

2025

Postgraduate Course List

Geography, Environment & Earth Sciences

Te Kura Tātai Aro Whenua



Image: Blue Lake – Old Gold Workings: 2019 Michael Hannah

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Welcome!

The School of Geography, Environment and Earth Sciences offers postgraduate degrees at Honours, Masters, and PhD levels, as well as graduate and postgraduate certificates and diplomas. This guide provides information about the differences between these degrees, the requirements of each, and descriptions of our postgraduate courses for 2025.

If you have any questions, here are some contacts to receive additional help:

For general enquiries:

If you have any general enquiries about your studies, the Titoko – Centre for Student Success is there to assist you. The team serves as the first point-of-contact for help with planning the courses necessary to complete your qualification, modifying your current courses or programmes, overcoming challenges in your academic progress, connecting you with support services, and addressing various aspects of student life.

Every student at Te Herenga Waka – Victoria University of Wellington is assigned a personal Student Success Adviser. You can find the name of your adviser in Pūaha (student portal): instructions [here](#) on how to find your adviser.

Or, if you do not know who your adviser is, you can also drop into the Titoko office or contact the team by phone or email. Their hours are 9 am – 4pm, Monday to Friday.

Office: CO144, Ground floor, Cotton building, Kelburn campus

Email: info@vuw.ac.nz

Phone: 0800 04 04 04

For additional help:

Greg Ambrose Student Success Manager

Greg.ambrose@vuw.ac.nz

Polly Stupples Associate Dean (Students and Taught Postgraduate)

Polly.stupples@vuw.ac.nz

Āwhina | Māori student support:

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

Email: awhina@vuw.ac.nz

Phone: 04 463 5987

Website: www.wgtn.ac.nz/awhina

Pasifika Student Success support:

The Pasifika Student Success team is the University 'āiga (family) who journey with all Pasifika students at Te Herenga Waka. The team fosters learning and teaching communities in an environment that celebrates Pasifika cultures, is welcoming and safe, and is focused on academic excellence, personal growth, and wellbeing.

Email: pasifika@vuw.ac.nz

Phone: 04 463 6015

Website: www.wgtn.ac.nz/pasifika

Te Amaru | Disability Services:

Disability Services is a leading provider of disability advice, expertise, and support. Disability Services work in partnership with staff, students, and the disability community to strength the University's culture of inclusion, to celebrate disability, and to ensure students can fully participate and achieve their aspirations.

Email: disability@vuw.ac.nz

Phone: 04 463 6070

Website: www.wgtn.ac.nz/disability

For Specific Degree Questions:

If you have any questions about one of our postgraduate graduate programmes, you can also contact one of our postgraduate coordinators – their contact information is listed below:

Programme	Postgraduate Coordinator	Contact Email
Geography and Development Studies (Thesis)	A/Prof Mairéad de Róiste	mairead.deroiste@vuw.ac.nz
Geography and Development Studies (Admissions)	Dr Mirjam Schindler	mirjam.schindler@vuw.ac.nz
Environmental Studies	Dr Amanda Thomas	amanda.thomas@vuw.ac.nz
Earth Sciences, Geology, Physical Geography, and Environmental Science	Prof Colin Wilson	colin.wilson@vuw.ac.nz

For Specific Course Questions:

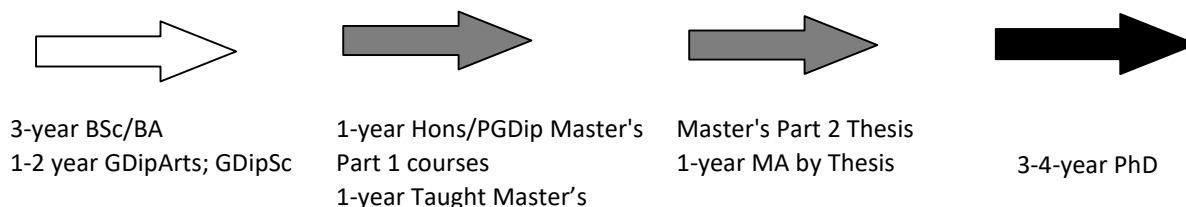
If you have any questions about a specific course, please email the course coordinator (listed on the course details section). Staff emails are firstname.lastname@vuw.ac.nz

For information regarding potential projects for postgraduate students, please have a look at our [website](#) for the updated list

TYPES OF POSTGRADUATE QUALIFICATIONS

The School of Geography, Environment and Earth Sciences offers postgraduate degrees at Honours, Masters, and PhD levels, as well as graduate and postgraduate certificates and diplomas.

The diagram below represents the structure of postgraduate study in science.



Bachelor of Arts with Honours – BA (Hons) & Bachelor of Science with Honours – BSc (Hons)

An Honours Degree (Hons) is a chance to deepen your knowledge and skills in a specialist area. It is a prestigious qualification and a good option for students interested in progressing to further, in-depth research, such as a PhD.

The degree is normally completed over two trimesters and involves 120 points of study, including a 30-point research project.

After graduating with an honour's degree, you are eligible for direct entry to a PhD. It is also possible to progress to a one-year thesis-only Master of Science (MSc) / Master of Arts (MA) degree.

Entry Requirements – BA (Hons):

- An undergraduate degree in the chosen field, with at least a B average in your Bachelor's degree for the subject you intend to study (or a B+ average for some subjects),
- have met the requisites for the chosen subject,
- to be accepted by the Head of School as capable of proceeding with the proposed course of study.

The School offers a BA(Hons) with a major in Geography.

Entry Requirements – BSc (Hons):

- An undergraduate degree in the chosen field, with at least a B+ grade average,
- have met the requisites for the chosen subject,
- to be accepted by the Head of School as capable of proceeding with the proposed course of study.

The School offers a BSc (Hons) Degrees with majors in Geography, Geology, and Geophysics.

Master of Science by coursework and thesis (MSc)

A Master of Science Degree (MSc) by coursework and thesis, allows you to build on your previous study via a mixture of coursework and research. The degree is normally completed over two years (Part 1 and Part 2). Part 1 involves 90 points of coursework and 30 points of research preparation. Part 2 is full-time supervised research (120 points).

Entry Requirements:

- A Bachelor's degree or relevant graduate or postgraduate diploma with a grade average of at least B+,
- have met the prerequisites for the chosen subject,
- to be accepted by the Head of School as capable of proceeding with the proposed course of study.

The School offers MSc (240-point) degrees majoring in Development Studies, Environmental Science, Geography, Geology and Geophysics, and a specialist Master's programme in Environmental Studies (MEnvStud).

Master of Science by Thesis (MSc)

The Master of Science (MSc) by Thesis will develop your technical, laboratory and academic writing skills to prepare you for a career in science. You will carry out in-depth supervised research and write a thesis (120 points).

Entry Requirements

- Bachelor's degree with Honours or equivalent in the relevant subject

The School offers MSc (120-point) degrees majoring in Geography, Geographic Information Science, Geology, and Geophysics.

Taught Master's Degrees

These degrees are normally undertaken over one calendar year and are designed to provide a professional focus in a variety of subject areas; including Master of Climate Change Science and Policy (MCCSP), Master of Development Studies (MDevStud), Master of Environmental Science (MEnvSci), and Master of Meteorology (MMet).

Master of Arts by Thesis (MA)

The Master of Arts (MA) by Thesis will let you study your specialist subject in detail, building on your previous study. The degree normally is completed over a year, and you will carry out in-depth supervised research and write a thesis (120 points)

The School offers MA (120-point) degrees majoring in Development Studies and Geography.

DIPLOMAS AND CERTIFICATES

We offer a number of diplomas and certificates that allow students to build and expand your previous education in a particular topic. Options include a Graduate Diplomas in Science (GDipSc), Postgraduate Certificated in Science (PGCertSc), Postgraduate Diploma in Arts (PGDipArts), Postgraduate Diploma in Development Studies (PGDipDevStud), Postgraduate Diploma in Environmental Studies (PGDipEnvStud), and Postgraduate Diploma in Meteorology (PGDipMet).

Postgraduate Certificate in Science (PGCertSc)

A Postgraduate Certificate gives students the chance for postgraduate study in a focused area within an achievable timeframe while working full-time or managing other commitments. The PGCertSc can also provide an earlier exit point from an MSc or BSc(Hons) programmes.

The PGCertSc is:

- One trimester full-time or up to two years part-time,
- usually consists of all coursework (60 points) at the postgraduate level (i.e. 400-level or above),
- usually requires a B grade average in related 300-level subjects for admission,
- is endorsed in a subject offered for the MSc degree,
- can lead to a PGDipSc with 60 further approved points.

The School offers the following subjects for the PGCertSc: Climate Change Science and Policy, Environmental Science, Geography, Geology, and Geophysics.

Postgraduate Diploma in Science (PGDipSc) & Postgraduate Diploma in Arts (PGDipArts)

This is a one-year postgraduate programme. The PGDipSc / PGDipArts provides an alternative path of postgraduate study for students wanting a coursework postgraduate qualification or those not admitted to the BSc(Hons) or MSc Part 1 and for those who are not permitted to progress to Part 2 of the MSc but have passed an appropriate 120 points at postgraduate level.

The PGDipSc is:

- One year full-time or up to four years part-time,
- usually consists of all coursework (120 points) at the postgraduate level,
- usually requires a B grade average in related 300-level subjects for admission,
- is endorsed in a subject offered for the MSc degree,
- may permit admission to an MSc by research if achieved at a high academic level.

The School offers the following subjects for the PGDipSc: Environmental Science, Geography, Geology, and Geophysics.

The School offers Geography as the subject for the PGDipArts.

Doctor of Philosophy (PhD)

The PhD is the highest degree offered, and usually takes three to four years to complete. It is an internationally recognised research degree and opens rich and varied career opportunities. Students should contact the Faculty of Graduate Research (FGR) www.wgtn.ac.nz/fgr to enrol.

Formal assessment of the PhD degree is by means of a thesis and an oral examination, but progress reports and seminars are also required during the course. Students must have a BSc or BA (Hons), Masters, or equivalent degree, and must have the agreement of a supervisor to be admitted to the PhD programme.

CLIMATE CHANGE SCIENCE AND POLICY

Climate change is without a doubt the biggest environmental challenge our world is facing. Globally we are already encountering some of the negative consequences: an increase in extreme weather events, concerns about food security, species loss and threats to biodiversity, and the loss of habitable land.

The need to keep global warming well below a 2-degree threshold to prevent even more serious impacts is well-established. How we go about reducing our emissions, and how we adapt to changes that have already happened, requires scientists and policymakers with a broad understanding of both the physical science and human systems that are involved.

The 180-point Master of Climate Change Science and Policy (MCCSP) responds to this need by providing a cross-disciplinary programme which combines taught courses with a research essay or placement into an external organisation, giving students the necessary combination of policy and science knowledge to address the real-world problem of climate change.

The MCCSP provides students with understanding about the physical nature of global climate change, the ethical, scientific and policy strengths and weaknesses of current and proposed strategies for tackling climate change, and the political forces working for—and against—addressing this challenge. Students gain insight into the economics, politics, communication, behavioural science and public engagement critical to developing strategies to mitigate and adapt to its impacts at local, national and global scales. Our proximity to—and close relationships with—relevant government bodies, research institutes and other key agencies in climate change science and policy, ensure students are exposed to a wide range of expertise from across the university and from visiting experts.

Who should apply?

The Master of Climate Change Science and Policy is ideal for science graduates who are interested in working in policy, iwi development or NGO advocacy related to climate change, and graduates from other disciplines such as law, engineering or social science who want to gain the scientific knowledge of climate-change that will give them an edge in their career. Equally, those with more of a law or social science background who want to understand the science of climate change are encouraged to apply.

You will need to have a three-year degree in a relevant subject, with a B+ average at 300 level, from any New Zealand university. Students with equivalent international qualifications or extensive and relevant practical, professional, or scholarly experience are encouraged to apply, although admission to the programme is at the discretion of the Associate Dean - Academic (Postgraduate).

Programme Structure

The MCCSP is a taught Master's degree that can be completed in one year of full-time study or up to three years of part-time study. The programme starts in Trimester One.

Degree requirements:

- Complete 180 points,
- Four courses in Part 1:
 - Physical Basis of Climate Change (CCSP 401),
 - Climate Change Impacts and Adaptation (CCSP 402),
 - International Climate Change Policy (CCSP 403),
 - Climate Change Mitigation (CCSP 404),
- 60 points in Part 2 in elective courses approved by the postgraduate coordinator, and
- Complete one of the following courses in Part 3:
 - Research Essay (CCSP 510): This major research project gives the student scope to investigate a climate related topic of interest, and centres on writing and presenting an extended research essay of up to 15,000 words, **or**
 - Practicum Placement and Project (CCSP 511): The placement is a period of work organised by the student with an employer, in a field related to climate change science, policy or management including the completion of a short research project.

For any more information regarding our postgraduate Climate Change Science and Policy (CCSP) programme, please contact the postgraduate coordinator Prof James Renwick (james.renwick@vuw.ac.nz).

DEVELOPMENT STUDIES

Communities and organisations around the world face volatile, uncertain, and complex challenges in their efforts to increase equity, sustainability, and justice. Studying Development Studies can help you find solutions and be part of creating more just and regenerative futures.

The United Nation's Sustainable Development Goals aim to leave 'no one behind,' and international aid prioritises good governance and partnerships, but what role do Indigenous, grassroots, and transnational approaches play? What systems and processes can help move us towards more just and regenerative futures?

In Development Studies you'll learn diverse theories and practices of development, creative approaches to research, and – if you are doing the one-year Master of Development Studies (MDevStud) – effective approaches to community engagement and social action. The focus through all our degrees is on approaches and practices that can support ethical and intersectional social, political, economic, and environmental transformation.

Many of our courses are informed by relationships with, and contributions from, members of national, regional, and local government agencies, non-governmental organisations, or consulting companies. Frequently, students carry out research of direct relevance to these organisations, contributing useful and timely knowledge and helping their career prospects. Others go overseas to carry out research in Asia, the Pacific or Latin America supported by our strong staff networks in those regions.

Alongside courses, postgraduate students in Geography participate in regular Geography, Environment and Development (GED) Seminar Series, and Social Theory & Spatial Praxis Research Group sessions.

Our programmes are accessible to graduates from a wide range of disciplines and occupations. People with work experience in community, iwi or hapu development and/or international development are strongly encouraged to apply, especially those with a background in Indigenous development or in the Asia Pacific region. Students taking the two-year Master of Science in Development Studies degree are encouraged to spend some time overseas in a developing country carrying out thesis research as part of their degree or to be involved in fieldwork with a marginalised community in Aotearoa New Zealand.

If you want to build a career in aid, humanitarianism, Indigenous development, policy, or in the community and voluntary sector, Development Studies will increase your expertise and help you make a positive contribution. Our linkages with government and aid agencies downtown are particularly helpful to inform future career and research aspirations.

POSTGRADUATE DIPLOMA IN DEVELOPMENT STUDIES (PGDipDevStud)

The Postgraduate Diploma in Development Studies (120pts) comprises 8-12 months of full-time study. It is open to those already in the workforce who wish to augment or update their skill-base, or recent graduates wishing to broaden their undergraduate degree and consists entirely of taught courses.

Entry requirements: The minimum entry qualification is a Bachelor's Degree with an average grade of B or higher in relevant 300-level courses. Relevant professional experience is taken into account.

Programme Requirements:

- Complete 120 points,
- Include these courses:
 - Development Theory: Socio-spatial Thinking in Development Studies (DEVE 515),
 - Development Research Approaches for Just and Regenerative Futures (DEVE 516),
- Complete 30 points from GEOG 400 – 488,
- Complete 30 points from approved 400- or 500-level courses as discussed with the Postgraduate Coordinator.

MASTER OF DEVELOPMENT STUDIES (MDevStud)

The taught Master of Development Studies (180-points) involves 12-months of full-time study. It is designed for those with relevant professional experience who wish to augment or update their knowledge and skill base, or recent graduates wishing to broaden their undergraduate degree. It consists entirely of taught courses.

Entry requirements: The minimum entry qualification is a Bachelor's Degree with an average grade of B+ or higher in relevant 300-level courses. Relevant professional experience is taken into account.

Programme Requirements:

- Complete 180 points,
- Include these courses:
 - Development Theory: Socio-spatial Thinking in Development Studies (DEVE 515),
 - Development Research Approaches for Just and Regenerative Futures (DEVE 516),
 - Community Engagement and Social Action (DEVE 517)
- Include 30 points from GEOG 400 – 488,
- Complete 60 points from approved 400- or 500-level courses as discussed with the Postgraduate Coordinator.

MASTER OF SCIENCE IN DEVELOPMENT STUDIES (MSC) – COURSEWORK AND THESIS

The research-oriented Master of Science in Development Studies (240-points) involves 24 months of full-time study. It is designed for those with a strong interest in independent research which complements or deepens relevant professional experience.

Subject Requirements:

For Part 1:

- Complete 120 points,
- Include these courses:
 - Development Theory: Socio-spatial Thinking in Development Studies (DEVE 515),
 - Development Research Approaches for Just and Regenerative Futures (DEVE 516),
 - Complete 30 points from GEOG 400-488,
 - Complete 30 further points from approved 400- or 500-level courses.

For Part 2:

- Complete a 12-month 120-point Thesis (DEVE 592).

Entry requirements into Part 1 (year one): The minimum entry qualification is a Bachelor's Degree with an average grade of B+ or higher in relevant 300-level courses.

Entry requirement into Part 2 (year two): An average of B+ grades across Part 1 courses is expected. The thesis is a maximum of 40,000 words (120-150 pages) and must be completed within two years following the year of first enrolment.

MASTER OF ARTS IN DEVELOPMENT STUDIES (MA) – BY THESIS

The Master of Arts in Development Studies (120-points) is a 12-month independent thesis.

Entry requirements into the MA: The minimum entry qualification is a Bachelor's Degree with Honours (Upper Second Division) or completion of a PGDipDevStud gaining a B+ average across all courses. The thesis is a maximum of 40,000 words (120-150 pages) and must be completed within two years following the year of first enrolment.

All students are urged to plan their course of study with the Postgraduate Coordinator of Geography and Development Studies, Dr Mirjam Schindler (mirjam.schindler@vuw.ac.nz) before enrolment. Part-time enrolment is possible.

ENVIRONMENTAL SCIENCE

Risks posed by climate change, sea level rise, and stresses on our natural resources highlight the need for environmental scientists and advisers.

Environmental Science is about understanding how humans connect with and change the natural environment and is taught through a range of scientific disciplines such as biology, chemistry, geography, mathematics, and physics.

Learn to assess environmental problems and protect and preserve our natural taonga through your choice of a postgraduate programme in Environmental Science.

Many of New Zealand's primary industries have an undeniable impact on the environment—agriculture, mining, forestry, and fisheries all leave their mark on the planet we live on. Introduced predators pose threats to native wildlife and ecosystems.

As a Master of Environmental Science student, you will spend time on the ground doing fieldwork like monitoring the quality of waterways, soil, or air; gain an understanding of the tools and techniques that can help mitigate human impact on the environment; and learn to analyse complex data sets, draw conclusions, and communicate scientific results to affect policy and regulatory change.

MAKE VALUABLE CONNECTIONS AND GAIN AN EDGE IN YOUR CAREER

Wellington is the ideal place for students to see environmental science in action, being surrounded by a diverse natural environment while also being the home of government. The Master of Environmental Science programme involves close interaction with city and regional councils as well as Zealandia eco-sanctuary, MetService, GNS Science, NIWA and many other organisations.

Environmental Science is an area of strategic opportunity for New Zealand. There is an increasing need for scientifically trained graduates able to influence environmental decision-making, and to facilitate the science–policy–practice nexus throughout government, private and community sectors.

Entry Requirements: Bachelor's degree with at least a B average in a relevant subject.

POSTGRADUATE CERTIFICATE AND DIPLOMA

If you complete Part 1 of the Master of Environmental Science and do not continue to Part 2, you will be awarded a Postgraduate Diploma in Science (Environmental Science).

If you complete two core courses and one further course, you can be awarded a Postgraduate Certificate in Science (Environmental Science).

MASTER OF ENVIRONMENTAL SCIENCE (MEnvSc)

The Master of Environmental Science is a 180-point, one-year programme, which includes either an extended research project or a placement with an employer and an applied research project.

Programme Requirements:

For Part 1:

- Complete 180 points,
- Include the following courses:
 - Advanced Topic in Environmental Science (ENSC 401),

- Perspectives in Environmental Science in Aotearoa New Zealand (ENSC 402),
- Environmental Science Research Essay (ENSC 485),
- Complete 60 further points from approved 400- or 500-level courses.

For Part 2:

- Complete either:
 - Environmental Science Research Project (ENSC 510), **or**
 - Environmental Science Placement and Project (ENSC 511).

MASTER OF SCIENCE IN ENVIRONMENTAL SCIENCE BY COURSEWORK AND THESIS (MSc)

The Master of Science in Environmental Science is a 240-point, two-year programme which includes more in-depth research in the form of a thesis.

Part 1 of the MSc in Environmental Science is very similar to Part 1 of the MEnvSc, with the addition of ESCI 580, a research preparation course.

If you complete Part 1 of the MEnvSc and then find you would prefer to pursue in-depth research, you can transfer to the MSc. And likewise, if you complete Part 1 of the MSc and find you would prefer to undertake the research project or placement, you can transfer to the MEnvSc.

Programme Requirements:

- Complete 240 points,
- Include the following courses in Part 1:
 - Advanced Topic in Environmental Science (ENSC 401),
 - Perspectives in Environmental Science in Aotearoa New Zealand (ENSC 402),
 - Environmental Science Research Essay (ENSC 485),
 - Research Preparation (ESCI 580),
 - Further 45 points from: BIOL401-431, CCSP401, CCSP402, CHEM421-423, ENSC410-421, ENVI520, ESCI401-488, GPHS 441-448, PHYG413-423, PHYS415-447, STAT431-452,
- In Part 2 complete a 120-point Thesis (ENSC 591)

All students are urged to plan their course of study with the Postgraduate Coordinator of Environmental Science Dr Andrew Rees (andrew.rees@vuw.ac.nz) before enrolment. Part-time enrolment is possible.

ENVIRONMENTAL STUDIES

At their core, all environmental issues are social issues. Social science approaches allow us to understand the underlying causes and develop solutions to tricky environmental problems. Environmental Studies draws together environmental psychology, science and technology studies, critical theory, Mātauranga Māori, policy, and environmental ethics to help you learn how to create change.

The Environmental Studies team are passionate about what we do, enjoy teaching, and work to support Environmental Studies students to develop the skills needed to make a difference. We are award-winning researchers, and we bring our research and community connections into our teaching.

Our capital city location facilitates work with government departments such as the Ministry for the Environment, as well as international agencies, industries, regional and local government, iwi, and environmental organisations. The School has particularly strong links to environmental policy agencies based in Wellington and, within the university, the Environmental Studies programme maintains close links with the New Zealand Climate Change Research Institute.

POSTGRADUATE DIPLOMA IN ENVIRONMENTAL STUDIES

The Postgraduate Diploma in Environmental Studies (PGDipEnvStud) is a full-time programme taken over two trimesters (1 and 2), without a thesis, or can be completed part-time.

Degree Requirements:

- Complete 120 points of coursework
- Include the following courses:
 - Environment Management (ENVI 520),
 - Research Methods for Environmental Studies (ENVI 521),
 - Further course worth 90 points from: ENVI 501 – 511, ENVI 513 – 579, up to 30 points of there may be replaced by approved 400- or 500-level courses as discussed with the Postgraduate Coordinator.

Entry requirements: A Bachelor's degree in a relevant subject with a B average, or relevant work experience, and in discussion with the Postgraduate Coordinator.

MASTER OF ENVIRONMENTAL STUDIES

The first year of the Master of Environmental Studies (MEnvStud) is the same as the Postgraduate Diploma in Environmental Studies, but in the second year you will have the opportunity to work closely with at least one staff member to deeply research a topic of your interest. Through this programme, you will have the chance to develop excellent research skills that will be transferable across careers and civic involvement. Our Master's students often work closely with communities to answer questions that are relevant to people working on the trickiest environmental problems.

The MEnvStud course of study formally consists of:

- **Part 1:** as with the Postgraduate Diploma course of study set out above
- **Part 2:** ENVI 591 (120-point thesis), OR ENVI 593 (90-point thesis), combined with ENVI 512 Practicum or, for those with relevant work experience, a 30-point course chosen from the courses listed for Part 1 above.

Note:

- Enrolment in ENVI 593 or ENVI 591 will be for 12-months from the date of enrolment, or 24-months if part-time. Practical work is carried out in approved organisations under the personal supervision of practitioners approved by the Postgraduate Coordinator
- Entry to Part 2 requires the acceptance of a thesis proposal by the Postgraduate Coordinator and either a B+ average from Part 1 courses or special permission from the coordinator. You are strongly advised to tailor your research proposal to the interests and expertise of staff in the programme.

All students are urged to plan their course of study with the Postgraduate Coordinators for Environment Studies, Dr Billy van Uitregt (billy.vanuitgregt@vuw.ac.nz) before enrolment. Part-time enrolment is possible.

GEOGRAPHY

Geography at Te Herenga Waka Victoria University of Wellington is concerned with the spatial politics and practices of people at various scales, as well as the people's identities and relationships with places, landscapes, resources and environments. We have key strengths in applied and action-oriented research, which informs policy and planning, as well as social and environmental justice.

The postgraduate programme was significantly revamped in 2023 and now has two exciting new core courses: GEOG 511 (Socio-spatial Thinking for Human Geography) and GEOG 512 (Geographic Research Approaches for Just and Regenerative Futures).

In addition, we have a range of option courses which focus on:

- Urban geography, health and Geographic Information Science, including quantitative skills (GEOG 417 and GEOG 415)
- Geographies of mobilities and difference including qualitative and creative approaches (GEOG 408 and GEOG 418)
- Geographies of climate, landscape and hydrological change including field skills (PHYG 413, PHYG 419, PHYG 420, PHYG 423 – see Physical Geography later in this booklet)

Students can also carry out independent research with support of an academic supervisor (GEOG 489 or PHYG 489) or devise a course of their own making with an academic supervisor (GEOG 440 or PHYG 440).

Alongside core and option courses, students can take electives from a wide range of courses within the School of Geography, Environment and Earth Sciences associated with Development Studies, Environmental Studies, Environmental Science, Climate Change Science and Policy and Earth Sciences. Permissions may be required from course coordinators depending on students' degrees and prior experience.

Many of our courses are informed by relationships with, and contributions from, members of national, regional, and local government agencies, non-governmental organisations, or consulting companies. Frequently, students carry out research of direct relevance to these organisations, contributing useful and timely knowledge and helping their career prospects. Others go overseas to carry out research in Asia, the Pacific or Latin America supported by our strong staff networks in those regions.

Alongside courses, postgraduate students in Geography participate in regular Geography, Environment and Development (GED) Seminar Series, Social Theory & Spatial Praxis Research Group sessions and School of Geography, Environment and Earth Sciences (SGEES) Research Seminars.

POSTGRADUATE CERTIFICATE IN SCIENCE IN GEOGRAPHY

The PGCertSc requires 60 points of postgraduate study and can be completed in one trimester or part time over two years. The Certificate can be converted into a Postgraduate Diploma in Science with a further 60 points of 400-level approved courses.

Programme Requirements:

- Complete 60 points,
- Courses include:
 - Socio-spatial Thinking for Human Geography (GEOG 511),
 - 30 points from: GEOG 401 – 488 and PHYG 401 – 488.

POSTGRADUATE DIPLOMA IN ARTS IN GEOGRAPHY

The Postgraduate Diploma in Arts (PGDipArts) offered by the Faculty of Humanities and Social Sciences is intended primarily for students who are interested in doing advanced study in Geography but are not intending to complete the GEOG 489 Research Project.

Entry requirements: A Bachelor's degree with a major in Geography, including GEOG 324 and GEOG 325 plus 40 points of approved courses. The diploma normally requires at least two trimesters of study and should be completed within four years of first enrolling.

Subject Requirements:

- Complete 120 points,
- Include courses from:
 - Socio-spatial thinking for Human Geography (GEOG 511),
 - Geographic Research Approaches for Just and Regenerative Futures (GEOG 512),
 - 30-points from: GEOG 401 – 488, PHYG 401 – 488,
 - 30 further points from 400- or 500- level ANTH, DEVE, EDUC, ENVI, ESCI, GEOG, HLWB, MAOR, PASI, PHYG, PLAN, POLS, PSYC, SOSC, TOUR.

POSTGRADUATE DIPLOMA IN SCIENCE IN GEOGRAPHY

The Postgraduate Diploma in Science (PGDipSc) in Geography can be completed in two trimesters or part-time over four years. Good academic grades in the PGDipSc may allow direct entry into MSc Part 2 (thesis).

Entry requirements: An undergraduate degree with an average grade of B or higher in relevant 300-level courses.

Subject Requirements:

- Complete 120 points,
- Include courses from:
 - Socio-spatial Thinking in Human Geography (GEOG 511),
 - Geographic Research Approaches for Just and Regenerative Futures (GEOG 512),
 - 30 points from: GEOG 401 – 488, PHYG 401 – 488,
 - 30 further points from 400- or 500-level ANTH, CCSP, DEVE, EDUC, ENVI, ESCI, GEOG, HLWB, MAOR, PASI, PHYG, PLAN, POLS, PSYC, SOSC, TOUR.

BA OR BSC WITH HONOURS IN GEOGRAPHY

Entry requirement: A Bachelor's degree with a major in Geography including GEOG 324 and GEOG 325 plus 40 points of approved courses from GEOG 312-323, ideally with an average grade of B+ or higher in these courses. Entry into Geography Honours from another undergraduate major may be granted.

Students wishing to enrol in Honours in Geography must contact the Geography Postgraduate Coordinator by 10th December prior to the year of intended enrolment stating their desire to enrol and the names of academic staff members approached regarding supervision of potential research

projects. Early application is recommended although approval to enrol in Honours may be granted until 10 January of the year of study.

The courses of study for a BSc (Hons) or BA (Hons) in Geography consists of:

- Research Project (GEOG 489),
- Socio-spatial Thinking in Human Geography (GEOG 511),
- 30 points from: GEOG 401 – 488, PHYG 41 – 488,
- 30 further approved points from 400- or 500-level ANTH, CCSP, DEVE, EDUC, ENVI, ESCI, GEOG, HLWB, MAOR, PASI, PHYG, PLAN, POLS, PSYC, SOSC, TOUR.

***Note:** Up to 60 points can be from other disciplines with approval from the Geography Postgraduate Coordinator. Some prerequisites may be required.

You are advised to select the courses you wish to take early and begin reading over the summer prior to enrolment. For GEOG 489 (Research Project), you should identify a possible topic as soon as possible and begin background reading, thinking or fieldwork as advised by a member of staff.

MASTER OF SCIENCE IN GEOGRAPHY (MSc) – COURSEWORK AND THESIS

Build on your undergraduate degree and take an in-depth look at economic, urban, social, cultural or population geography. The research-orientated Master of Science in Geography (240-points) involves 24 months of full-time study. It is designed for those with a strong interest in independent research with complements or deepens relevant professional experience.

Subject Requirements:

A MSc in Geography consists of two parts:

For Part 1:

- Complete 120 points,
- Include these courses:
 - Socio-spatial Thinking in Human Geography (GEOG 511),
 - Geographic Research Approaches for Just and Regenerative Futures (GEOG 512),
 - 30 points from: GEOG 401 – 488, PHYG 401 – 488,
 - 30 further approved points from 400- or 500-level ANTH, CCSP, DEVE, EDUC, ENVI, ESCI, GEOG, HLWB, MAOR, PASI, PHYG, PLAN, POLS, PSYC, SOSC, TOUR.

For Part 2:

- Complete a 12-month 120-point Thesis (GEOG 591).

Entry requirements into Part 1: Completion of an undergraduate degree or relevant graduate or postgraduate diploma, including 60 points from GEOG 301-399.

Entry requirements into Part 2: B+ in your Part 1 courses. You may also enter Part 2 with an Honours degree or postgraduate diploma.

The MSc may be awarded with Honours if both Parts 1 and 2 of the degree are completed within two and a half years of first enrolling for the degree. A candidate who enrolls in Part 2 of the Master's programme, after completing a relevant Honours or Postgraduate diploma may have their Master's awarded with distinction or merit.

MASTER OF ARTS BY THESIS IN GEOGRAPHY

Entry Requirements: To enrol in a Master of Arts (MA) in Geography you must have a BA(Hons) degree with a First or Second Class Honours in Geography, or related subject (with permission of the Associate Dean). Prospective students must also obtain a recommendation by a potential thesis supervisor before enrolment.

The course of study for an MA in Geography is GEOG 591 (thesis).

All students are urged to plan their course of study with the Postgraduate Coordinator for Geography, Dr Mirjam Schindler (mirjam.schindler@vuw.ac.nz) before enrolment. Part-time enrolment is possible.

PHYSICAL GEOGRAPHY

Physical Geography is the branch of natural science that deals with understanding the processes and patterns in the physical environment. At the heart of this discipline is the concept of Earth Systems Science, in which the Earth is made up of the inter-connected realms of the atmosphere, biosphere and geosphere.

The core areas within Physical Geography at Victoria University are geomorphology, climatology, hydrology, glaciology, and Quaternary environmental change, and these are linked both with scientific disciplines such as Geology, Geophysics, Biology, Physics, Chemistry, as well as with the Social Sciences, to inform current and future generations of the critical importance of human-environment relations to life on Earth. We emphasise interdisciplinary learning, research and the development of key skills in careful field observation, data measurement and computer modelling. Such skills are increasingly being utilised by physical science practitioners in research, education and in the private sector.

MASTER OF SCIENCE BY THESIS IN PHYSICAL GEOGRAPHY (MSc)

A MSc in Physical Geography involves a full-time research project, leading to a thesis (PHYG 591). Full-time enrolment usually is usually one year. Part-time study may be undertaken with permission from the Head of School.

Entry requirements: To enrol into a MSc by thesis in Physical Geography you must hold either a Bachelor of Science degree with Honours or relevant postgraduate diploma.

The MSc may be awarded with Honours if both Parts 1 and 2 of the degree are completed within two and a half years of first enrolling for the degree. A candidate who enrolls in Part 2 of the Master's programme, after completing a relevant Honours or Postgraduate diploma may have their Master's awarded with distinction or merit. To be eligible, a full-time candidate shall complete all work for Part 2 within 18 months from the date of first enrolment in Part 2.

All students are urged to plan their course of study with the Postgraduate Coordinators for Development Studies and Human Geography, Dr Mirjam Schindler (mirjam.schindler@vuw.ac.nz) before enrolment. Part-time enrolment is possible.

GEOLOGY

Geology is the study of the dynamic history and processes of the Earth. Topics that we cover under these areas include the Earth's internal structure, plate tectonics, earthquakes, mountain building, volcanic eruptions, the origin and evolution of life, extinction events, the formation of sedimentary basins, climate and sea-level changes, glaciation and landscape evolution, and the origin and conservation of the Earth's natural resources, including minerals, fossil fuels, soils, and water.

Understanding geological processes is becoming increasingly important for those concerned with the extraction and/or preservation of the Earth's natural resources, the evaluation of natural hazards, anticipating and mitigating the social and environmental effects of global changes, and undertaking environmental and resource planning and monitoring.

POSTGRADUATE CERTIFICATE IN SCIENCE IN GEOLOGY (PGCertSc)

The PGCertSc may appeal to students seeking a postgraduate qualification that does not involve a research project, or for those who are not able to meet the entry requirements for the BSc(Hons) or MSc Part 1. The PGCertSc in Geology requires 60 points of postgraduate study and can be completed in one trimester or part time (up to two years). It can be converted into a Postgraduate Diploma in Science with a further 60 points of 400-level approved courses.

Entry Requirements: A Bachelor's degree, and have completed ESCI 341, ESCI 342, and a further courses worth 60 points from ESCI 300 – 399.

Subject Requirements:

- Complete 60 points,
- Include courses:
 - ESCI 401 – 489,
 - Research Preparation (ESCI 580).

POSTGRADUATE DIPLOMA IN SCIENCE IN GEOLOGY (PGDipSc)

The PGDipSc in Geology is made up of 120 points at 400 and 500-level and does not require a research project, although a project may be included where appropriate. The minimum entry qualification is an undergraduate degree with an average grade of B or higher in relevant 300-level courses. The PGDipSc can be completed in two trimesters or part time (up to four years). Good academic grades in the PGDipSc may allow direct entry into an MSc Part 2 (thesis).

Entry Requirements: A Bachelor's degree, and have completed ESCI 341, ESCI 342, and a further courses worth 60 points from ESCI 300 – 399.

Subject Requirements:

- Complete 120 points,
- Include courses:
 - Active Earth (ESCI 451),
 - Earth History (ESCI 452),
 - Earth Materials and Resources (ESCI 453),

- Courses worth 75 further points from ESCI 401 – 488, ESCI 580.

With the approval of the Postgraduate Coordinator up to 30 points of appropriate 400-level courses from elsewhere in the School or Science Faculty can be included in the programme of study for the PGDipSc (e.g. BIOL, CHEM, ENSC, GPHS, MATH, PHYG or PHYS).

BACHELOR OF SCIENCE WITH HONOURS IN GEOLOGY (BSc(Hons))

An Honours degree follows an undergraduate degree and provides students with depth in a specialised field. It could also follow on from a Graduate Diploma in Science (GDipSc) if necessary requirements have been met. A BSc(Hons), is a one-year full-time programme consisting of 90 points of coursework and a research project (GEOL 489). It may also be undertaken part-time with approval. It can also lead directly to PhD study.

Entry requirements: A BSc in an appropriate field with an average grade of B+ or higher in relevant 300-level courses. If you are intending to undertake a research project, you should identify a topic and supervisor as soon as possible and begin background reading, thinking or fieldwork as advised by the relevant member of staff.

If you wish to enrol in a BSc with Honours in Geology, please contact the Earth Sciences Postgraduate Coordinator, stating your desire to enrol in Honours and the names of School staff you have approached regarding potential research projects before the end of Trimester 2, prior to the year you wish to study.

Subject Requirements:

- Complete 120 points,
- Include courses:
 - Active Earth (ESCI 451),
 - Earth History (ESCI 452),
 - Earth Materials and Resources (ESCI 453),
 - Research Project (GEOL 489),
- Courses worth 45 further points from: ESCI 401 – 488.

With the approval of the Postgraduate Coordinator up to 30 points of appropriate 400-level courses from elsewhere in the School or Science Faculty can be included in the programme of study for the BSc (Hons) (e.g. BIOL, CHEM, ENSC, GPHS, MATH, PHYG or PHYS).

MASTER OF SCIENCE BY COURSEWORK AND THESIS IN GEOLOGY

A MSc consists of two parts, Part 1 (the first year) involves coursework and a research preparation course. Part 2 (the second year) is a full-time research project, leading to a thesis. Full-time enrolment is usually two years. Part-time study may be undertaken with permission from the Head of School.

Entry requirements: Completion of an undergraduate degree or relevant graduate diploma, including 80 points from ESCI 301–349 (including ESCI 341 and 342) or their equivalent at another University. An average grade of B+ is normally required for entry to Part 1. Applicants who do not meet this level may enrol for the first year in the PGDipSc and transfer to Part 2 subject to attainment of suitable grades and having a project and supervisor(s) arranged.

A MSc in Geography consists of two parts:

Subject Requirements:

For Part 1:

- Complete 120 points,
- Include these courses:
 - Active Earth (ESCI 451),
 - Earth History (ESCI 452),
 - Earth Materials and Resources (ESCI 453),
 - Research Preparation (ESCI 580),
 - A further 60 points from: ESCI 401 – 488.

For Part 2

- Complete a 12-month 120-point Thesis (GEOL 591).

With the approval of the Postgraduate Coordinator, up to 30 points of appropriate 400-level courses from elsewhere in the School or Science Faculty can be included in the programme of study in Part 1 (e.g. BIOL, CHEM, ENSC, GPHS, MATH, PHYG or PHYS).

The MSc may be awarded with Honours if both Parts 1 and 2 of the degree are completed within two and a half years of first enrolling for the degree. A candidate who enrolls in Part 2 of the Master's programme, after completing a relevant Honours or Postgraduate diploma may have their Master's awarded with distinction or merit. To be eligible, a full-time candidate shall complete all work for Part 2 within 18 months from the date of first enrolment in Part 2.

All students are urged to plan their course of study with the Postgraduate Coordinators for Geology, Prof Colin Wilson (colin.wilson@vuw.ac.nz) before enrolment. Part-time enrolment is possible.

GEOFYSICS

Geophysics is the study of the structure, properties and processes of the Earth using tools from physics and mathematics.

Geophysics at Victoria is grouped into two themes—Solid Earth Geophysics and Meteorology. Students interested in the Geophysics programme should select a research topic in consultation with the staff member who will supervise the project.

Geophysics research interests include meteorology and forecasting methodologies, geomagnetism, magnetotellurics and palaeomagnetism, earthquake seismology and earthquake recurrence, fault mechanics and the state of stress in the Earth, active source seismology and tectonics, volcano geophysics, anisotropy of the crust and mantle and lithospheric structure, glacial geophysics, and geodesy.

POSTGRADUATE CERTIFICATE IN SCIENCE IN GEOFYSICS (PGCertSc)

The PGCertSc is offered in all MSc subjects. It may appeal to students seeking a postgraduate coursework qualification that does not involve a research project. The PGCertSc also provides an opportunity for those students who are not able to meet the entry requirements for the BSc(Hons) or MSc Part 1.

The PGCertSc requires 60 points of postgraduate study and can be completed in one trimester or part time over two years. It can be converted into a Postgraduate Diploma in Science with a further 60 points of 400-level approved courses.

Subject Requirements:

- Complete 60 points,
- Include courses:
 - One of: ESCI 411, ESCI 451, GPHS 441, or GPHS 420,
 - 45 further points from: ESCI 401 – 488, GPHS 401 – 488.

POSTGRADUATE DIPLOMA IN SCIENCE IN GEOFYSICS (PGDipSc)

The PGDipSc is made up of 120 points at 400 and 500-level and does not require a research project, although a project may be included where appropriate. The minimum entry qualification is an undergraduate degree with an average grade of B or higher in relevant 300-level courses. The PGDipSc can be completed in two trimesters or part time over four years. Good academic grades in the PGDipSc may allow direct entry into and MSc Part 2 (thesis).

Subject Requirements:

- Complete 120 points,
- Include courses:
 - One of the following: GPHS 420, or ESCI 451 and one of ESCI 411 or GPHS 441,
 - 75 or 90 further points from: ESCI 401 – 488, GPHS 401 – 488.

POSTGRADUATE DIPLOMA IN METEOROLOGY (PGDipMet)

The PGDipMet is made up of 120 points at 400- and 500-level. The PGDipMet can be completed in two trimesters or part-time.

Entry Requirements: Bachelor's degree or equivalent Geophysics, Mathematics, Physics of similar subject with at least a B+ average grade.

Programme Requirements:

- Complete 120 points,
- Include courses:
 - Five courses worth 75 points from GPHS 420 – 425,
 - One further course worth 15 points from: GPHS 420 – 431 or a course approved by the Head of School,
 - One course worth 30 points from GPHS 520 – 589.

BACHELOR OF SCIENCE WITH HONOURS IN GEOPHYSICS - (BSc(Hons))

An Honours degree follows an undergraduate degree such as a BSc and is designed to provide students with depth in a specialised field.

A BSc(Hons) in Geophysics is a stand-alone one-year full-time programme involving 90 points of coursework and a research project (GPHS 489). Part-time enrolment may be possible with permission from the Head of School.

Entry requirements: The minimum entry requirement is a BSc in an appropriate field with an average grade of B+ or higher in relevant 300-level courses. A research project is an important part of the year's work and provides practical training in research methods, evaluation of published research and experience of the scientific process.

If you wish to enrol in Geophysics Honour programme, please contact the Geophysics Postgraduate Coordinator stating both your desire to enrol in Honours and the names of School staff you have approached regarding potential research projects before the end of Trimester 2 prior to the year you wish to study. You are advised to select the courses you wish to take early in consultation with your supervisor and begin reading over the summer prior to enrolment.

Subject Requirements:

- Complete 120 points
- Include courses:
 - Research Project (GPHS 489),
 - One of the following: GPHS 420 or ESCI 451 and one of ESCI 411 or GPHS 441,
 - A further 60 or 75 points from: ESCI 401 – 488, GPHS 401 – 488.

MASTER OF SCIENCE BY COURSEWORK AND THESIS IN GEOPHYSICS

A MSc consists of two parts: Part 1 involves coursework of 120 points from the BSc(Hons) or other schedules, and a research preparation course (ESCI 580). Part 2 is a full-time research project, leading to a thesis. Full time enrolment is usually two years. Part-time study may be undertaken with permission from the Head of School.

Entry into the MSc for Geophysics requires completion of an undergraduate degree or relevant graduate or postgraduate diploma, including 60 points of approved courses from 300-level ESCI, MATH or PHYS. A grade of B+ or better is advised.

Subject Requirements:

For Part 1:

- Complete 120 points
- Include courses:
 - Research Preparation (ESCI 580),
 - One of the following: GPHS 420 or ESCI 451 and one of ESCI 411 or GPHS 441,
 - A further 75 or 90 points from: GPHS 401 – 488, ESCI 401 – 488.

For Part 2:

- Complete a 12-month 120-point Thesis (GPHS 591).

Students must receive a grade average of B+ in your Part 1 courses to continue to complete Part 2. You may also enter Part 2 with suitable grades in an Honours degree or postgraduate diploma.

The MSc may be awarded with Honours if grades are high and if both Parts 1 and 2 of the degree are completed within two and a half years of first enrolling for the degree. A candidate who enrolls in Part 2 of the Master's programme, after completing a relevant Honours or Postgraduate diploma may have their Master's awarded with distinction or merit.

Recommended course combinations for areas of focus within Part 1 of the MSc Geophysics:

Solid Earth: ESCI 580, ESCI 411, 451, GPHS 441, 445 and 446, and 30 approved points from (400-level GPHS, and ESCI courses). With the approval of the Postgraduate Coordinator these may include appropriate MATH/PHYS or GEOG 400-level courses.

Meteorology: ESCI 580, GPHS 420, two courses from GPHS 421–426 plus 60 approved points from (400-level GPHS, PHYG and ESCI courses). With the approval of the Postgraduate Coordinator these may include appropriate MATH/PHYS 400-level courses.

MASTER OF METEOROLOGY (MMet)

The course of study for the MMet consists of courses worth a total of 180 points, including a project (30 points). Prerequisites may apply for some courses.

Programme Requirements:

- Complete 180 points,
- Include six courses worth 90 points:
 - Introduction to Dynamical Meteorology (GPHS 420),
 - Mid-latitude Weather Systems (GPHS 421),

- Radiation and Thermodynamics for Meteorology (GPHS 422),
- Cloud Physics and Boundary Layer Meteorology (GPHS 423),
- Numerical Weather Prediction (GPHS 425),
- One further course worth 15 points from: GPHS 420 – 432 or a course approved by the Head of School.
- Include three courses worth 90 points:
 - Professional Weather Observing, Analysis and Synoptic Diagnosis (GPHS 520),
 - Professional Weather Diagnosis and Forecasting (GPHS 521),
 - Project (GPHS 589).

All students are urged to plan their course of study with the Postgraduate Coordinators for Geophysics, Prof Colin Wilson (colin.wilson@vuw.ac.nz) before enrolment. Part-time enrolment is possible.

For more information regarding the postgraduate Meteorology programmes, please contact the Postgraduate Coordinator, Dr Kyle Clem (kyle.clem@vuw.ac.nz).

400 – 500 LEVEL COURSE DESCRIPTIONS

These are the planned courses for 2025. However, the university may cancel courses due to insufficient resources, student demand, or other unforeseen circumstances.

Check online for up-to-date information, as well as more detailed course information:

<https://www.wgtn.ac.nz/study/programmes-courses/courses>

CLIMATE CHANGE SCIENCE AND POLICY COURSES

Course Code	Course Registration Number	Course Name	Points	Trimester Available
CCSP401	CRN 30159 CRN 37423	PHYSICAL BASIS OF CLIMATE CHANGE	15 PTS	1/3

Course Coordinator: Prof James Renwick

Learn about the physical climate science dimensions of climate change, including concepts of climate forcing, feedback and response, and the relationship between emissions and concentrations.

CCSP 402	CRN 30160 CRN 37424	CLIMATE CHANGE IMPACTS AND ADAPTATION	15 PTS	1/3
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Course Coordinator: Prof James Renwick

Gain a high-level understanding of climate change impacts and adaptation at global, national, and local scales. Climate prediction models will be used to examine social and biophysical vulnerabilities to environmental change, and explore policies and measures to minimise impacts, and the potential for adaptation at different scales.

CCSP 403	CRN 30161 CRN 37426	INTERNATIONAL CLIMATE CHANGE POLICY	15 PTS	2/3
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Course Coordinator: Dr Cathrine Dyer

Consider international climate policy, drawing on policy-relevant physical climate change science, economics, game theory, ethics, and international relations. Learn about the history, theory, and prospects of landmark efforts to govern climate change, domestically and internationally.

CCSP 404	CRN 30162 CRN 37427	CLIMATE CHANGE MITIGATION	15 PTS	2/3
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Course Coordinator: TBD

An examination of the domestic and international policy issues surrounding climate change mitigation, including why mitigation represents a challenging social and economic as well as environmental

problem; differing perspectives on policy solutions to the mitigation challenge; linkages with international policy; policies and behaviour change; the roles of relevant institutions; sectoral considerations and policy measures; policy communication, and the politics of mitigation strategies.

CCSP 408	CRN 36128	EMERGING TOPICS IN CLIMATE CHANGE IN AOTEAROA NEW ZEALAND AND THE PACIFIC	15 PTS	1/3
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Course Coordinator: Dr Cathrine Dyer

An applied overview of the practical aspects of addressing climate change in relevant government agencies and organisations in Aotearoa New Zealand and the wider Pacific. This course is delivered through public research seminars from guest speakers in government, industry, and academic.

CCSP 510	CRN 30163 CRN 37428	RESEARCH ESSAY	60 PTS	3/3
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Course Coordinator: Prof James Renwick

This major research project gives the student scope to investigate a climate related topic of interest, and centres on writing and presenting an extended research essay of up to 15,000 words.

CCSP 511	CRN 30164	PRACTICUM	60 PTS	3/3
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Course Coordinator: Prof James Renwick

Practicum Placement and Project: The placement is a period of work with an employer in the field of climate change science, policy or management including the completion of a short research project.

DEVELOPMENT STUDIES COURSES

DEVE 515	CRN 36048	DEVELOPMENT THEORY: SOCIO-SPATIAL THINKING IN DEVELOPMENT STUDIES	30 PTS	1/3
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Course Coordinator: Prof Katharine McKinnon

Restrictions: GEOG 511

This course introduces students to forms of socio-spatial thinking that inform development theories and help us to understand inequalities. The course involves a critical examination of key concepts, including power, agency, justice, community and wellbeing in development contexts. We consider mainstream theories informing international aid and geopolitical architecture as well as theories associated with forms of regenerative thinking. These include consideration of approaches such as *buen vivir*, *Tri Hita Karana*, Pacific Theory and Buddhism, as well as Kaupapa Māori responses to the legacies of colonisation and how the implications of te Tiriti obligations may be in informing

development within in Aotearoa New Zealand. Students will be expected to demonstrate an ability to read a range of literature both critically and independently and to show an ability to analyse and critique theories of development.

Co-taught with GEOG 511

DEVE 516	CRN 36049	DEVELOPMENT RESEARCH APPROACHES FOR JUST AND REGENERATIVE FUTURES	30 PTS	2/3
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Course Coordinator: Dr Marcela Palomino-Schalscha

This course introduces students to the politics and practices of conducting research which aims to inform just and regenerative futures. The course prepares students going on to a Master's thesis in Development Studies or wishing to carry out a research project in a range of community or employment paces. It specifically grapples with researching in intercultural and development contexts.

Co-taught with GEOG 512, ENVI 521 and GEOG 580.

DEVE 517	CRN 36050	COMMUNITY ENGAGEMENT AND SOCIAL ACTION	30 PTS	3/3
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Course Coordinator: Dr Polly Stupples

Restrictions: DEVE 512, DEVE 513

This course builds students' capacities in the analysis and application of professional and creative tools to engage with diverse communities and organisations working towards social action in particular contexts. It supports students to engage with regenerative practices that respond to multiple and compounding contemporary crises.

Students enrolled in the MDevStud have priority for places in this course.

DEVE 540	CRN 17449 CRN 27291 CRN 17308 CRN 19973	DIRECTED INDIVIDUAL STUDY	15 PTS	1/3 1+2/3 2/3 3/3
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Course Coordinator: See Postgraduate Coordinator Dr Mirjam Schindler

This course provides students with the option of following a directed individual study, with the approval of the Head of School, and under the supervision of an academic staff member with appropriate expertise. In some cases, DEVE 540 may also be used to take a modified version of one of the undergraduate courses: GEOG 312, GEOG 322 or GEOG 316.

DEVE 560	CRN 13963 CRN 10252 CRN 11346 CRN 23174	SPECIAL TOPIC	30 PTS	1/3 1+2/3 2/3 2+3/3
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Postgraduate Coordinator: Dr Mirjam Schindler

This course provides the opportunity for a student to examine a particular aspect of development in more depth according to their own needs and interests. The student negotiates the topic with the Director of Development Studies or designated supervisor and together they devise a course of study and related assessment. In some cases, DEVE 560 may also be used to take a modified version of one of the undergraduate courses: GEOG 312, GEOG 322 or GEOG 316.

DEVE 592	CRN 11761	THESIS	120 PTS	
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Postgraduate Coordinator: Dr Mirjam Schindler

This research-based thesis provides experience in research design, planning, implementation, analysis and representation with the assistance of an academic supervisor.

It requires students to develop a research question to explore based on a gap or problem identified in previously published sources, or that has grown out of previous professional experience. The student then designs a project and carries out fieldwork and analysis of data to arrive at some answers, conclusions and recommendations for policy, practice and/or further research.

Each student is encouraged to consider their topic of interest and discuss it with Prof Kindon and other staff during the first year of their enrolment. A formal proposal is required to be submitted as part of the DEVE 516 coursework.

The proposal will be considered by staff before approval is given to proceed and supervision is finalised. The proposal is also necessary to support funding and ethics approval application.

The final thesis produced should be between 120 and 150 pages in length (maximum of 40,000 words).

ENVIRONMENTAL SCIENCE COURSES

ENSC 401	CRN 31068	ADVANCED ENVIRONMENTAL SCIENCE	30 PTS	1/3
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Course Coordinator: Dr Andrew Rees

This course develops numerical literacy in environmental science. Students will assess methodologies from published literature and apply relevant techniques to collected data, developing scientific, analytical and mathematical skills that can be extrapolated to key environmental problems. Concepts are put into practice using the R computing environment.

ENSC 402	CRN 31069 CRN 37433	PERSPECTIVES IN ENVIRONMENTAL SCIENCE IN AOTEAROA NEW ZEALAND	15 PTS	1/3
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Course Coordinator: Dr Mike Joy

The Earth is facing escalating pressures on the environment. In this interdisciplinary science course, students will explore contemporary and controversial environmental issues facing New Zealand. The course will be lecture-and seminar- based, with external guest-speakers offering their perspectives on the state of the environment in New Zealand. Students will gain experience and skills of engagement with various stakeholders.

ENSC 410	CRN 31070	ENVIRONMENTAL SCIENCE INTERNSHIP	15 PTS	2/3
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Course Coordinator: TBD

This course enables students to gain professional work experience in environmental science. Each student is supervised by a host organisation involved in environmental science research or applications in the public or private sectors. The placement allows students to further develop teamwork and communication skills, with production of a report and presentation.

ENSC 485	CRN 31073 CRN 37434	ENVIRONMENTAL SCIENCE RESEARCH ESSAY	15 PTS	2/3
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Course Coordinator: A/Prof Dan Sinclair

This course develops skills in research and writing in Environmental Science. A review essay will be written on a relevant topic in environmental science, with the supervision of a Victoria academic or an expert from a collaborative institute. The review is expected to meet the conventions of a scholarly outlet. The review findings will be summarised in a blog, suitable for non-experts.

ENSC 510	CRN 31074	ENVIRONMENTAL SCIENCE RESEARCH PROJECT	60 PTS	3/3
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Course Coordinator: TBD

This major research project gives the student scope to investigate an environment-related topic of particular interest, and centres on writing and presenting an extended research essay of up to 15,000 words. The investigation will relate to an independent research question concerning an aspect of environmental science. It will consist of a review of the literature, some primary research and analysis, and the leading of a seminar to share understanding of the project's outcomes with fellow students.

ENSC 511	CRN 30175	ENVIRONMENTAL SCIENCE PLACEMENT AND PROJECT	60 PTS	3/3
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Course Coordinator: A/Prof Monica Handler

Prerequisites: ENSC 485

Restrictions: ENSC 410, ENSC 510

This course provides both professional development and research training. It has three components: a placement, an applied research project, and presentation of a seminar. The placement is a period of work with an employer in the field of environmental science. The project aims to research a particular aspect of the work undertaken to enrich the student's knowledge of the organisation's work. The seminar aims to share understanding among fellow students of the role of the organisation.

ENSC591	CRN 31140	THESIS IN ENVIRONMENTAL SCIENCE	120 points	
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Course Coordinator: Dr Andrew Rees

ENVIRONMENTAL STUDIES COURSES

ENVI 512	CRN 2074 CRN 17086 CRN 17087	PRACTICUM	30 PTS	1+2/3 2+3/3 3+1/3
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Course Coordinator: Dr Amanda Thomas

This is a supervised placement during Part 2 Masters (not available for the PGDip), in a specialised field of environmental or resource management, focusing on practice in a particular organisation or agency. The placement is negotiated in consultation with Amanda and organisation. The placement requires 200 hours of work, often unpaid (except in exceptional circumstances), and can be carried out over an extended period during the trimester or in more concentrated blocks during the non-teaching breaks. ENVI 512 includes seminars as needed for students to report back on key learning and to share with other students. All the course requirements must be completed by the end of February in the year following enrolment in order to obtain a passing grade.

ENVI 520	CRN 15675	ENVIRONMENTAL MANAGEMENT	15 PTS	1/3
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Course Coordinator: Dr Brendon Blue

This course critically reviews the theory and practice of contemporary environmental and resource management. Drawing on interdisciplinary scholarship and case studies from both Aotearoa New Zealand and worldwide, it examines the conceptual frameworks underpinning environmental

decision-making to explore how human-environment relationships are being negotiated and reimagined in the face of today's environmental challenges.

ENVI 521	CRN 15676	ENVIRONMENTAL RESEARCH METHODS	15 PTS	2/3
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Course Coordinator: A/Prof Wokje Abrahamse

This course prepares students for thesis research. It covers some of the generic issues and skills involved in research, such as choosing a topic, research design, data collection and analysis, ethics, communication and report writing. It also examines some of the issues and techniques that are particularly relevant to environmental research such as fieldwork, field methods, research ethics and relationships with participants.

By the end of the course, students should:

- understand the nature and value of research,
- understand the research process in terms of its main stages of planning, preparation; field research, data analysis, writing and presentation,
- be aware of the importance of preliminaries - developing proposals, securing funding and mapping out (and later managing) budgets,
- have a basic knowledge of epistemologies and methodologies, and the place of quantitative and qualitative research methods,
- be aware of a range of appropriate field methods in working with different groups of human participants

Competence in the above will be demonstrated through the preparation of research plans, budgets and a detailed research proposal that will form the basis of Master's thesis research.

ENVI 521 is co-taught with DEVE 516, GEOG 512 and GEOG 580.

ENVI 522	CRN 17362 CRN 37435	ENVIRONMENTAL AND PLANNING LAW	15 PTS	2/3
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Course Coordinator: Prof Catherine Iorns

A practical survey of the law and theories of law as they affect environmental management. Students will be introduced to the basics of environmental legal philosophy and principles applying to the making of law about environmental matters, as well as the basics of the NZ legal system and where environmental laws, the courts and government regulation fit into that system. Key statutes such as the Resource Management Act and Hazardous Substances and New Organisms Act will be introduced, and their basic workings examined by way of case studies and practical exercises. The new emissions trading legislation and other law relating to climate change will also be surveyed.

ENVI 525	CRN 25034	MĀORI ENVIRONMENTAL AND RESOURCE MANAGEMENT	15 PTS	3/3
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Course Coordinator: Dr Vincent (Billy) van Uitregt

The course aims to build an understanding of Māori perspectives of the environment through an in-depth look at the complex interplay between social, political, environmental, and cultural factors that impact on Aotearoa New Zealand's built and natural environments. The course considers the role Māori environmental perspectives could, and do, play in the creation of uniquely Aotearoa New Zealand places by drawing on case studies across Aotearoa New Zealand. Strategies and methods for ensuring the adequate consideration of these perspectives are evaluated.

ENVI 526	CRN 17359	POLITICAL ECOLOGY OF CONSERVATION	15 PTS	1/3
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Course Coordinator: Dr Brendon Blue

This course will explore the socio-political dimensions of conservation by critically considering the histories, knowledge, and broader political economies that shaped and shape conservation policies and practices. Particular focus will be placed on 1) unpacking assumptions we commonly have about conservation; and 2) examining how uneven relationships of power play out through different approaches to conservation.

ENVI 528	CRN 17358	CLIMATE JUSTICE NOW	15 PTS	2/3
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Course Coordinator: Dr Amanda Thomas

This course examines issues surrounding climate change mitigation, and examines mitigation initiatives and politics, and differentiated impacts of mitigation across space and time. It will explore mitigation policies and ground this exploration in Te Tiriti o Waitangi and climate justice.

ENVI 530	CRN 26076	SPECIAL TOPIC: DRIVERS OF HUMAN BEHAVIOUR	15 PTS	2/3
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Course Coordinator: A/Prof Wokje Abrahamse

This course examines human behaviour in relation to environmental challenges. We will focus on individual drivers of behaviour, as well as understanding the ways in which (un)sustainable practices are situated within existing social, natural, technological and policy contexts. Through the analysis of case studies, students will gain a better understanding of how individuals can be encouraged to engage in environmentally friendly practices, and how behaviour change principles may be used to inform environmental policy and practice.

ENVI 591	CRN 23008	THESIS	120 PTS	
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The ENVI 591 thesis provides an opportunity for students to further develop and demonstrate skills in a sustained piece of research. The 120-point thesis is a more research-intensive 'academic' option than the ENVI 593 option combining a thesis and placement. The optimal thesis length is 30-40,000 words. The thesis topic is developed in consultation with an academic supervisor based on the development and acceptance of a research proposal through ENVI 521 in the preceding year. The thesis is due in one year (full time) from the date of enrolment in ENVI 591. Students are expected to participate in the academic life of the School including attending the Geography, Environment and Development (GED) Seminar Series.

ENVI 593	CRN 2077	THESIS	90 PTS	
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The ENVI 593 thesis provides an opportunity for students to develop and demonstrate skills in a research project. The 90-point thesis represents around eight to nine months' full-time work and sits alongside the ENVI 512 Practicum (placement) course. The optimal thesis length is 20–25,000 words, with anything over 30,000 strongly discouraged. The thesis topic is developed in consultation with an academic supervisor based on the development and acceptance of a research proposal in ENVI 521 in the preceding year. The thesis is due in one year (full time) from enrolment in ENVI 593. Students are expected to participate in the academic life of the School including attending the Geography, Environment and Development Seminar (GED) Series.

GEOGRAPHY COURSES

GEOG 511	CRN 36046	SOCIO-SPATIAL THINKING FOR HUMAN GEOGRAPHY	30 PTS	1/3
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Course Coordinator: Prof Katharine McKinnon

This course introduces students to a range of socio-spatial approaches to understanding, and acting, in our world. It involves a critical exploration of key concepts including power, agency, justice, community and wellbeing, examined through a geographic lens that emphasises both our embeddedness in specific places, and the spatial relations that inform and transform those contexts. It introduces students to a range of multi-scalar approaches to social action for transformative change.

Students will be expected to read a range of literature both critically and independently and to show an ability to analyse and critique theories of social change.

Co-taught with DEVE 515.

GEOG 512	CRN 36047	GEOGRAPHIC RESEARCH APPROACHES FOR JUST AND REGENERATIVE FUTURES	30 PTS	2/3
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Course Coordinator: Dr Marcela Palomino-Schalscha

This course introduces students to the politics and practices of conducting research which aims to inform just and regenerative futures. The course prepares students going on to a Master's thesis in Geography. It specifically grapples with researching in intercultural and development contexts.

Co-taught with DEVE 516, ENVI 521 and GEOG 580.

GEOG 415	CRN 25033	INTRODUCTION TO GEOGRAPHIC INFORMATION SCIENCE AND ITS APPLICATIONS	15 PTS	2/3
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Course Coordinator: A/Prof Mairéad de Róiste

Restrictions: GEOG 215

This course is designed to empower you with the skills required to tackle complex spatial challenges. GIS combines the art of mapping, science of data analysis, and spatial understanding. Through hands-on computer practicals and lectures, you'll gain a deep understanding of how GIS can make a significant impact in your chosen field.

GEOG 417	CRN 36044	HEALTHY CITIES	15 PTS	2/3
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Course Coordinator: Dr Mirjam Schindler

Restrictions: GEOG 411 (2022 and 2023)

The course will provide students with skills to argue which characteristics a healthy city would have, a city which promotes urban health. Students will be equipped with geographical tools and concepts to analyse intra-urban processes and their effects on urban health. The course will explore how characteristics of urban (notably residential) environments might promote urban health, how such effects can be analysed, and which measures urban planning can offer. Students will be exposed to contemporary urban geography debates about urban health in national and international contexts.

GEOG 440	CRN 10015 CRN 17425 CRN 11841 CRN 17337	DIRECTED INDIVIDUAL STUDY	30 PTS	1/3 1+2/3 2/3 3/3
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Prerequisite: Permission from the Head of School

A supervised programme of study designed by the student with the support of an academic supervisor and approved by the Geography Postgraduate Coordinator.

GEOG 489	CRN 10020	RESEARCH PROJECT (HONS)	30 PTS	1+2/3
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Course Coordinator: TBD

GEOG 489 offers BA or BSc with Honours students in Geography the opportunity to design and carry out a modest independent research project on a topic of your choice under the guidance of a supervisor. It involves training support in research design, approach and methods through one-on-one sessions with a supervisor, the weekly GED (Geography, Environment and Development) Research seminars, and through attendance at, and presentation in GEOG 324 (Research Design) in T1. In July or August, there is usually a dedicated seminar where students receive feedback on their preliminary analysis from other students and staff. You are also able to sit in on classes associated with GEOG 580 in T2.

GEOG 580	CRN 7766	RESEARCH PREPARATION	15 PTS	2/3
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Course Coordinator: Dr Marcela Palomino-Schalscha

This course introduces students to the politics and practices of conducting research.

Co-taught with DEVE 516, ENVI 521 and GEOG 511.

GEOG 591	CRN 1721	Geography Thesis	120 PTS	
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Postgraduate Coordinator: Dr Mirjam Schindler

GEOG 591 involves students in independent research under the guidance of an academic supervisor, with administrative support from the Geography Postgraduate Coordinator. The Master's thesis is normally carried out over one academic year of full-time study and should demonstrate the student's mastery of their discipline. It involves the preparation and approval of a research proposal, first-hand research and analysis, then the preparation of a thesis for examination. A Master's thesis is 40,000 words in length and examined by one VUW staff member and one NZ examiner.

PHYSICAL GEOGRAPHY COURSES

PHYG 413	CRN 27050 CRN 37438	CLIMATE DYNAMICS	15 PTS	2/3
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Course Coordinator: Prof James Renwick

Prerequisites: GEOG 220 or GEOG 321

Restrictions: GPHS 426, PHYG 416 (in 2014)

Provides an overview of the circulation of the global atmosphere, the basic drivers of the climate system, including the global radiation balance, energy transports in the atmosphere, and how climate varies seasonally and from year to year.

PHYG 419	CRN 15672	NATURAL HAZARDS AND RISK: PROCESSES AND IMPACTS	15 PTS	2/3
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Course Coordinator: TBD

This course provides an understanding of the nature, distribution and frequency of natural hazards both within New Zealand and globally. It analyses the causes of natural hazards, the processes driving them, the methodologies used in their analysis and their impacts both within New Zealand and globally.

PHYG 420	CRN 17257	HYDROLOGY AND WATER RESOURCES	15 PTS	2/3
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Course Coordinator: Dr Anya Leenman

In this course, we delve into the science of hydrology underpinning water resources, and cover issues concerning the measurement, allocation, and vulnerability of water resources. You will acquire essential quantitative skills for addressing water-related hazards and resource challenges while enhancing your ability to visualise and communicate water resource data and issues in compelling and impactful ways.

PHYG 423	CRN 15673	FIELD GEOMORPHOLOGY	15 PTS	1/3
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Course Coordinator: NOT OFFERED IN 2025

Restrictions: PHYG 401

Through a field examination of the landform systems of New Zealand, this course analyses contemporary and past landform evolution, and its impacts on society. The course is focused around an intensive fieldwork programme conducted on the South Island, whereby geomorphic systems from the high alps to coastal plain are investigated and the linkages between them discussed. Issues such as climate change and glacial processes, hillslope instability, coastal erosion and landform evolution are covered in the context of the spectacular environment of the active New Zealand landscape.

PHYG 440	CRN 10017 CRN 26238 CRN 34116 CRN 31241	DIRECTED INDIVIDUAL STUDY	15 PTS	1+2/3 1/3 2/3 3/3
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Prerequisites: Permission of Head of School.

ESCI 580	CRN 28445	RESEARCH PREPARATION	15 PTS	2/3
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Course Coordinator: TBC

The course aims to provide the skills and techniques required for successful scientific research in Earth Sciences including: philosophy of science; bibliographic database searches; writing, reviewing and revision of proposals, abstracts and journal papers; strategies for poster and oral presentations. Students will work with their intended MSc thesis project supervisor to develop and submit for grading a research proposal for their project. This is due at the end of the course as part of the assessment, along with an oral presentation of the research proposal.

PHYG 591	CRN 1159	Thesis	120 PTS	
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Postgraduate Coordinator: Prof Colin Wilson

GEOPHYSICS COURSES

GPHS 420	CRN 8156	INTRODUCTION TO DYNAMICAL METEOROLOGY	15 PTS	1/3
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Programme Coordinator: Prof James Renwick

Prerequisites: MATH 323

This course introduces students to the fundamental concepts of dynamical meteorology and develops skills in problem solving.

GPHS 421	CRN 8157	MID-LATITUDE WEATHER SYSTEMS	15 PTS	1/3
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Programme Coordinator: Prof James Renwick

This course extends the knowledge gained in GPHS 420 to the development of an understanding of weather systems in middle latitudes. Conceptual and mathematical models are investigated to provide insights into the physical processes that occur during development, including diagnosis of vertical motion. Special emphasis is paid to weather systems in New Zealand and the Tasman Sea region.

GPHS 422	CRN 8158	RADIATION AND THERMODYNAMICS FOR METEOROLOGY	15 PTS	2/3
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Programme Coordinator: Prof James Renwick

Students are introduced to the concepts of radiation and thermodynamics that are relevant to applications in meteorology and atmospheric physics.

GPHS 423	CRN 8159	CLOUD PHYSICS AND BOUNDARY LAYER METEOROLOGY	15 PTS	2/3
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Programme Coordinator: Prof James Renwick

This course investigates the microphysical properties of clouds. The meteorology of the lower boundary layer of the Earth's atmosphere is also examined. This course is offered in alternate years.

GPHS 425	CRN 11096	NUMERICAL WEATHER PREDICTION	15 PTS	2/3
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Programme Coordinator: Prof James Renwick

Numerical Weather Prediction (NWP) is examined within the context of modern weather forecasting. It includes material on the historical development of NWP, wave properties of the governing mathematical equations, numerical methods, model physics, statistical methods in post-processing, ensemble forecasting, and applications of global and limited-area NWP in modern weather forecasting operations.

GPHS 426	CRN 27049	CLIMATOLOGY AND REMOTE SENSING	15 PTS	3/3
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Course Coordinator: Dr Kyle Clem

Restrictions: PHYG 413

This course takes a mathematical approach to understanding climate dynamics, based on the equations of atmospheric motion and energy transport in the large-scale circulation. The second half of the course derives and uses the equation of radiative transfer as a basis for investigating remote sensing of the atmosphere.

GPHS 445	CRN 9067	OBSERVATIONAL EARTHQUAKE SEISMOLOGY	15 PTS	2/3
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Course Coordinator: Dr El Mestel

Prerequisites: MATH 323

Restrictions: GPHS 409

This course provides an introduction to observational earthquake seismology and its contribution to the development of Earth models. Students will learn the fundamental concepts and processes of seismic wave generation, propagation, recording and analysis in idealised media and in the real Earth.

GPHS 489	CRN 1891	PROJECT	30 PTS	1+2/3
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Course Coordinator: TBD

A research project on a topic approved by the Head of School.

GPHS 520	CRN 27121	PROFESSIONAL WEATHER OBSERVING, ANALYSIS AND SYNOPTIC DIAGNOSIS	30 PTS	2/3
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Course Coordinator: TBC (taught by staff from MetService)

Prerequisites: Permission of Head of School

Co-requisites: GPHS 521

This course, together with GPHS 521, forms an integrated study of forecasting practice and supporting meteorological theory. Emphasis is placed on the theoretical principles of weather observation, analysis, and diagnosis that underpin weather prediction. Students will actively apply the principles learnt through a variety of simulated exercises.

GPHS 521	CRN 27122	PROFESSIONAL WEATHER DIAGNOSIS AND FORECASTING	30 PTS	3/3
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Course Coordinator: TBC (taught by staff from MetService)

Prerequisites: Permission of Head of School

Co-requisites: GPHS 520

This course, together with GPHS 520, forms an integrated study of forecasting practice and supporting meteorological theory. Emphasis is placed on the theoretical principles of weather diagnostics at synoptic and meso-scales that underpin weather prediction. Students will apply the principles learnt through advanced simulated exercises.

GPHS 589	CRN 27123	RESEARCH PROJECT	30 PTS	1+2+3
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Course Coordinator: TBC (taught by staff from MetService)

Prerequisites: Permission of Head of School

Co-requisites: GPHS 520

This project will be based on a 'real world' meteorological research objective selected from a list of research topics arising from meteorological operations at MetService. Students will be encouraged to demonstrate their independence, critical thinking and scientific rigour in their project work. MetService will provide all meteorological data required for the project. Supervision will be by MetService and/or Victoria University staff. Overall guidance and assessment will be by Victoria University staff.

EARTH SCIENCE COURSES

ESCI 407	CRN 15248	GLOBAL TECTONICS	15 PTS	1/3
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Course Coordinator: Prof Rupert Sutherland

Prerequisites: one of ESCI 302, GEOS 207, GEOS 307

Restrictions: GEOL 407

You will acquire understanding of why and how the earth moves and deforms. The theory of plate tectonics underpins all of Earth Science, rock genesis and metamorphism. Plate tectonics causes earthquakes, rock deformation, and hydrothermal processes. It creates natural resources and hazards. This course focusses on the origins and transmission of plate tectonic forces; theories of stress, heat, fluids and rock deformation in the earth; and failure of the crust on geological faults.

ESCI 412	CRN 15255	PALEOCLIMATOLOGY	15 PTS	1/3
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Course Coordinator: Dr Bella Duncan

Prerequisites: one of ESCI 301, GEOS 306

Restrictions: GEOL 412

ESCI 412 is a study of contemporary research papers in paleoclimate science. We concentrate on environmental proxy indicators, dating methods and climate dynamics. The course examines prominent Quaternary records from New Zealand as well as high profile records from elsewhere (for example, polar ice and sediment cores and tropical climate records from speleothems). We also develop an understanding of how the atmosphere, ocean and cryosphere influence climatic change as recorded in the geological record. This includes a discussion of orbital forcing (Milankovitch cycles) as well as sub-orbital features such as Dansgaard-Oeschger events and ENSO.

ESCI 440	CRN 15260 CRN 26245 CRN 28392	DIRECTED INDIVIDUAL STUDY	30 PTS	1+2/3 1/3 2+3/3
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Prerequisites: Permission of the Head of School

ESCI 441	CRN 15261 CRN 17049 CRN 26249	DIRECTED INDIVIDUAL STUDY	15 PTS	1/3 2/3 3/3
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Prerequisites: Permission of the Head of School

ESCI 451	CRN 32176	ACTIVE EARTH	15 PTS	1/3
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Course Coordinator: Prof John Townend

Prerequisites: Permission of Earth Sciences Postgraduate Coordinator

Restrictions: ESCI 402

The physical and chemical phenomena governing tectonism, magmatism, and active margin processes in general interact on a wide variety of timescales. This course explores the observations on which modern understanding of active earth processes is based, the interaction between those processes, and the implications they have for hazards. Using global and New Zealand examples, this course explores how we make and evaluate geoscientific observations and effectively communicate our findings. The topics addressed include theoretical and empirical models of plate boundary processes, including subduction, magmatism, faulting, and fluid migration.

ESCI 452	CRN 32177	EARTH HISTORY	15 PTS	1/3
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Course Coordinator: Dr Gavin Dunbar

Prerequisites: Permission of Earth Sciences Postgraduate Coordinator

Restrictions: ESCI 403

This course will examine stratigraphic principles and approaches used to reconstruct past depositional environments, to then interpret major tectonic and/or climatic events in Earth's history. Geochemical and paleontological proxies will be used to identify changes in Earth's environment and climate over last 100 million years. An emphasis will be placed on an integrated stratigraphic dataset to interpret the history of NZ's sedimentary basins.

ESCI 453	CRN 32178	EARTH MATERIALS AND RESOURCES	15 PTS	2/3
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Course Coordinator: A/Prof Monica Handler and Prof Rupert Sutherland

Prerequisites: Permission of Earth Sciences Postgraduate Coordinator

Restrictions: ESCI 416

Knowledge of Earth materials and resources and their impact on the Earth system is essential for responsible resource extraction and sustainable development. This course will explore the origin, extraction, uses and sustainability of a range of Earth resources. Topics include conventional energy resources such as hydrocarbons, our transition to 'green' resources, and the metals and other resources required for modern construction, energy production, and energy storage.

ESCI 454	CRN 33231	FRONTIERS IN PALEOBIOLOGY	15 PTS	2/3
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Course Coordinator: Prof James Crampton

This course will review some of the latest results in the field of paleobiology. Using recently published research papers, we will choose the most exciting and extraordinary topics available. Topics may include discussions on mass extinctions, processes and patterns in the fossil record, human evolution and any particularly spectacular fossils that are newly reported. Participants will be encouraged to suggest study topics in any area of paleobiology that interests them.

GEOL 489	CRN 1773	RESEARCH PROJECT (HONS)	30 PTS	F
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Course Coordinator: Prof Colin Wilson

This course involves the formulation and execution of a research project of your own choice under the guidance of a staff member. It is compulsory for all those enrolled for BSc(Hons) in Geology.

If you are considering taking an Honours degree in Geology make an appointment to see the Earth Sciences Postgraduate Coordinator (Prof Colin Wilson) who will offer guidance, discuss resources, and point you to potential supervisors. It is important that you discuss possible research topics with appropriate staff *well before* the academic year commences.

STAFF CONTACTS

		ROOM	PHONE
A/Prof Monica Handler	Head of School	309	463 5391
A/Prof Jamie Howarth	Deputy Head of School	209	463 5071

POSTGRADUATE COORDINATORS

A/Prof Mairéad de Róiste	Geography and Development Studies (Thesis)	215	463 6431
Dr Mirjam Schindler	Geography and Development Studies (Admissions)	212	463 5645
Dr Amanda Thomas	Environmental Studies		
Prof Colin Wilson	Earth Sciences, Geology, Physical Geography, and Environmental Science	411	463 9510

SCHOOL ADMINISTRATORS

Belinda Behle	School Manager	310	463 5345
Meena Swortzel	Administrator – Operations	311	887 3806
Alina Egorova	Programme Administrator – Earth Science	311	463 5444
Yvette Balanski	Programme Administrator – Geography	311	887 4509

ACADEMIC STAFF	AREAS OF EXPERTISE	ROOM	PHONE
A/Prof Wokje Abrahamse	Environmental studies, human dimensions of environmental issues, behaviour change, urban sustainability	203	463 5217
Dr Cliff Atkins	Sedimentary processes and environments, Antarctic glacial geology	302c	463 6143
Dr Brendon Blue	Politics of environmental knowledge, critical physical geography, political ecology, science and technology studies	204	886 4578
Dr Carolyn Boulton	Faults, Fluid-rock interaction, Friction, Structural geology, Earthquake cycle, Earthquake-simulation experiments	211	463 8369
Dene Carroll	Field mapping/stratigraphy, and igneous petrology/geochemistry	302c	463 5932
Dr Calum Chamberlain	Seismology, tectonics, geophysics, earthquakes	526	886 4474
Dr Kyle Clem	Climate dynamics, Southern Hemisphere climate change, tropical-polar teleconnections, climate modelling	225	463 6793
Prof James Crampton	Biodiversity history, mollusc taxonomy, morphometrics, traditional and quantitative biostratigraphy, Cretaceous stratigraphy, basin evolution and history of New Zealand	410	463 6198
A/Prof Mairéad de Róiste	GIS, Usability, transport, modelling, public participation GIS, pedagogy, capability building	215	463 6431
Dr Cathrine Dyer	Climate Change policy	224	887 3966
Dr Shaun Eaves	Reconstruction of past climates and environments to establish past climate changes	521	463 5176
A/Prof Monica Handler	Geochemistry, mantle processes, volcanic rocks, marine trace metal geochemistry	417	463 5391
A/Prof Jamie Howarth	Proxy records of environmental change, hazards, storm frequency	209	463 5071
Dr Valentine Ibeka	Migration studies, development studies, research methodology, research ethics, social epistemology, and political philosophy	207	887 3901
Prof Sara Kindon	Social and development geography, participatory research, visual and creative methods, gender, refugee resettlement, refugee and Indigenous justice	213	463 6194
A/Prof Simon Lamb	Structural geology and tectonics	525	463 6428
Dr Anya Leenman	Fluvial hydrology and geomorphology	201	463 3900
Prof Katharine McKinnon	Human Geography and Development Studies	206	887 3199
Dr Marcela Palomino-Schalscha	Social and 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	210	463 5899

Dr Andrew Rees	Environmental science, environmental monitoring, quantitative paleoecology, environmental reconstruction	214	463 9396
Prof James Renwick	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	206	463 4719
Prof Martha Savage	Seismology and its relation to tectonics, volcanoes, earthquake hazards and geothermal energy	529	463 5961
Dr Mirjam Schindler	Urban geography, human-environment interactions, spatial analysis, urban modelling, healthy cities	212	463 5645
Dr Ian Schipper	Igneous Petrology and Volcanology	415	463 8197
A/Prof Dan Sinclair	Environmental geochemistry, paleoclimatology, paleoceanography, rapid climate change during the last glacial, geochemistry of carbonates, speleothems and corals; biomineralization	419	463 9755
Dr Polly Stupples	Social and cultural geography, development studies, creative practice and the creative economy, sustainability	208	463 6793
Prof Rupert Sutherland	Global-scale tectonic process and crustal- scale tectonic processes	527	463 6422
Dr Amanda Thomas	Democracy, environmental democracy, political ecology, gender, class and ethnicity		
Prof John Townend	Fault mechanics and tectonophysics	525	463 5411
Dr Billy van Uitregt	Indigenous voices, worldviews and knowledges in contemporary environmental science, policy and governance	205	463 6119
Prof Colin Wilson	Field, chemical, and physical volcanology, volcano-tectonics and geothermal geology	411	463 9510

RESEARCH STAFF	AREAS OF EXPERTISE	ROOM	PHONE
Dr Simon Barker	Volcanology	525	886 4480
Dr Raimundo Brahm Scott	Igneous geochemistry	417	
Dr Jenni Hopkins	Volcanic geochemistry	416	886 4473
Dr Finnigan Illsley-Kemp	Volcano geodynamics	525	
Dr Mike Joy	Freshwater ecology, environmental studies, AI, public health, community ecology, biosecurity science and invasive species ecology	229	463 6881
Dr El Mestel	Seismology and seismic exploration, volcanology	502	
Prof Tim Stern	Exploration geophysics and tectonics, crust and mantle structure of the Earth	421B	
Dr Maja Zonjić	Human geography, cultural geography, culture, representation and identity		

EMERITUS PROFESSORS		AREAS OF EXPERTISE	ROOM	PHONE
Prof Lionel Carter			514	463 6475
Prof Michael Crozier		Physical Geography		
Prof John Gamble		Petrology and volcanology	421B	463 5253
Prof Tim Little		Tectonics, structural geology, deformational processes	421B	886 4535
Prof Philip Morrison		Economic geography, labour market geography, urban growth and development		
Prof Euan Smith				
		TECHNICAL STAFF	ROOM	PHONE
Kosta Tashkoff		Manager Technical Services	307	463 6013
Frans Gerber		Geochemistry Facilities Technician	414	463 6402
Aleksandr Beliaev		Computing Systems Administrator	530	463 6470
Dr Bruce Charlier		Geochemistry Laboratory Manager	414	463 5865
Jane Chewings		Senior Technical Officer	319	463 6192
Barbara Lyndsell		Petrology Technician	319	887 3829
Dez Tessler		Technician – Field Support	318	463 6512
		ANTARCTIC RESEARCH CENTRE	ROOM	PHONE
A/Prof Brian Anderson		Associate Professor	521	463 5176
Prof Peter Barrett		Emeritus Professor	515	463 5336
A/Prof Nancy Bertler		Professor of Earth Sciences	519	463 6196
Anna Bowron		Administrator	512	
Dr Gavin Dunbar		Senior Lecturer	518	463 6123
Dr Bella Duncan		Research Fellow	507	463 5493
Dr Shaun Eaves		Senior Lecturer in Physical Geography	521	463 5176
Dr Warren Dickinson		Senior Research Fellow	510	463 6199
Barbara Fuchs		Operations Manager	512	463 6587
Prof Nick Golledge		Professor of Glaciology	509	463 9592
A/Prof Huw Horgan		Associate Professor	520	463 6918
Prof Richard Levy		Professor	519	463 6196
James MacPhail		Operations and Field Engineer		
Darcy Mandeno		Science Drilling Office Engineering Manager	513	463 9662

Prof Rob McKay	Director	517	463 6836
Prof Tim Naish	Professor in Earth Sciences	508	463 6197
Dao Polsiri	Projects Coordinator	520	463 5044
Dr Lauren Vargo	Research Fellow		463 6193
CLIMATE CHANGE RESEARCH INSTITUTE			
Dr Judy Lawrence	Adjunct Research Associate	129	463 5474

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