- ENSC 301; ENSC 302 or 303; and further approved 300-level points to achieve at least 60 points.

***Note:** with approval, up to 30 points may be shared at 200-level with the partner major.

ENVIRONMENTAL STUDIES

If your interests in the natural world are diverse, and your passions for them are strong, a major in Environmental Studies is for you. You can study a range of topics from Antarctica to urban land use.

Our major in Environmental Studies is a broad umbrella under which you can study almost anything to do with the environment, from a scientific, social, cultural or economic perspective. You study courses from a range of disciplines to create a degree that is unique.

REQUIREMENTS FOR MAJOR

- GEOG 112, 114; STAT 193 or QUAN 102; one of (ESCI 111, MAOR 123, PUBL 113, POLS 111)
- GEOG 214, MAOR 216; 20 further 200-level GEOG points
- GEOG 314; at least 40 300-level points from (GEOG, SCIS, MAOR 301, PUBL 307)

Visit <http://www.victoria.ac.nz/explore/degrees/science/requirements> for a list of courses.

GEOGRAPHY

Geography involves questions about where we live, who we are, what we do and how people and places interact. It explores why parts of the world differ and how people's relationships with places and environments create different spatial patterns, resource uses and power struggles. It brings critical insights into key issues facing the world today such as urbanisation, climate change, migration, globalisation, gender inequality, indigenous rights and multiculturalism.

Your study can follow one of five themes: Environmental Geography, Development Geography, Human Geography, Physical Geography or Geographic Information Science. A major in Geography provides you with opportunities to integrate all themes. It also includes skills and techniques, particularly in the visualisation of geographic information, research design and field methods. All these skills are in high demand from employers. You can take Geography as a major in a BA or a BSc.

REQUIREMENTS FOR MAJOR

- ESCI 111, GEOG 112, 114; STAT 193 or equivalent
- GEOG 215, 217; one of (212, 214, 216, 222)
- GEOG 324, 325; 40 further 300-level GEOG points of which at least 20 points must be from (GEOG 312–316, 322)

GEOLOGY

Earthquakes, mountain building, volcanic eruptions, dinosaurs, climate change, resources and the origin and evolution of life: all in a day's work for the geologist. Wellington is a natural laboratory for geologists. You can study the effects of shifting tectonic plates in a city that is built above a major plate boundary.

Antarctica, the conservation and use of natural resources, the evaluation of natural hazards and the social and environmental effects of global change can also be studied as part of this BSc major. Both science and non-science students will find value in the 100-level ESCI courses.

Geology at Victoria University of Wellington is about understanding our world and the forces that shape it. Graduates gather the techniques and the problem-solving abilities, the confidence and the leadership skills to embark upon careers in a diverse range of industries.

REQUIREMENTS FOR MAJOR

- ESCI 111, 112; at least 15 MATH/PHYS/QUAN/STAT points; 15 further 100-level points from (MATH 141–177, PHYS 114 and 115, CHEM (not CHEM 191), STAT 193)
- ESCI 202, 203, 204, 241
- ESCI 301, 302, 341, 342; ESCI 303 or 305

GEOPHYSICS

Geophysics offers the chance to combine a love of the outdoors with expertise in mathematics and physics to explore the atmosphere around us and the ground beneath our feet. Geophysicists work at understanding some of the biggest and most exciting physical phenomena we know—things like earthquakes, volcanoes, mountain building, the Earth's magnetism, gravity and the deep structure of New Zealand.

You can specialise in two areas: up in the sky with Meteorology, the science of weather; or down inside the Earth studying Solid Earth Geophysics. Geophysics is a BSc major where you'll use mathematical techniques to understand natural forces and to probe the Earth's interior and atmosphere.

REQUIREMENTS FOR MAJOR

Geophysics (Meteorology):

- ESCI 111 or 112; (MATH 142, 151 or ENGR 121, 122); (PHYS 114, 115 or ENGR 141, 142); one of (COMP 102, 112, 132)
- 30 points from 200-level MATH; 30 points from 200-level PHYS
- MATH 322, 323; 30 further 300-level points from (DATA, MATH, PHYS)

Geophysics (Solid Earth):

- ESCI 112; (MATH 142, 151 or ENGR 121, 122); (PHYS 114, 115 or PHYS 114, 131, or ENGR 141, 142); one of (COMP 102, 112, 132)
- ESCI 203, 15 points from 200-level PHYS; at least 25 further points from ESCI 241, 200-level MATH or PHYS, ENGR 222 or DATA 202
- ESCI 305, 344, MATH 323; 15 further 300-level points from ESCI, MATH or PHYS

PHYSICAL GEOGRAPHY

Physical geography is the study of the Earth's surface features and processes. It aims to explain the geographic pattern of landforms, soils, vegetation, hydrology, coasts and climate by understanding processes that work at the surface of the Earth.

Victoria offers New Zealand's only undergraduate major and postgraduate degrees in Physical Geography. The major focuses on understanding the evolution and processes driving alpine, glacier, hill-slope, river and climate systems. An extensive field and laboratory programme occurs in combination with lectures. The major also includes skills and techniques, particularly in the visualisation of geographic information, research design and field methods. All these skills are in high demand from employers.

REQUIREMENTS FOR MAJOR

- ESCI 111, GEOG 114, one of (ESCI 112, GEOG 112), 15 MATH, PHYS, QUAN or STAT points
- GEOG 222; two of (GEOG 215, 220, 224)
- GEOG 324, 325; two of (GEOG 318, 319, 321)

100-LEVEL COURSES

| Course Code | Course Registration Number | Course Name | Points | Trimester Available |
|-------------|----------------------------|--|--------|---------------------|
| ESCI 111 | CRN 9469 | THE EARTH SYSTEM: UNDERSTANDING OUR DYNAMIC EARTH AND ENVIRONMENT | 15 PTS | 1/3 |

Restrictions: GEOG 111
 Course Coordinator: Dr Cliff Atkins

ESCI 111 gives a broad introduction to understanding the Earth System and how humans interact with it. Covering deep time, evolution of life, composition and structure of the planet, natural hazards, atmosphere and ocean circulation, water resources, landscape evolution, ice and climate change, ESCI 111 provides a fundamental knowledge base to better understand and manage our environment and plan for the future. This course includes lectures and laboratories, as well as a field trip to observe and understand the processes which shape Wellingtons landscape. ESCI 111 is a platform for further study in Earth Sciences at Victoria University of Wellington.

This course provides the foundation for higher level courses in Physical Geography and Earth Sciences and is a core paper for many of the majors in the School (Geography, Physical Geography, Geology, Geophysics and Environmental Studies).

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|----------|-----------|--|--------|-----|
| ESCI 112 | CRN 15147 | EARTH SCIENCE FOR A CHANGING PLANET | 15 PTS | 2/3 |
|----------|-----------|--|--------|-----|

Course Coordinator: Prof James Crampton

ESCI 112 introduces students to Earth science. The course gives students key understanding for the study of global change, both anthropogenic and natural, of the history of life and the biosphere, of biogeochemical cycles that maintain the planet's life-support systems, of natural resources including water and the precious metals that are used in mobile phones and wind turbines, and of natural hazards such as earthquakes, volcanic eruptions, and coastal erosion. The course ranges from the global scale of plate tectonics (continental drift) to the minute scale of rocks and minerals viewed under a microscope. Practical work is a key part of the course and, in particular, students go into the field and learn how to read the landscape, interpret Earth history, and make a geological map.

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|----------|----------|---|--------|-----|
| ESCI 132 | CRN 9062 | ANTARCTICA: UNFREEZING THE CONTINENT | 15 PTS | 2/3 |
|----------|----------|---|--------|-----|

Course Coordinator: A/Prof Michael Hannah & Dr Cliff Atkins

A broad introduction to the Antarctic continent. Topics covered include; history of exploration of the continent; Antarctica's role as a recorder of past climate change and its importance in any future change in climate; the geological history of Antarctica and the development of the ice sheets; life on the continent and surrounding oceans; and key environmental issues facing Antarctica today.

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|----------|----------|--|--------|-----|
| GEOG 112 | CRN 1651 | INTRODUCTION TO HUMAN GEOGRAPHY AND DEVELOPMENT | 15 PTS | 2/3 |
|----------|----------|--|--------|-----|

Course Coordinator: Dr Polly Stupples

An introduction to the main themes, concepts, and debates in human geography and development, using case studies from the main world regions, particularly Oceania, Latin America, the Asia-Pacific region and New Zealand's place within it. Students are introduced to the history and philosophy of Geography and Development Studies, and to its main themes of Political Geography, Social and Cultural Geography, Urban Geography, and Development Geography. GEOG 112 is a compulsory course for all majors in Geography, Development Studies, Physical Geography and Environmental Studies.

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|-----------------|-----------------|---|---------------|------------|
| GEOG 114 | CRN 7021 | ENVIRONMENT AND RESOURCES: THE FOUNDATIONS | 15 PTS | 1/3 |
|-----------------|-----------------|---|---------------|------------|

Restriction:

ENVI 114

Course Coordinator:

Dr Wokje Abrahamse

This course integrates the physical, social, economic, and political factors associated with environmental change. First, the course introduces the earth systems associated with environmental change (both natural and human induced). Second, the course explores the social, political and economic implications of contemporary environmental issues and human-environment relations.

200-LEVEL COURSES

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|-----------------|------------------|--|---------------|------------|
| ESCI 201 | CRN 11341 | CLIMATE CHANGE AND NEW ZEALAND'S FUTURE | 20 PTS | 3/3 |
|-----------------|------------------|--|---------------|------------|

Prerequisites: 30 points
 Course Coordinator: TBC

This course provides a summary of current knowledge on climate change, its evidence and uncertainties, and climate prediction for the next 50 to 500 years. It discusses the influence of climate change on New Zealand's society, economy and environment, and governmental strategies for adaptation and mitigation.

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|-----------------|------------------|-------------------------------------|---------------|------------|
| ESCI 202 | CRN 15137 | SEDIMENTOLOGY AND PALAEOLOGY | 20 PTS | 1/3 |
|-----------------|------------------|-------------------------------------|---------------|------------|

Prerequisites: ESCI 111, 112; 15 MATH, PHYS, QUAN or STAT points or an approved equivalent
 Course Coordinator: A/Prof Michael Hannah

An introduction to features of sedimentary strata and fossils that form the basis for interpreting the geological history of a region from field observations and drill cores. The laboratory sessions introduce techniques used to analyse and interpret sediments, strata and fossils such as flow channel studies, grain size analysis, fossil description, and biostratigraphy. Two field trips give students experience in describing sedimentary strata and collecting fossils for laboratory analysis.

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|-----------------|------------------|---|---------------|------------|
| ESCI 203 | CRN 15141 | EARTH STRUCTURES AND DEFORMATION | 20 PTS | 1/3 |
|-----------------|------------------|---|---------------|------------|

Prerequisites: ESCI 111, 112; 15 MATH, PHYS, QUAN or STAT pts or an approved equivalent or ESCI 112 or 111, MATH 142
 Course Coordinator: Prof John Townend

An introduction to the fields of structural geology, tectonics and solid earth geophysics with the goal of describing the structure of the Earth and the mechanisms by which it deforms. The laboratory component emphasises modern field-based methods of collecting, processing, and analysing geological and geophysical data.

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|-----------------|------------------|---------------------------------|---------------|------------|
| ESCI 204 | CRN 15138 | PETROLOGY AND MICROSCOPY | 20 PTS | 2/3 |
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Prerequisites: ESCI 111, 112; 15 MATH, PHYS, QUAN or STAT points or an approved equivalent
 Course Coordinator: Dr Julie Vry

This course examines all common major rock types and introduces crystallography as it pertains to optical mineralogy, with examples of a variety of common minerals and rocks in hand sample and under the microscope. The course covers the origins of common minerals and rocks and the conditions and processes that form them.

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|-----------------|------------------|-----------------------------------|---------------|------------|
| ESCI 241 | CRN 17287 | INTRODUCTORY FIELD GEOLOGY | 10 PTS | 1/3 |
|-----------------|------------------|-----------------------------------|---------------|------------|

Prerequisites: ESCI 111, 112; 15 MATH, PHYS, QUAN or STAT points or an approved equivalent
 Field trip: You need to select one of three one-week field trips (depending on demand). Refer to online Course Finder for dates.
 Course Coordinator: Dr Julie Vry

This course is an introduction to field techniques in geology. The field trip is based at the Geology Department's field station at Onekaka, near Takaka, northwest Nelson. Students record data from outcrop sequences, prepare geological maps, cross-sections and stratigraphic columns of the area studied, and interpret the geological history of the region.

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|---------------------|-----------------|------------------------------|---------------|------------|
| GEOG 212 | CRN 6002 | WORLDS OF DEVELOPMENT | 20 PTS | 1/3 |
| Prerequisite: | | GEOG 112 or approved course | | |
| Course Coordinator: | | Prof Warwick Murray | | |

An introduction to ideas, strategies and impacts of development from a global and geographical perspective. The course focuses on the concept of development and analyses the spatial pattern of global inequality. Processes of change in East Asia, Latin America, the Pacific Islands and Africa are compared and analysed.

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|---------------------|-----------------|--|---------------|------------|
| GEOG 214 | CRN 6004 | ENVIRONMENT AND RESOURCES: NEW ZEALAND PERSPECTIVES | 20 PTS | 2/3 |
| Prerequisites: | | GEOG 114, ESCI 111 or 30 approved points | | |
| Restriction: | | ENVI 214 | | |
| Course Coordinator: | | Dr Billy van Uitregt | | |

The aim of the course is to examine the major environmental issues and challenges New Zealand faces today. The course will highlight the policy and management frameworks that are in place to address these environmental issues. Students will also critically appraise how well current employed policy and management mechanisms achieve the goal of environmental sustainability. Tutorial sessions provide hands-on experience in examining current environmental issues in New Zealand.

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|-----------------|-----------------|---|---------------|------------|
| GEOG 215 | CRN 6005 | INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS (GIS) AND SCIENCE | 20 PTS | 2/3 |
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Prerequisite: 60 100-level points
Restriction: GEOG 415
Course Coordinator: Dr Mairead de Roiste

GIS is a powerful tool and approach which can be used to investigate geographic phenomena and apply geographic knowledge to solve problems. Correct application of GIS depends on a sound knowledge of theory and principles. This course lays the theoretical foundations and concentrates on the basic principles of GIS. We review current applications of GIS with invited speakers from government, business and academia. The course also has a strong practical component with a series of labs that progress from guided tutorials to more open-ended problem-solving exercises which test and develop students' understanding of the concepts and creative problem-solving ability. While this course does not require advanced computer skills, all the coursework is computer based.

Students with a wide range of interests will gain from this course. GIS is a useful tool in many areas such as archaeology, business, conservation, development, ecology, landscape design and planning. Computer scientists, information managers and statisticians will also find that GIS provides an opportunity to specialise in a growing field.

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|-----------------|-----------------|--|---------------|------------|
| GEOG 216 | CRN 6006 | URBAN GEOGRAPHY | 20 PTS | 2/3 |
| Prerequisites: | | GEOG 112, 15 approved 100-level points | | |

Not offered in 2021.

Urban geography addresses the function of cities and their consequences for markets and society. Examples are drawn primarily from the OECD countries although demographic and urban trends in developing countries are also covered. Examples are also drawn from urbanisation in both more and less developed countries, with a focus on the very largest urban areas.

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|-----------------|------------------|---|---------------|------------|
| GEOG 217 | CRN 26056 | HUMAN GEOGRAPHY: APPROACHING OUR WORLD | 20 PTS | 2/3 |
|-----------------|------------------|---|---------------|------------|

Prerequisites: GEOG 112; GEOG 114 or 15 approved 100-level points
 Course Coordinator: Dr Mirjam Schindler

This course explores the evolution of human geography and its relevance to local and global issues over time. We will be exploring and comparing different human geography approaches to our world and applying them to various spheres of human geography. Students will be introduced to key ideas, concepts and thinkers of human geography over time.

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|-----------------|------------------|------------------------------|---------------|------------|
| GEOG 220 | CRN 17169 | HYDROLOGY AND CLIMATE | 20 PTS | 2/3 |
|-----------------|------------------|------------------------------|---------------|------------|

Prerequisites: ESCI 111, GEOG 114, 15 100-level MATH or STAT points
 Course Coordinator: A/Prof Bethanna Jackson

This course provides the skills and training necessary to explore and understand the core hydrological and climatic processes that cause change within the environment, particularly the role of water. It will help you to understand why climate varies spatially, and why vegetation has such an important influence on the availability and timing of moisture and stream flow. It will also examine how hydrological and climatic systems respond to human interaction and environmental change. The emphasis will be on providing the skills necessary to interpret the processes controlling the spatial and temporal variability in climate and water availability.

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|-----------------|------------------|--------------------------------|---------------|------------|
| GEOG 222 | CRN 26059 | ECOLOGY AND ENVIRONMENT | 20 PTS | 1/3 |
|-----------------|------------------|--------------------------------|---------------|------------|

Prerequisites: STAT 193, 30 points from (BIOL 111, 113, 114, 132, GEOG 114, ESCI 111, ESCI 112)
 Restriction: BIOL/ENVI 222
 Course Coordinator: Dr Andrew Rees

An introduction to ecology and environmental science. The course focuses on physical and biological processes in terrestrial environments. The field trip will introduce techniques relevant to field-based enquiry in geography, ecological and environmental science. Also taught as BIOL 222.

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|-----------------|------------------|----------------------|---------------|------------|
| GEOG 224 | CRN 26054 | GEOMORPHOLOGY | 20 PTS | 1/3 |
|-----------------|------------------|----------------------|---------------|------------|

Prerequisites: ESCI 111, 15 pts from (MATH 132-177, PHYS 131, STAT 193, STAT 292)
 Course Coordinator: A/Prof Kevin Norton & Dr Shaun Eaves

This course introduces the student to the field of geomorphology. Modern geomorphology is concerned with the ways in which processes interact with each other and the landforms that they create and destroy. We will approach geomorphic systems from their roles in shaping planetary surfaces. This will include general introductions to the roles of wind, water, ice and gravity. Examples and exercises will be drawn from both terrestrial and extra-terrestrial planetary surfaces.

300-LEVEL COURSES

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|-----------------|------------------|--|---------------|------------|
| ENSC 301 | CRN 18345 | TOPICS IN ENVIRONMENTAL SCIENCE | 20 PTS | 1/3 |
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Prerequisite: 90 points of 200-level study in approved subjects from the Science schedule
 Corequisites: ENSC 302 or 303; admission to the major in Environmental Science
 Course Coordinator: Dr Lynda Petherick

Topics in environmental science that may include: energy supply and effects, Antarctica and environmental change, environmental toxicology, greenhouse effect environmental risk assessment, mathematical modelling of environmental problems, human health and ecology, atmosphere and ocean dynamics and natural resource management. This course will allow students to integrate their science discipline into an environmental framework and discuss, analyse and apply these ideas.

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|-----------------|------------------|----------------------------------|---------------|------------|
| ENSC 302 | CRN 18346 | DIRECTED INDIVIDUAL STUDY | 20 PTS | 2/3 |
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Prerequisite: Permission of Head of School
 Assessment: 100% internal
 Course Coordinator: TBC

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|-----------------|------------------|----------------------------------|---------------|------------|
| ENSC 303 | CRN 18347 | DIRECTED INDIVIDUAL STUDY | 15 PTS | 2/3 |
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Prerequisite: Permission of Head of School
 Assessment: 100% internal

Not offered in 2021.

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|-----------------|------------------|---|---------------|------------|
| ESCI 301 | CRN 15139 | GLOBAL CHANGE: EARTH PROCESSES AND HISTORY | 20 PTS | 1/3 |
|-----------------|------------------|---|---------------|------------|

Prerequisites: ESCI 202; 15 MATH, PHYS, QUAN or STAT points or an approved equivalent; 15 further points from (CHEM 113 -115, MATH 141-177, PHYS 114-115, STAT 193)
 Co-requisite: ESCI 341 (field trip course)
 Course Coordinator: Prof Tim Naish

A study of the modern and past Earth environments and the key processes that have shaped them. This course focuses on understanding and interpreting evidence from the geological record for environmental change and how this knowledge is used to help predict future variability, with specific focus on Antarctica, the Southwest Pacific Ocean and New Zealand.

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|-----------------|------------------|---|---------------|------------|
| ESCI 302 | CRN 15145 | TECTONICS AND STRUCTURAL GEOLOGY | 20 PTS | 2/3 |
|-----------------|------------------|---|---------------|------------|

Prerequisites: ESCI 203, 341, 342; 15 MATH, PHYS, QUAN or STAT points or an approved equivalent; 15 further points from (CHEM 113-115, MATH 141-177, PHYS 114-115, STAT 193)
 Course Coordinator: Dr Carolyn Boulton

This course covers deformation of the earth at all scales, including plate tectonics and the structural geology. The laboratory part of the course emphasises practical methods of tectonic and structural analysis and interpretation based on outcrop, microscopic, and geophysical data sets. It includes two all-day field trips.

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|-----------------|------------------|-----------------------------------|---------------|------------|
| ESCI 303 | CRN 15140 | PETROLOGY AND GEOCHEMISTRY | 20 PTS | 2/3 |
|-----------------|------------------|-----------------------------------|---------------|------------|

Prerequisites: ESCI 204; 15 MATH, PHYS, QUAN or STAT points or an approved equivalent; 15 further points from (CHEM 113-115, MATH 141-177, PHYS 114-115, STAT 193)

Course Coordinator: Dr Monica Handler

The course introduces fundamental concepts, principles and methods in geochemistry and the application of geochemical tools to geochronology, igneous, metamorphic rocks and processes. The formation, classification and geochemical behaviour of elements, isotopes and analytical methods in geochemistry. The application of geochemical tools is examined, and the principles of geochronology applied.

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|-----------------|------------------|---------------------------|---------------|------------|
| ESCI 305 | CRN 15146 | APPLIED GEOPHYSICS | 20 PTS | 1/3 |
|-----------------|------------------|---------------------------|---------------|------------|

Prerequisites: ESCI 112 or 203; 15 MATH, PHYS, QUAN or STAT points or an approved equivalent; 15 further points from (CHEM 113-115, MATH 141-177, PHYS 114-115, STAT 193)

Course Coordinator: Prof Martha Savage

This course covers the use of geophysical data acquisition, processing and interpretation for exploring the Earth's interior, especially on a small regional scale. Topics will include gravity, electrical and magnetic surveying and the fields of simple bodies, refraction seismology, an introduction to reflection survey data interpretation, the use of GPS for surveying and geodesy, and the use of surface waves for determination of shear wave velocities for engineering and seismic hazard purposes

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|-----------------|--------------------------------|----------------------------------|---------------|------------|
| ESCI 341 | CRN 15144 CRN 28413 | SEDIMENTARY FIELD GEOLOGY | 10 PTS | 1/3 |
|-----------------|--------------------------------|----------------------------------|---------------|------------|

Prerequisites: ESCI 202, 241; 15 MATH, PHYS, QUAN or STAT points or an approved equivalent; 15 further points from (CHEM 113-115, MATH 141-177, PHYS 114-115, STAT 193)

Restriction: ESCI 340

Field trip: You need to select one of two one-week field trips over the month of February (depending on demand). Refer to online Course Finder for dates.

Course Coordinator: Dr Cliff Atkins

The rolling hills beyond Martinborough are an ideal introduction to geological field mapping and stratigraphy. The grassy landscape hides a gently deformed late Cenozoic sedimentary sequence ranging from marine mudstone through limestone to terrestrial fluvial conglomerate and mudstone. Through a series of group field exercises and independent work, students learn how to conduct a traverse taking detailed outcrop descriptions, and use these to assemble a geological map, stratigraphic column and cross-section of the area. These form the basis of a brief report on the geological history of the area.

Note: Fieldwork is a basic and fundamental part of the training of a geologist, but in exceptional cases, field course requirement(s) may be waived, and alternative courses substituted, with HoS approval.

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|-----------------|------------------|---------------------------------|---------------|------------|
| ESCI 342 | CRN 15142 | STRUCTURAL FIELD GEOLOGY | 10 PTS | 1/3 |
|-----------------|------------------|---------------------------------|---------------|------------|

Prerequisites: ESCI 202, 203, 241; 15 MATH, PHYS, QUAN or STAT points or an approved equivalent; 15 further points from (CHEM 113-115, MATH 141-177, PHYS 114-115, STAT 193)

Restriction: ESCI 340

Field trip: You need to select one of two one-week field trips over the month of February (depending on demand). Refer to online Course Finder for dates.

Course Coordinator: Dr Carolyn Boulton

Held on the north-eastern (Kaikoura) coast of the South Island, this course provides practical experience in the mapping and study of geological structures in the field. The course involves outcrop description, mapping, structural analysis, and cross-section preparation.

Students will examine and interpret late Quaternary features that are deformed across active strike-slip faults, as well as relationships between syn-orogenic sediments, folds, thrust faults, and strike-slip faults in Cretaceous-Miocene rocks that have been strongly deformed in the Pacific-Australia plate boundary zone.

Note: Fieldwork is a basic and fundamental part of the training of a geologist, but in exceptional cases, field course requirement(s) may be waived, and alternative courses substituted, with the approval of the Head of School.

| ESCI 343 | CRN 17289 | VOLCANIC FIELD GEOLOGY | 10 PTS | 1/3 |
|---------------------|--|-------------------------------|---------------|------------|
| Prerequisites: | ESCI 204, 241; 15 MATH, PHYS, QUAN or STAT points or an approved equivalent; 15 further points from (CHEM 113-115, MATH 141-177, PHYS 114-115, STAT 193) | | | |
| Restriction: | ESCI 340 | | | |
| Field trip: | The field trip will be held in the mid-Trimester break (depending on demand). Refer to online Course Finder for dates. | | | |
| Course Coordinator: | Prof Colin Wilson | | | |

This course runs in the southern portion of the Taupo Volcanic Zone (TVZ), based at Whakapapa. It is an intensive field-based introduction to andesitic and rhyolitic volcanoes and their eruptions, how they are studied and quantified from simple field observations, and how they can be mapped. We will cover different styles of eruptions (lava flows and pyroclastic deposits), and three different styles of volcano (scoria cones, composite volcanoes, caldera volcanoes), and fit them into the big picture of TVZ volcanic and magmatic history.

| ESCI 344 | CRN 17288 | FIELD GEOPHYSICS | 10 PTS | 1/3 |
|---------------------|--|-------------------------|---------------|------------|
| Prerequisites: | ESCI 112 or 203; 15 MATH, PHYS, QUAN or STAT points or an approved equivalent; 15 further points from (CHEM 113-115, MATH 141-177, PHYS131, STAT 193) | | | |
| Corequisite: | ESCI 305 | | | |
| Field trip: | The field trip complements ESCI 305. It is held in the mid-trimester break during Trimester 1 (depending on demand). Refer to online Course Finder for dates | | | |
| Course Coordinator: | Prof Tim Stern/Prof Martha Savage | | | |

This course introduces the techniques of geophysical data acquisition, processing and geological interpretation, including gravity surveying, refraction seismology, reflection survey data interpretation, and resistivity and magnetic surveys. The course involves at least 4 days in the field followed by 2 days of analysis back in the geophysics lab.

| ESCI 349 | CRN 23186 | EARTH SCIENCES - INTERNATIONAL FIELD COURSE | 20 PTS | 3/3 |
|---------------------|---|--|---------------|------------|
| Prerequisites: | 60 pts of 200-level ESCI or GEOG, including either ESCI 241 | | | |
| Restriction: | ESCI 449 | | | |
| Field trip: | This is an entirely field-based course run overseas. Refer to online Course Finder for dates. | | | |
| Costs: | An extra fee beyond that for a 20-point (undergraduate) course will apply. All associated costs for the course (travel, food and accommodation) will need to be met by the student. | | | |
| Course Coordinator: | Dr Warren Dickinson | | | |

Not offered in 2021

Please note: This course is only offered every two years and the next offering will be in 2023. The course is offered on the condition that students must have a current passport and fulfill all necessary visa requirements. It requires a minimum number of students to run and if that critical threshold is not achieved the course will be cancelled.

This course is an intensive field-based overview to key overseas earth science locations where academic staff have familiarity, experience and research knowledge. The course location is likely to vary from year-to-year depending on the availability of staff and on student interest. The students will be expected to perform a number of field-based exercises which will be internally assessed. Differential UG & PG research reports (also internally assessed) will be directly related to the course location and associated fieldtrip.

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|-----------------|-----------------|-------------------------------------|---------------|------------|
| GEOG 312 | CRN 6009 | RACE, GENDER AND DEVELOPMENT | 20 PTS | 2/3 |
|-----------------|-----------------|-------------------------------------|---------------|------------|

Prerequisite: GEOG 212, 20 further GEOG 200-level points or 40 approved 200-level points
 Course Coordinator: Prof Sara Kindon

This course explores the relationships between differently raced, sexed and gendered people and development around the world using contemporary ideas from feminist/cultural geography, mātauranga Maori and development studies. We consider the ongoing issues of (post)colonialism and power within development practice which seeks to make the world a more equitable place.

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|-----------------|------------------|-----------------------------------|---------------|------------|
| GEOG 313 | CRN 18579 | GEOGRAPHIES OF NEW ZEALAND | 20 PTS | 3/3 |
|-----------------|------------------|-----------------------------------|---------------|------------|

Prerequisite: 20 200-level GEOG points, or approved courses for non GEOG majors
 Restriction: GEOG 311
 Field trip: The course will run over three weeks. The first two weeks will consist of lectures, followed in the third week by a field trip in January 2021. Refer to online Course Finder for dates.
 Course Coordinator: Dr Richard Willis

GEOG 313 studies human geographies of New Zealand, including demography, historical geography, political economy, economic geography, industrial geography, rural geography, social geography and urban geography, in both historical and contemporary settings. For final year students it will advance their knowledge of contemporary geographical processes in the New Zealand environment. For foreign, exchange or graduate students it will give them an advanced introduction to geographical context of the country in which they are studying.

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|-----------------|-----------------|--|---------------|------------|
| GEOG 314 | CRN 6011 | ADVANCED ENVIRONMENT AND RESOURCES: GLOBAL ISSUES | 20 PTS | 2/3 |
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Prerequisite: GEOG 214
 Restriction: ENVI 314
 Course Coordinator: TBC

The course is underpinned by an understanding that different disciplines frame environmental problems through their own particular lens. This lens has a role in the kinds of solutions that are proposed for the problem. These disciplinary lenses sometimes conceive of and value 'environment', 'nature' and what constitutes legitimate 'knowledge' differently.

Knowledge about human interaction with the 'environment' and 'nature' is therefore highly politicised. Drawing on these foundations, the course explores environmental challenges through a variety of disciplinary lenses that are commonly used to critically analyse the complexity of human induced environmental change.

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|-----------------|-----------------|--|---------------|------------|
| GEOG 315 | CRN 6012 | ADVANCED GEOGRAPHIC INFORMATION SYSTEMS (GIS) | 20 PTS | 2/3 |
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Prerequisites: GEOG 215, 20 further approved 200-level points
 Course Coordinator: Prof David O'Sullivan

This course looks at the more advanced aspects of geographic information systems (GIS). There is a particular emphasis on open source tools and on approaches to doing geospatial analysis in code using *R* as these are becoming increasingly important in science and other workplace settings. The major assessment component of the class is a mini-project exercise which gives students an opportunity to explore methods and topics of interest to themselves, and also to develop confidence exploring and present results from the analysis of spatial data using a modern literate programming approach. It is expected that students will have completed GEOG215, or an introductory course in GIS at another institution.

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|-----------------|-----------------|-------------------------------------|---------------|------------|
| GEOG 316 | CRN 6013 | GEOGRAPHIES OF GLOBALISATION | 20 PTS | 1/3 |
|-----------------|-----------------|-------------------------------------|---------------|------------|

Prerequisites: (GEOG 212, 20 further GEOG 200-level points) or 40 approved 200-level points
 Field trip: A half day field trip in Wellington (date TBC)
 Course Coordinator: Prof Warwick Murray

An analysis of the nature and impacts of globalisation from a geographical perspective. This course questions the concept of globalisation and focuses on the economic, cultural and environmental implications of the process in both developed and developing countries.

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|-----------------|-----------------|--|---------------|------------|
| GEOG 318 | CRN 7517 | QUATERNARY ENVIRONMENTAL CHANGE | 20 PTS | 1/3 |
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Prerequisites: BIOL/GEOG 222, one of (GEOG 220, 224)
 Field trip: Mandatory weekend field trip early in Trimester 1 (dates TBC)
 Course Coordinator: Dr Jenni Hopkins

New Zealand is well-endowed with a diverse array of sedimentary deposits and landforms of Quaternary-age that not only record significant climatic and environmental variability over time but also volcanic and tectonic processes that have a distinct influence upon these deposits and landforms. This course aims to investigate these New Zealand Quaternary records, and to find out why these records are of global significance.

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| GEOG 319 | CRN 7518 | APPLIED GEOMORPHOLOGY | 20 PTS | 1/3 |
|-----------------|-----------------|------------------------------|---------------|------------|

Prerequisites: GEOG 224, one of (GEOG 220, BIOL/GEOG 222); 15 points from MATH 132-177, PHYS 131 or STAT 193 (or equivalent)
 Field trip: Mandatory 2-day weekend field trip early in the trimester (dates TBC)
 Course Coordinator: A/Prof Kevin Norton

This course will explore the operations and, where appropriate, the management of key landform systems. The course provides a detailed synthesis of the physical processes and linkages operating at the earth's surface that shape our landscape and physical environment. These processes will be explored through a range of topics that may include the geomorphology of coasts, tectonic regions, glacial environments and fluvial systems.

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|-----------------|------------------|------------------------|---------------|------------|
| GEOG 321 | CRN 26057 | ICE AND CLIMATE | 20 PTS | 2/3 |
|-----------------|------------------|------------------------|---------------|------------|

Prerequisites: GEOG 220, one of (BIOL/GEOG 222, GEOG 224); 15 points from MATH 132 -177, PHYS 131 or STAT 193 (or equivalent)
 Course Coordinator: Dr Shaun Eaves

An overview of the climate system and the cryosphere, focusing on interactions between the two, covering (1) comprehensive treatment of climate processes over the 2000 years leading into the modern era of anthropogenic influence; (2) case studies of ice-climate interactions; recent behaviour of ice sheets, mountain glaciers and sea ice.

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|-----------------|------------------|--|---------------|------------|
| GEOG 322 | CRN 31090 | ISLANDS AND OCEANS: PEOPLE, POWER AND PLACE | 20 PTS | 1/3 |
|-----------------|------------------|--|---------------|------------|

Prerequisite: 40 200-level points from ANTH, DEVE, ENVI, GEOG,
Restriction: MAOR, PASI or POLS
Course Coord: Dr Polly Stupples

This course examines a range of issues relevant to island and ocean geographies in (post) colonial contexts – such as climate change, forced migration, militarization, biodiversity, the blue economy – through relevant geographic theories including material geographies, political geographies, more-than-human geographies, and feminist geographies. In doing so, it builds on geographic concepts of region, scale, scarcity, boundaries, marginality and identity. Case studies will largely be drawn from the wider Pacific region, including Aotearoa/New Zealand.

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|-----------------|------------------|------------------------|---------------|------------|
| GEOG 324 | CRN 26058 | RESEARCH DESIGN | 10 PTS | 1/3 |
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Prerequisites: 40 ENVI or GEOG 200-level points (or 40 approved 200-level points);
STAT 193 or equivalent
Course Coordinator: Prof Sara Kindon and Dr Jamie Howarth

This is a practical and professionally oriented course. It imparts some of the excitement and value of different approaches to research design across all aspects of Geography (physical and human). With the support of lectures and laboratory exercises and discussions, students learn about how to ask relevant research questions, develop appropriate research designs, integrate different methods, consider ethics, and practice project management. Building communication skills, students work in teams to develop and present a group research proposal for a project (to be carried out in GEOG 325).

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|-----------------|------------------|----------------------|---------------|------------|
| GEOG 325 | CRN 26055 | FIELD METHODS | 10 PTS | 2/3 |
|-----------------|------------------|----------------------|---------------|------------|

Prerequisites: GEOG 324
Field trip: Participation is a mandatory requirement of this course as fieldtrips and fieldwork take place in different sites according to the students' project proposals developed in GEOG 324. Most fieldtrips and fieldwork take place within the first 2-4 weeks of Trimester 2.
Course Coordinator: Dr Jamie Howarth and Dr Marcela Palomino-Schalscha

The course builds directly on GEOG 324 to enable students to carry out team-based research using relevant field methods in particular sites, to analyse the data they generate and to present on their findings. It exposes students to a range of field methods and their application and provides a strong foundation for more independent research at postgraduate level.

Please note that the course is field based with students pursuing their own fieldwork under the guidance and mentorship of academic staff and postgraduate tutors. There are also some scheduled classroom sessions focusing on data analysis and presentation.

WHO TO CONTACT

STUDENT AND ACADEMIC SERVICES — FACULTY OF SCIENCE

Te Wāhanga Pūtaiao

Address: Level 1, Cotton Building
Phone: 04-463 5101
Email: science-faculty@vuw.ac.nz
Web: www.victoria.ac.nz/science
Hours: 8.30am–4.00pm Monday, Wednesday, Thursday, Friday
9.30am–4.00pm Tuesday
At busy times of the year the office may close at 3.00pm

At the Faculty of Science Student Administration Office, student advisers can help with admission requirements, degree planning, changing courses and transfer of credit from other tertiary institutions. They also deal with other aspects of student administration such as enrolment, exams organisation and the maintenance of student records.

| Student Advisor | Email | Contact |
|------------------------|--|----------------|
| Anna Franceschini | anna.franceschini@vuw.ac.nz | 04-463 5983 |
| Annemarie Thorby | annemarie.thorby@vuw.ac.nz | 04-463 7473 |
| Lissa Harrop | lissa.harrop@vuw.ac.nz | 04-463 5101 |
| Cristina Sebold | cristina.sebold@vuw.ac.nz | 04-463 5981 |
| Johan Barnard | Manager, Student and Academic Services | 04-463 5980 |
| Kevin Gould | Associate Dean (Academic Undergraduate) | 04-463 5101 |

Āwhina | Māori student support

Address: Room 133, Cotton Building, Kelburn Parade. 04-463 9546
Email: awhina@vuw.ac.nz
Web: <https://www.wgtn.ac.nz/maori-hub/tautoko/whanau/awhina>

Āwhina is the on-campus whānau for Māori students to work together to share knowledge, achieve academic success, and build strong communities and leaders.

At Āwhina, our kaupapa (goal) is to help students successfully transition from secondary education or work into tertiary education, and to provide academic support for Māori students enrolled at the University. Our experienced staff offer one-to-one advising and mentoring sessions, tutorials, study wānanga, and a range of workshops to help you achieve your study goals. Our culturally inclusive environment includes whānau rooms with computer facilities, study areas, kitchen facilities, and space to meet with peers or tuākana (older students).

STAFF CONTACTS

| | | ROOM | CONTACT |
|---|-----------------------|-------------|----------------|
| Head of School | Prof James Renwick | 309 | 463 4719 |
| Deputy Head of School | Dr Monica Handler | 417 | 463 5391 |
| PROGRAMME DIRECTORS | | | |
| Geography - (GEOG, PHYG, ENVI, DEVE) | Prof Rewi Newnham | 200 | 463 5279 |
| Earth Sciences - (ESCI, GEOL, GPHS) | Dr Cliff Atkins | 302c | 463 6143 |
| UNDERGRADUATE COORDINATORS | | | |
| Development Studies | Prof Warwick Murray | 211 | 463 5029 |
| Environmental Studies | Dr Wokje Abrahamse | 203 | 463 5217 |
| Environmental Sciences | Dr Andrew Rees | 214 | 463 8396 |
| Human Geography | Prof Warwick Murray | 211 | 463 5029 |
| Geology | Dr Cliff Atkins | 302c | 463 6143 |
| Geophysics | Prof Martha Savage | 529 | 463 5961 |
| Geographic Information Science (GIS) | Dr David O'Sullivan | 227 | 463 6492 |
| Physical Geography | Prof Rewi Newnham | 200 | 463 5279 |
| POSTGRADUATE COORDINATORS | | | |
| Development Studies | Prof John Overton | 209 | 463 5281 |
| Environmental Studies | A/Prof Ralph Chapman | 212 | 463 6153 |
| Environmental Sciences | Dr Andrew Rees | 214 | 463 8396 |
| Geography | Prof Sara Kindon | 213 | 463 6194 |
| GIS | Prof David O'Sullivan | 227 | 463 6492 |
| Geology/Earth Sciences | Prof Colin Wilson | 411 | 463 9510 |
| Geophysics | Prof Martha Savage | 529 | 463 5112 |
| Physical Geography | A/Prof Kevin Norton | 202 | 463 6993 |
| Meteorology | Dr Jim McGregor | 530 | 463 5278 |
| Climate Change Science & Policy | Dr Alex Lo | 128 | 463 5058 |
| SCHOOL ADMINISTRATORS | | | |
| School Manager | Monika Hanson | 310 | 463 5345 |
| Programme Administrator - ESCI | Steff Marinus | 311 | 463 5337 |
| Programme Administrator - GEOG | TBC | 311 | |
| Administrator - Postgraduate | Minda Goncalves | 311 | 463 6108 |
| Administrator - Operations | Emma Fisher | 311 | 463 5346 |

ACADEMIC STAFF

| Title | First Name | Surname | Research Interests | Room | Tel No |
|--------------|-------------------|----------------|---|-------------|---------------|
| Dr | Wokje | Abrahamse | <i>Environmental studies, human dimensions of environmental issues, behaviour change, urban sustainability</i> | 203 | 463 5217 |
| Dr | Cliff | Atkins | <i>Sedimentary processes and environments, Antarctic glacial geology</i> | 302c | 463 6143 |
| Dr | Carolyn | Boulton | <i>Faults, Fluid-rock interaction, Friction, Structural geology, Earthquake cycle, Earthquake-simulation experiments</i> | 226 | 463 8369 |
| A/Prof | Ralph | Chapman | <i>Environmental studies, climate change, energy, transport, housing, urban, design, environmental health</i> | 212 | 463 6153 |
| Prof | James | Crampton | <i>Biodiversity history, mollusc taxonomy, morphometrics, traditional and quantitative biostratigraphy, cretaceous stratigraphy, basin evolution and history of New Zealand</i> | 214 | 463 8396 |
| Dr | Mairéad | de Róiste | <i>Public Participation GIS, Usability, GIS, geovisualization, capability building, pedagogy</i> | 215 | 463 6431 |
| Dr | Shaun | Eaves | <i>Geomorphology, quarternary climate change, glacial palaeoclimatic reconstruction</i> | 521 | 463 5176 |
| Dr | Monica | Handler | <i>Geochemistry, mantle processes, volcanic rocks, Earth formation</i> | 417 | 463 5391 |
| A/Prof | Michael | Hannah | <i>Biostratigraphy, marine biostratigraphy, dinoflagellates; cretaceous/tertiary</i> | 306 | 463 5494 |
| Dr | Huw | Horgan | <i>Glaciology; ice-sheet stability, ice-shelf mass balance. Active source seismology</i> | 520 | 463 6918 |
| Dr | Jamie | Howarth | <i>Earthquake behavior and hazards, storm frequency, mountain systems</i> | 224 | 463 5071 |
| A/Prof | Bethanna | Jackson | <i>Hydrology; ecosystem service modelling; predicting impacts of land management</i> | 208 | 463 6116 |
| Prof | Sara | Kindon | <i>Social and development geography, participatory research, visual and creative methods, gender, refugee resettlement, Indigenous approaches</i> | 213 | 463 6194 |
| A/Prof | Simon | Lamb | <i>Structural geology and tectonics</i> | 525 | 463 6428 |
| Prof | Tim | Little | <i>Tectonics, structural geology, deformational processes</i> | 410 | 463 6198 |
| Dr | Jim | McGregor | <i>Meteorology</i> | 530 | 463 5278 |
| Prof | Warwick | Murray | <i>Social/economic geography of development, globalisation, Latin America, Oceania, Asia-Pacific</i> | 211 | 463 5029 |
| Prof | Rewi | Newnham | <i>Quaternary climate and environmental change, palynology and vegetation history</i> | 200 | 463 5279 |
| A/Prof | Kevin | Norton | <i>Geomorphology</i> | 202 | 463 6993 |
| Prof | David | O'Sullivan | <i>Urban geography, spatial analysis, modelling and visualization, geospatial technologies</i> | 227 | 463 6492 |
| Prof | John | Overton | <i>Development studies, theories of development, land tenure, rural transformations</i> | 209 | 463 5281 |

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|----------------------|-----------------|--------------------|--|------|----------|
| Dr | Marcela | Palomino-Schalscha | <i>Social cultural geography, post- development and postcolonial approaches, diverse and solidarity economies, tourism and its connections to development and environmental issues, political ecology, Latin America, Indigenous knowledges and rights</i> | 203 | 463 5899 |
| Dr | Lynda | Petherick | <i>Quaternary climate and environmental change, palynology and vegetation history, sedimentology and aeolian processes</i> | 207 | 463 5844 |
| Prof | James | Renwick | <i>Climate; climate variability, climate change, climate modelling, climate prediction, New Zealand climate, El Niño-Southern Oscillation (ENSO), teleconnections, atmospheric blocking, Antarctic sea ice, multivariate statistical analysis</i> | 309 | 463 4719 |
| Dr | Andrew | Rees | <i>Environmental science, environmental monitoring, quantitative paleoecology, environmental reconstruction</i> | 214 | 463 8396 |
| Prof | Martha | Savage | <i>Seismology and its relation to tectonics, volcanoes, earthquake hazards and geothermal energy</i> | 529 | 463 5961 |
| Dr | Mirjam | Schindler | <i>Urban geography/modelling</i> | 204 | 463 5645 |
| Dr | Ian | Schipper | <i>Igneous Petrology and Volcanology</i> | 415 | 463 8197 |
| Dr | Dan | Sinclair | <i>Environmental geochemistry, paleoclimatology, paleoceanography, rapid climate change during the last glacial, geochemistry of carbonates, speleothems and corals; biomineralization</i> | 419 | 463 9755 |
| Prof | Tim | Stern | <i>Exploration geophysics and tectonics, crust and mantle structure of the Earth</i> | 526 | 463 5112 |
| Dr | Polly | Stupples | <i>Social and cultural geography, development studies, creative practice and the creative economy, sustainability</i> | 225 | 463 6793 |
| Prof | Rupert | Sutherland | <i>Global-scale tectonic process and crustal-scale tectonic processes</i> | 527 | 463 6422 |
| Dr | Amanda | Thomas | <i>democracy, environmental democracy, political ecology, gender, class and ethnicity</i> | 201 | 463 6117 |
| Prof | John | Townend | <i>Fault mechanics and tectonophysics</i> | 528 | 463 5411 |
| Dr | Julie | Vry | <i>Metamorphic petrology, geochemistry</i> | 409 | 463 6432 |
| Dr | Vincent (Billy) | van Uitregt | <i>indigenous voices, worldviews and knowledges in contemporary environmental science, policy and governance</i> | 205 | 463 6119 |
| Prof | Colin | Wilson | <i>Field, chemical and physical volcanology, super-volcanoes, pyroclastic deposits, volcano-tectonics, and geothermal geology</i> | 411 | 463 9510 |
| SENIOR TUTORS | | | | | |
| Mr | Dene | Carroll | <i>Senior Tutor – Earth Sciences</i> | 302c | 463 5932 |
| Mr | Pascarn | Dickinson | <i>Senior Tutor - Geography</i> | 222 | 463 8030 |

ANTARCTIC RESEARCH CENTRE

| | | | | | |
|--------|----------|-----------|-------------------------------------|-----|----------|
| Dr | Brian | Anderson | Senior Research Fellow | 521 | 463 5176 |
| A/Prof | Nancy | Bertler | Antarctic Science Platform Director | 519 | 463 6196 |
| Dr | Ruzica | Dadic | Senior Research Fellow | 510 | 463 6199 |
| Dr | Warren | Dickinson | Senior Research Fellow | 510 | 463 6199 |
| Ms | Michelle | Dow | Centre Manager | 512 | 463 6587 |
| Dr | Gavin | Dunbar | Senior Lecturer | 518 | 463 6123 |
| Dr | Bella | Duncan | Postdoctoral Fellow | 507 | 463 5493 |
| Dr | Shaun | Eaves | Lecturer in Physical Geography | 521 | 463 5176 |
| A/Prof | Nick | Golledge | Associate Professor | 509 | 463 9592 |
| Dr | Huw | Horgan | Senior Lecturer | 520 | 463 6918 |
| Dr | Stefan | Jendersie | Research Fellow | 511 | 463 5004 |
| A/Prof | Richard | Levy | Associate Professor | 519 | 463 6196 |
| Mr | Darcy | Mandeno | Field and Operations Engineer | 513 | 463 9662 |
| A/Prof | Rob | McKay | Director | 508 | 463 6836 |
| Prof | Tim | Naish | Professor in Earth Sciences | 506 | 463 6197 |
| Mrs | Dao | Polsiri | Administrator & NZ SeaRise | 512 | 463 6587 |
| Dr | Oliver | Wigmore | Postdoctoral Fellow | 506 | 463 6193 |

CLIMATE CHANGE RESEARCH INSTITUTE

| | | | | | |
|------|------|----------|------------------------|-----|----------|
| Prof | Dave | Frame | Director | 127 | 463 6790 |
| Dr | Judy | Lawrence | Senior Research Fellow | 129 | 463 5474 |
| Dr | Alex | Lo | Senior Lecturer | 128 | 463 5058 |

POSTDOCTORAL FELLOWS

| | | | | | |
|----|----------|--------------|---|-----|----------|
| Dr | Simon | Barker | <i>Volcanology, Geochemistry, Petrology</i> | 505 | 463 4042 |
| Dr | Calum | Chamberlain | <i>Geophysics</i> | 505 | 463 4042 |
| Dr | Kyle | Clem | <i>Climate Science</i> | 206 | 463 5642 |
| Dr | Jenni | Hopkins | <i>Volcanic Geochemistry</i> | 505 | 463 4042 |
| Dr | Finnigan | Illsley-Kemp | <i>Volcano Geodynamics</i> | 505 | 463 4042 |

TECHNICAL STAFF

| | | | | | |
|------|-----------|----------|---------------------------------|-----|----------|
| Mrs | Luisa | Ashworth | Technician – Geochem | 404 | 463 6402 |
| Mr | Aleksandr | Beliaev | Computing Systems Administrator | 502 | 463 6470 |
| Dr | Bruce | Charlier | Geochem Lab Manager | 414 | 463 5865 |
| Miss | Jane | Chewings | Senior Technical Officer | 319 | 463 6192 |
| Mr | Andrew | Rae | Technician – GIS Support | 502 | 463 6470 |
| Mr | Kosta | Tashkoff | Manager Technical Services | 307 | 463 6013 |
| Mr | Dez | Tessler | Technician – Field Support | 318 | 463 6512 |
| Ms | Cassandra | Trinh-Le | Technician – Geophysics | 318 | 463 6512 |
| Ms | Ningsheng | Wang | Senior Technical Officer | 414 | 463 6127 |

EMERITUS PROFESSORS

| | | | | | |
|--------|---------|----------|---|------|------------|
| E/Prof | David | Bibby | <i>Nuclear energy</i> | | Off campus |
| E/Prof | Michael | Crozier | <i>Physical geography</i> | | Off campus |
| E/Prof | John | Gamble | <i>Petrology and volcanology</i> | 421b | 463 5253 |
| E/Prof | Phil | Morrison | <i>Economic geography, labour market geography, urban growth and development</i> | 213 | 463 6194 |
| E/Prof | Euan | Smith | <i>Seismology, earthquake occurrence, earthquake mechanics, earth deformation, seismic hazard</i> | 525 | 463 6428 |
| E/Prof | Dick | Walcott | <i>Global tectonics, continental deformation</i> | | Off campus |
| E/Prof | Ray | Watters | <i>Latin America, Uplands of China</i> | | Off campus |

In most cases, staff emails are firstname.lastname@vuw.ac.nz

**School of Geography, Environment and Earth Sciences
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Victoria University of Wellington**

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