2025

Undergraduate Course List

Geography, Environment & Earth Sciences

Te Kura Tātai Aro Whenua

Image: Glacial Valley and Dusk, Tasman Valley, NZ: 2017 Dr Mirjam Schindler

Website: www.wgtn.ac.nz/sgees

Email: geo-enquiries@vuw.ac.nz

Phone: 04 463 5444

Office: Kelburn Campus, Cotton Building, Room 311

Office Hours: Monday – Thursday: 8:30 am – 4:30 pm
Friday: 8:30 am – 4 pm

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Welcome!

The School of Geography, Environment and Earth Sciences offers three undergraduate degrees (the Bachelor of Science, the Bachelor of Arts and the Bachelor of Environment and Society). Each degree offers several different majors to choose from. This guide provides information on the requirements of each degree major, and descriptions of the courses we will offer in 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 Tītoko – 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 challenged in your academic profess, 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 Tītoko 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 ʻāiga (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 undergraduate majors, you can also contact one of our programme coordinators – their contact information is listed below:

Programme	Programme Coordinator	Contact Email
Geography	Dr Polly Stupples	polly.stupples@vuw.ac.nz
Development Studies	Dr Marcela Palomino-Schalscha	marcela.palomino-schalscha@vuw.ac.nz
Environmental Studies	A/Prof Wokje Abrahamse	wokje.abrahamse@vuw.ac.nz
Environmental Science	Dr Andrew Rees	andrew.rees@vuw.ac.nz
Climate Science	Dr Kyle Clem	kyle.clem@vuw.ac.nz
Earth Science	A/Prof Monica Handler	monica.handler@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*

PLANNING YOUR STUDIES

Once you have chosen your Degree and Major and reviewed the requirements and courses, you can use the template below to plan your degree.

Start by adding in the core papers for your Major(s) to each year in the table below.

Then, add any courses you are interested in taking.

You will need a total of 360 points for a BSc, BA, or BEnvSoc degree.

Year 1:							120 points
Year 2:							120 points
Year 3:							120 points

If you have any questions or need help planning your degree, reach out to the team at Tītoko Centre for Student Success.

BACHELOR OF SCIENCE (BSc)

General Bachelor of Science (BSc) Degree Requirements

- A total of 360 points
- At least 210 points must be from 200 and 300-level courses, including:
  - at least 120 points must be from courses listed for the BSc,
  - at least 75 points must be from 300-level courses listed for the BSc,
  - at least 15 points from ENGR 121–123, ENGR142, GEOG 115, MATH 100-399, PHYS 100-399, QUAN 100-399, STAT 100-399.
- 90 points can be from outside Science (some majors also permit an additional 30 outside points).
- At least one Major, and a second Major may be from Science or from any other first degree with a maximum of 150 points permitted from outside Science.

Bachelor of Science Minor Requirements

- 60 points above 100-level specified in the major, of which:
  - 15 points must be at 300-level, and not counted towards a major or another minor

BACHELOR OF ARTS (BA)

General Bachelor of Arts (BA) Degree Requirements

- A total of 360 points, on which:
  - at least 240 points must be in subjects from Part A of the BA Schedule,
  - at least 80 points from the 100-leel courses listed for the BA,
  - a maximum of 180 points at 100-level,
  - at least 180 points at 200 & 300 level, including at least 75 points at 300 level courses listed for BA, and
  - satisfy the requirements for at least one major subject.

BACHELOR OF ENVIRONMENT AND SOCIETY (BEnvSoc)

General Bachelor of Environment and Society (BEnvSoc) Degree Requirements

- A total of 360 points, of which:
  - 5 courses at 100-level: GEOG 112, GEOG 114, GEOS 101, MAOR 126; and one course from: EHUM 101, GEOG 115, SARC 122, STAT 193, or QUAN 102,
  - 2 courses at 200-level: GEOG 214; and one course from: DSDN 221, EHUM 201, GEOG 217, LAND 221, MGMT 211, or SCIS 213,
  - 2 courses at 300-level: GEOG 326 and GEOG 327,
  - Complete the requirements of at least one major.

If you have any questions regarding BEnvSoc, feel free to contact the BEnvSoc Programme Director, Dr Brendon Blue (Brendon.blue@vuw.ac.nz)

FIELD TRIPS

ENSC 302	Directed Individual Study	20 pts
ESCI 241	Introductory Field Geology	10 pts
ESCI 341	Sedimentary Field Geology	10 pts
ESCI 342	Structural Field Geology	10 pts
GEOG 217	Human Geography: Approaching the World	20 pts
GEOG 313	Geographies of New Zealand	20 pts
GEOG 325	Field Methods	10 pts
GEOS 101	Our Dynamic Earth and Environment	15 pts
GEOS 102	Earth Science for a Changing Planet	15 pts
GEOS 201	Hydrology / Freshwater	20 pts
GEOS 204	Geohazards and Risk	20 pts
GEOS 211	Earth's Changing Structure	20 pts
GEOS 302	Measuring Aotearoa's Dynamic Landscape	20 pts
GEOS 306	Past, Present and Future Environmental Change	20 pts
GEOS 314	Volcanic Field Geology	10 pts

Please Note:

- Field trips may constitute one entire course or be only a part of it and visit a variety of locations and sites. Extra costs are normally included in the course materials fee. However, students may have to contribute towards the costs for some trips.
- Many field trips have a limited number of places—please apply by **1 December 2024**. Applications for limited entry courses will be waitlisted, and if the course is oversubscribed, decisions on final acceptance will be made based on grades.
- Students must be physically able and must have a good level of physical fitness. Staff must be informed in advance about any known health issues that might be of concern in a field setting.
- Students are required to submit a confidential form providing emergency contact and health information, prior to their full acceptance into the course.
- Students are also expected to have purchased appropriate equipment, ordered through the University's online payment portal: https://pay.wgtn.ac.nz/SGEESTransactions/tran. These can be collected from the SGEES school office. This equipment may include geological compasses, hand lenses, write-in-the-rain type field notebooks, and geological hammers.
- Students are also expected to have appropriate personal gear including field footwear, waterproof and warm clothing. At 100 level, there may be a very limited amount of outdoor clothing that is available for students to borrow. After 100 level, you need to have access to your own gear, including hiking boots, a sleeping bag, and protective glasses (for safety when rock hammering). Please note that if you do not have suitable field boots you may be declined from attending some field trips and this may result in you failing the course.
- Field trip courses require attendance in person. You will not be able to enrol in these courses if you are a distance student.

DEVELOPMENT STUDIES (DEVE)

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

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

You can take Development Studies as a major in your BA, BSc, BEnvSoc degree and are encouraged to take this major combined with another in a related discipline such as Cultural Anthropology, Economics, Pacific Studies, Geology, History, Political Science, International Relations, Education, Environmental Studies, Asian Studies, or Māori Studies. Graduates of the Development Studies major gain knowledge and skills to address complexity and contribute to meaningful systemic change in New Zealand or overseas.

REQUIREMENTS FOR MAJOR

Three courses at 100-level:

- GEOG 112,
- One region-based course at 100-level*,
- One subject-based course at 100-level*.

Three courses at 200-level:

- GEOG 212,
- One region-based course at 200-level*,
- One subject-based course at 200-level*.

Three courses at 300-level:

- GEOG 312,
- GEOG 316,
- One further approved course at 300-level*.

* Visit www.wgtn.ac.nz/development-studies for a list of courses.

If you have any questions feel free to contact the Undergraduate Development Studies Programme Coordinator, Dr Marcela Palomino-Schalscha (marcela.palomino-schalscha@vuw.ac.nz).

ENVIRONMENTAL SCIENCE (ENSC)

Environmental Science is a major offered across the sciences, drawing on the extensive expertise of staff both in the Faculty of Science at Te Herenga Waka—Victoria University of Wellington, and the wider Wellington science community. You can take Environmental Science as a major in your BSc or BEnvSoc. Graduates of the Environmental Science major will have obtained one of the highest quality bachelor's degrees available as they will have the opportunity to combine a physical, biological, and mathematical or earth sciences major with the Environmental Science major.

REQUIREMENTS FOR MAJOR

Four courses at 100-level:

- GEOG 114,
- MAOR 126,
- One of the following: CHEM 122, GEOS 101, or BIOL 113 and BIOL 114,
- One course from the following: GEOG 115, MATH 177, QUAN 102, STAT 193.

Three courses at 200-level:

- GEOG 214,
- SCIS 213,
- One course from the following: BIOL 222, GEOG 222, or GEOS 210.

Three courses at 300-level:

- GEOG 326,
- GEOG 327,
- GEOS 312.

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

If you have any questions feel free to contact the Environmental Science Programme Coordinator, Dr Andrew Rees (andrew.rees@vuw.ac.nz).

ENVIRONMENTAL STUDIES (ENVI)

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.

Our major in Environmental Studies enables you to examine environmental problems and solutions through a variety of disciplines. You can take Environmental Studies as a major in your BSc or BEnvSoc. By the end of your degree, you will have the chance to develop excellent written and oral presentation skills, skills in conducting independent inquiry into environmental issues, and deep understanding of the complexity of nature and society in Aotearoa New Zealand and globally.

REQUIREMENTS FOR MAJOR

Four courses at 100-level:

- GEOG 112,
- GEOG 114,
- GEOG 115 or STAT 193 or QUAN 102,
- One course from the following: GEOS 101, MAOR 123, POLS 111, and PUBL 113.

Three courses at 200-level:

- GEOG 214,
- MAOR 216,
- One course from: GEOG 200 – 299 or GEOS 200 – 299.

Three courses at 300-level:

- GEOG 314,
- Two courses from the following:
  - MAOR 301,
  - PUBL 307,
  - GEOG 300 – 399,
  - GEOS 300 – 399,
  - SCIS 300 – 399.

If you have any questions feel free to contact the Undergraduate Environmental Studies Programme Coordinator, A/Prof Wokje Abrahamse (wokje.abrahamse@vuw.ac.nz).

GEOGRAPHY

Geography contributes to understanding and addressing the problems of our time through systematic, spatial, and critical analysis. It brings vital insights about the influence of place, space, and power into key issues facing the world today such as urbanisation, climate change, migration, globalisation, gender inequality, Indigenous rights, sustainability, and diversity.

Depending on your interests, you can take Geography as a major in a BA, BEnvSoc, or a BSc degree and your study can follow one of five themes: Environmental Geography, Development Geography, Human Geography, Physical Geography, or Geographic Information Science (GIS), or integrate them all.

This major enables senior undergraduate students to get a taste of postgraduate study and to generate workplace-ready skills through participation in a research team supported by leading academics. This experience makes our graduates highly employable in a range of fields and professions.

REQUIREMENTS FOR MAJOR

Four courses at 100-level:

- GEOG 112,
- GEOG 114,
- GEOS 101,
- GEOG 115 or STAT 193 or QUAN 102.

Three courses at 200-level:

- GEOG 215,
- GEOG 217,
- One course from: GEOG 200 – 299 or GEOS 200 – 299.

Three courses at 300-level:

- Either GEOG 324 and GEOG325 or GEOG326 and GEOG327,
- One course from: GEOG300 – 399 or GEOS 301 – 305.

If you have any questions feel free to contact the Undergraduate Geography Programme Coordinator, Dr Polly Stupples (polly.stupples@vuw.ac.nz).

CLIMATE SCIENCE

Climate change creates huge challenges for our planet and society. We need people with the skills and expertise to understand, address, and communicate these complex climate and weather issues.

Climate Science will give you an overview of how Earth's climate system works, how and why it varies, and explain the impact of natural and human-caused climate change on Aotearoa New Zealand. You will delve into climate modelling, learn the skills to effectively communicate about climate change, and master how to interpret data, explore scientific questions, and work effectively in teams.

Depending on your interests, you can take Climate Science as a major in BSc or BEnvSoc degree.

REQUIREMENTS FOR MAJOR

Four courses at 100-level:

- GEOS 101,
- GEOG 114,
- GEOG 115,
- 15-points from: MATH 100 – 199, PHYS 100 – 199, QUAN 100 – 199, STAT 100 – 199.

Three courses at 200-level:

- SCIS 213,
- Two courses from:
  - GEOS 201,
  - GEOS 203,
  - GEOS 205,
  - GEOS 206.

Three courses at 300-level:

- GEOS 301,
- GEOS 303,
- GEOS 305,
- GEOS 306,
- GEOS 311,
- SCIS 313,
- SCIS 317.

If you have any questions feel free to contact the Undergraduate Climate Science Programme Coordinator, Dr Kyle Clem (kyle.clem@vuw.ac.nz).

EARTH SCIENCE

Earth Science explores our planet's natural system, from the top of the atmosphere to the soil and rocks beneath our feet. You will learn about the causes of societal issues such as climate change, learn about the science underpinning natural hazards, and investigate how we can make our systems and resources more sustainable.

Earth Science offers a diverse range of courses that allow you to customise your major to suit your interest and career goals. We specialise in three themes: Climate and Environment, Earth's resources, and natural hazards.

Depending on your interests, you can take Earth Science as a major in BSc or BEnvSoc degree.

REQUIREMENTS FOR MAJOR

Four courses at 100-level:

- GEOS 101,
- GEOS 102,
- GEOG 115 or one course from the following: MATH 100 – 199, PHYS 100 – 199, QUAN 100 – 199, and STAT 100 -199,
- COMP 132 or one course from the following: BIOL 100 – 199, CHEM 100 – 199, COMP 100 - 199, MATH 100 – 199, PHYS 100 – 199, SPCE 100 – 199.

Three courses at 200-level:

- GEOS 201 – 205,
- GEOS 207 – 211.

Three courses at 300-level:

- GEOG 326,
- GEOS 301 – 304,
- GEOS 306 – 310.

If you have any questions feel free to contact the Undergraduate Earth Science Programme Coordinator, A/Prof Monica Handler (monica.handler@vuw.ac.nz).

COURSE DESCRIPTIONS

These are the planned courses for 2025. However, the university may cancel course due to insufficient resources, student demand, or unforeseen circumstances Check online for up-to-date information, as well as more detailed course information at
https://www.wgtn.ac.nz/study/programmes-courses/courses

HOW TO USE THIS GUIDE

Course code	Course reference number	Title	Points	Trimester

100-LEVEL COURSES

GEOG 112	**CRN 1651**	**(RE)MAKING PLACES: GEOGRAPHIES OF DEVELOPMENT, EQUITY, AND SOCIAL CHANGE**	**15 PTS**	**T2**

Course Coordinator: Dr Marcela Palomino-Schalscha

An introduction to the main themes, concepts, and debates in Human Geography and Development Studies, drawing on case studies from the main world regions, particularly Oceania, Latin America, the Asia–Pacific region, and New Zealand's place within it. Students are introduced to cross-cutting concepts in Human Geography and Development Studies, and to the key approaches of Social and Cultural Geography, Urban and Rural Geography, Migration Geography, and Development Geography.

GEOG 112 is a compulsory course for the BEnvSoc degree and for all majors in Geography, Development Studies, and Environmental Studies.

GEOG 114	**CRN 7021**	**SUSTAINABILITY: PEOPLE AND ENVIRONMENT**	**15 PTS**	**T1**

Course Coordinator: A/Prof Wokje Abrahamse

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

GEOG 114 is a compulsory course for the BEnvSoc degree and for all majors in Environmental Science, Geography, Climate Science, and Environmental Studies.

GEOG 115	CRN 37078	DIGITAL WORLDS: ENVIRONMENTAL AND SOCIAL INSIGHTS THROUGH DATA ANALYSIS	15 PTS	T2

Course Coordinator: Dr Ian Schipper

This course explores the practical applications of data analysis in understanding environmental, spatial, and temporal problems, equipping students with the skills to derive meaningful insights and propose informed solutions relevant to Aotearoa or internationally. This course implements a range of tools dedicated to data analysis and visualisation, which facilitates efficient and innovative approaches to handle data.

GEOG 115 is a compulsory course for all majors in Climate Science.

GEOS 101	37070	OUR DYNAMIC EARTH AND ENVORIONMENT	15 PTS	T1

Course Coordinator: Dr Cliff Atkins and Dene Carroll

Restrictions: ESCI 111

An introduction into the Earth system, covering the physical processes that shape the Earth and environment. This course emphasises how humans interact with the environment, recognising differing societal perspectives, especially around key issues such as climate change and sea level rise, natural hazards, and resource use. This course includes a 1-day field trip around the Wellington region.

GEOS 101 is a compulsory course for the BEnvSoc degree and for all majors in Environmental Science, Environmental Studies, Geography, Earth Science, and Climate Science.

GEOS 102	37071	EARTH SCIENCE FOR A CHANGING PLANET	15 PTS	T2

Course Coordinators: Dene Carroll and Prof John Townend

Restrictions: ESCI 112

Students will explore the foundations of Earth Science, necessary for understanding and mitigating climate change and natural hazards, including sea-level rise, earthquakes, and volcanic eruptions. Students are introduced to environmentally responsible management of natural resources such as groundwater and minerals. This course includes field work.

GEOS 102 is a compulsory course for the Earth Science major.

GEOS 103	37072	ANTARCTICA: UNFREEZING THE CONTINENT	15 PTS	T2

Course Coordinators: Dr Shaun Evans and Dr Cliff Atkins

Restrictions: ESCI 132

An introduction to Antarctica, including its history, exploration, weather, geology, fauna, and management. Antarctica' role in the global climate system is emphasised.

200-LEVEL COURSES

ESCI 201	CRN 11341	CLIMATE CHANGE AND NEW ZEALAND'S FUTURE	20 PTS	T3

Course Coordinator: Dr Lauren Vargo

Prerequisites: 30 points

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

ESCI 241	CRN 17287	CLIMATE CHANGE AND NEW ZEALAND'S FUTURE	10 PTS	T1

Course Coordinator: Dene Carroll

Prerequisites: ESCI 111, 112; 15 points from ENGR 121-142 or any 100-level MATH, PHYS, QUAN or STAT or approved equivalent

Field Trip: You need to select one of the three one-week field trips (depending on demand)
Refer to the online Course Finder for dates.

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

GEOG 212	CRN 6002	WORLDS OF DEVELOPMENT	20 PTS	T1

Course Coordinator: Dr Valentine Ibeka

Prerequisites: GEOG 112 or GLBL 101 or TOUR 101 or approved course

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

GEOG 212 is a compulsory course for all majors in Development Studies.

GEOG 214	CRN 6004	ENVIRONMENTAL FUTURES FOR AOTEAROA NEW ZEALAND	20 PTS	T2

Course Coordinator: Dr Billy van Uitregt

Prerequisites: GEOG 114 or GLBL 101 or 15 approved points

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

GEOG 214 is a compulsory course for the BEnvSoc degree, and all majors in Environmental Studies and Environmental Science.

GEOG 215	CRN 6005	INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS (GIS) AND SCIENCE	20 PTS	T2

Course Coordinator: A/Prof Mairéad de Roisté

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

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

GEOG 215 is a compulsory course for all majors in Geography.

GEOG 217	CRN 26056	HUMAN GEOGRAPHY: APPROACHING OUR WORLD	20 PTS	T2

Course Coordinator: Dr Mirjam Schindler

Prerequisites: GEOG 112, GEOG 114, or 15 approved 100-level pts or GLBL 101

This course explores the evolution of human geography and its relevance to local and global issues. We explore and compare different human geography approaches to our world and apply them to various spheres of life (e.g., society, economics, environment). Students will be introduced to key ideas, concepts, and thinkers of human geography over time.

GEOG 217 is a compulsory course for all majors in Geography.

GEOS 201	CRN 37086	HYDROLOGICAL SCIENCE AND FRESHWATER MANGEMENT	20 PTS	T2

Course Coordinator: Dr Anya Leenman

Prerequisites: 15 pts from ESCI 111, GEOG 114, GEOS 101; 15 pts from (GEOG 115 or 100-level MATH/PHYS/QUAN/STAT)

Restrictions: GEOS 301

This course equips students with the fundamental principles of hydrology and water management. Through practical exercises and theory, students will learn about hydrological processes, river dynamics, floods, and droughts. Students will then apply this theoretical knowledge to questions of water quality, resources, and management, as well as climate change impacts on hydrology. This course brings together lectures from a range of disciplines to discuss the crucial roles of freshwater in Aotearoa including alternative and indigenous perspectives.

GEOS 201 is a compulsory course for all majors in Climate Science.

GEOS 204	CRN 37087	GEOHAZARDS AND RISK	20 PTS	T2

Course Coordinator: Prof Martha Savage

Prerequisites: 30 pts from (ESCI 111, ESCI 112; GEOS 101, GEOS 102)

Restrictions: GEOS 304

This course provides an understanding of major geohazard phenomena, from volcanic eruptions and earthquakes to tsunamis, landslides and beyond. Through field trips, hands-on exercises, and class-based learning, students will learn about geohazard identification and the potential for individual geohazards to cascade into multi-hazard events with wider societal and environmental effects. Students will develop skills in characterising and communicating the risks associated with geohazards. Students will also see how the knowledge they have gained in this course is used every day by the agencies responsible for monitoring and responding to geohazards in Aotearoa New Zealand.

GEOS 208	CRN 37088	SUSTAINABLE RESOURCES AND INFRASTRUCTURE	20 PTS	T1

Course Coordinator: Prof Rupert Sutherland

Prerequisites: 30 pts from (ESCI 111, ESCI 112; GEOS 101, 102); 15 pts from (GEOG 115 or 100-level MATH/PHYS/QUAN/STAT)

Restrictions: GEOS 308

Students will acquire practical understanding of theories and methods used for subsurface analysis, imaging, and sampling. The techniques underpin groundwater, geothermal energy, and mineral exploration and utilisation. Rock mass stability and site characterization underpin sustainable

infrastructure development. The course comprised two modules: Theory and analysis of underground pore fluids, heat, stress, and rock failure; and Practical techniques for underground imaging, measurement, and sampling. Each module integrates qualitative and quantitative concepts through lectures and laboratory exercises. This course introduces practical knowledge and skills applicable to a wide range of career in industry, research and government.

GEOS 211	**CRN 37089**	**EARTH'S CHANGING SURFACE**	**20 PTS**	**T1**

Course Coordinator: (TBC)

Prerequisites: 30 pts from (ESCI 111, ESCI 112; GEOS101, GEOS 102)

Restrictions: ESCI 202

Humanity lives and depends on sedimentary environments (e.g., soil for farming, coastal plains for residence). Students will learn to interpret and explain the interactions that are occurring today between environment and climate change, Earth-surface processes, sediment movement, and landforms. On completion of the course, students will be able to both interpret how these interactions have changed in the past and predict how they may change in the future.

300-LEVEL COURSES

ENSC 301	CRN 18345	TOPICS IN ENVIRONMENTAL SCIENCE	20 PTS	T1

Course Coordinator: Dr Andrew Rees

Prerequisites: 90 points of 200-level study in approved subjects from the Science schedule

Co-requisites: ENSC 302 or 303; admission to the major in Environmental Science

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

ENSC 302	CRN 18346	DIRECTED INDIVIDUAL STUDY	20 PTS	T2

Course Coordinator: Dr Andrew Rees and Dr Dan Sinclair

Prerequisites: Permission from the Head of School

You will acquire employable skills needed in the environmental sector. These include hands-on field and lab work, geographic information system (GIS) mapping, site scoping and monitoring, data analysis, and project management. Throughout the course, you will investigate community concerns in the Kaiwharawhara catchment, such as the source-to-sink distribution of microplastics, the potential of heavy metal leaching from retired landfills, and the impact of fish passages on aquatic communities.

The Kaiwharawhara possesses significant cultural and ecological importance. It is the largest stream system in Wellington City, beginning at the globally unique urban ecosanctuary Zealandia Te Māra a Tāne, and is the only stream with an open estuary on Wellington Harbour. Our kaupapa will provide insights into the sensitivities of working in a colonised space, including the cultural significance and history of the area for mana whenua.

ESCI 341	CRN 15144	SEDIMENTARY FIELD GEOLOGY	10 PTS	T1

Course Coordinator: Dr Cliff Atkins and Dene Carroll

Prerequisites: ESCI 202, ESCI 241; 15 pts from ENGR 121-142 or any 100-level MATH, PHYS, QUAN, STAT or approved equivalent 15 further pts from (CHEM 113-122, ENGR 121-123, MATH 141–177, PHYS 142-145, QUAN 102-112, STAT 193)

Restrictions: ESCI 340

Field Trip: This will run from 5th – 11th February 2025. Students will be required to attend a half-day workshop on 4th February 2025

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

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

ESCI 342	CRN 15142	STRUCTUAL FIELD GEOLOGY	10 PTS	T1

Course Coordinator: Dr Carolyn Boulton

Prerequisite: ESCI 202, ESCI 203, 241; 15 pts from ENGR 121-142 or any 100-level
MATH, PHYS, QUAN, STAT or approved equivalent 15 further pts from (CHEM 113-122, ENGR 121-123, MATH 141–177, PHYS 101- 145, STAT 193)

Field Trip: This will run for 2 days in February before Trimester 1 and up to 6 days over the mid-trimester break in Trimester 1. All students will be required to attend a short workshop before and after the field school.

Field mapping and analysis of geological structures, including folds, thrusts, and active strike-slip faults. Students measure structural data, produce maps, and draw cross-sections of Kekerengu an area on the Kaikōura costs that provides a dramatic window into the tectonic evolution of Aotearoa New Zealand's landmass over the last 100 million years. Measurements and observations form the basis of a report on the structural history of this fascinating field area.

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

GEOG 312	CRN 6009	RACE, GENDER AND DEVELOPMENT	20 PTS	T1

Course Coordinator: TBC

Prerequisites: GEOG 212, 20 further 200-level pts or GLBL 201 or 40 approved 200-level pts

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

GEOG 312 is a compulsory course for all majors in Development Studies.

GEOG 313	CRN 18579	GEOGRAPHIES OF NEW ZEALAND	20 PTS	T3

Course Coordinator: TBC

Prerequisites: 20 200-level GEOG pts or approved courses for non-GEOG majors

Restrictions: GEOG 311

Field Trip: this course runs over three weeks. The first two weeks will consist of lectures, followed in the third week by a field trip in January 2026. Refer to online Course Finder for dates.

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

GEOG 314	CRN 6011	GLOBAL ENVIRONMENTAL JUSTICE	20 PTS	T2

Course Coordinator: Dr Eduardo Salazar Moreira

Prerequisites: GEOG 214 or GLBL 201

All environmental problems have human dimensions. Throughout the course, we will build an understanding of environmental issues as social issues by focusing on environmental justice. We will explore the causes of environmental problems, how problems are understood and experienced by different populations, and how communities work towards fairer environmental futures.

GEOG 314 is a compulsory course for all majors in Environmental Studies.

GEOG 315	CRN 6012	ADVANCED GIS: SPATIAL DATA SCIENCE	20 PTS	T2

Course Coordinator: A/Prof Mairéad de Roisté

Prerequisites: GEOG 215

In this course, students will focus on the manipulation, and analysis of spatial data by exploring the interdisciplinary applications of GIS across social, environmental, and earth sciences. Delve into advanced techniques for geospatial analysis, emphasising real-world problem-solving. Develop proficiency in handling complex spatial datasets and apply your skills to address multifaceted geographical challenges. By the end of the course, students will have a comprehensive understanding of advanced GIS approaches and their applications.

GEOG 316	CRN 6013	GEOGRAPHIES OF GLOABLISATION	20 PTS	T2

Course Coordinator: TBC

Prerequisites: (GEOG 212, 20 further 200-level GEOG pts) or GLBL 201 or 40 approved 200-level pts

In this course, students will analyse the impacts of globalisation from a geographical perspective. Students gain a deep understanding of the challenges, benefits and complexities of different processes of globalisation through a focus on their socio-economic, cultural and environmental implications around the world. This approach helps us to assess how globalisation processes influence equity, sustainability and justice different places.

GEOG 316 is a compulsory course in all majors in Development Studies.

GEOG 324	CRN 26058	RESEARCH PROJECT: DESIGN AND METHODS	10 PTS	T1

Course Coordinator: Dr Valentine Ibeka and Dr Stephen Piva

Prerequisites: 40 GEOG 200-level pts; STAT 193 or equivalent

In this course, students will learn different approaches and methods to research design in human and physical geography. Working in teams, you develop a proposal, budget, and field plan to research a current issue facing people and/or the environment in the Wellington region. Building communication skills, students work in teams to develop and present a group research proposal for a project (to be carried out in GEOG 325).

GEOG 325	CRN 26055	RESEARCH PROJECT: FIELDWORK AND ANALYSIS	10 PTS	T2

Course Coordinator: Dr Mirjam Schindler

Prerequisites: GEOG 324

Field Trip: Participation is a mandatory requirement of this course as fieldtrips and fieldwork take place in different sites according to students' project proposals developed in GEOG 324. Most fieldtrips and fieldwork take place within the first 2-4 weeks of Trimester 2.

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

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

GEOS 301	CRN 37119	HYDROLOGY AND FRESHWATER	20 PTS	T2

Course Coordinator: Dr Anya Leenman

Prerequisites: 15 pts from ESCI 111, GEOG 114 or GEOS 101; 15 pts from (GEOG 115 or 100-level MATH/PHYS/QUAN/STAT)

Restrictions: GEOS 201

This course equips students with the fundamental principles of hydrology and water management. Through practical exercises and theory, students will learn about hydrological processes, river dynamics, floods, and droughts. Students will then apply this theoretical knowledge to questions of water quality, resources, and management, as well as climate change impacts on hydrology. This course brings together lectures from a range of disciplines to discuss the crucial roles of freshwater in Aotearoa including alternative and indigenous perspectives.

GEOS 301 is a compulsory course for all majors in Climate Science.

GEOS 302	CRN 37090	MEASURING AOTEAROA'S DYNAMIC LANDSCAPE	20 PTS	T1

Course Coordinator: Dr Natasha Reznichenko

Prerequisites: ESCI 111 or GEOS 102

Restrictions: GEOS 202

In this course, students will investigate the unique forces that have led to the formation and evolution of Aotearoa's iconic landscapes, including te ao Māori perspectives. Students will gain an understanding of the processes through field expeditions to collect raw data from diverse landscapes around the Wellington region. Armed with tools ranging from sediment samplers to cutting-edge remote sensing devices, students will interpret field data and perform laboratory and computer analyses. Students will gain valuable skills in real-world data collection and presentation, equipping you with the practical expertise needed to quantify change at Earth's surface.

GEOS 304	CRN 37091	GEOHAZARDS AND RISK	20 PTS	T2

Course Coordinator: Prof Martha Savage

Prerequisites: 30 pts from (ESCI 111, ESCI 112; GEOS 101, GEOS 102)

Restrictions: GEOS 204

This course provides an understanding of major geohazard phenomena, from volcanic eruptions and earthquakes to tsunamis, landslides and beyond. Through field trips, hands-on exercises, and class-based learning, students will learn about geohazard identification and the potential for individual geohazards to cascade into multi-hazard events with wider societal and environmental effects. Students will develop skills in characterising and communicating the risks associated with geohazards. Students will also see how the knowledge they have gained in this course is used every day by the agencies responsible for monitoring and responding to geohazards in Aotearoa New Zealand.

GEOS 306	CRN 37119	PAST, PRESENT AND FUTURE ENVIRONMENTAL CHANGE	20 PTS	T2

Course Coordinator: Prof James Crampton

Prerequisites: one of (ESCI 202, GEOS 211, GEOS 311)

Restrictions: ESCI 301

Sedimentary deposits record past changes in Earth's surface environments and biosphere – a series of natural experiments that provide important context for the future of global change. Students will learn to use knowledge of processes operating today to interpret those past changes. These skills will then be used to both predict the impacts of modern environmental degradation and understand natural mechanisms of mitigation and adaption.

GEOS 306 is a compulsory course for all majors in Climate Science.

GEOS 307	CRN 37120	DEEP EARTH PROCESSES	20 PTS	T2

Course Coordinator: A/Prof Monica Handler

Prerequisites: 15 pts from GEOG 115 or 100-level MATH/PHYS/QUAN/STAT; GEOS 209 or GEOS 309

Restrictions: ESCI 302, ESCI 303, GEOS 207

In this course you will explore dynamic processes that shape our earth through tectonics, faulting, metamorphism, and magmatism. Through practical exercises and interactive lectures, students will learn about the principles of plate tectonics, earth structures and deformation, metamorphism and the generation and evolution of magmatic systems, with a focus on Aotearoa New Zealand. You will combine this theoretical knowledge with field and laboratory observations and learn how to link small-scale observations to large-scale tectonic processes.

GEOS 308	CRN 37121	SUSTAINABLE RESOURCES AND INFRASTRUCTURE	20 PTS	T1

Course Coordinator: Prof Rupert Sutherland

Prerequisites: 30 pts from (ESCI 111, ESCI 112, GEOS 101, GEOS 102); 15 pts from (GEOG 115 or 100-level MATH/PHYS/QUAN/STAT)

Restrictions: GEOS 208

Students will acquire practical understanding of theories and methods used for subsurface analysis, imaging, and sampling. The techniques underpin groundwater, geothermal energy, and mineral exploration and utilisation. Rock mass stability and site characterization underpin sustainable infrastructure development. The course comprised two modules: Theory and analysis of underground pore fluids, heat, stress, and rock failure; and Practical techniques for underground imaging, measurement, and sampling. Each module integrates qualitative and quantitative concepts through lectures and laboratory exercises. This course introduces practical knowledge and skills applicable to a wide range of career in industry, research, and government.

GEOS 314	CRN 37139	VOLCANIC FIELD GEOLOGY	10 PTS	TBD

Course Coordinator: TBD

Prerequisites: one of ESCI 241, GEOS 210; 20 pts from ESCI 204, GEOS 207, GESO 307

Methods and techniques for studying volcanic geology in the field. This course runs from Whakapapa in the Taupō Volcanic Zone (TVZ) of the central North Island. It examines the products of andesite and basalt eruptions from the Tongariro National Park volcanoes and some rhyolitic

products of Taupō volcano.

Note: The course involves hiking the majority of the Tongariro crossing and requires suitable levels of fitness and equipment. Accommodation is based in Whakapapa village and all assessment is completed by the end of the trip.

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

UNDERGRADUATE PROGRAMME COORDINATORS

Dr Polly Stupples	Geography	208	463 6793
Dr Marcela Palomino-Schalscha	Development Studies	210	463 5899
A/Prof Wokje Abrahamse	Environmental Studies	203	463 5217
Dr Andrew Rees	Environmental Science	214	463 9396
Dr Kyle Clem	Climate Science	225	463 6793
A/Prof Monica Handler	Earth Science	309	463 5391

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	303C	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
A/Prof Simon Lamb	Structural geology and tectonics	525	463 6428
Dr Anya Leenman	Fluvial hydrology and geomorphology	201	463 3900
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 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	222	887 4151

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

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Dr Bruce Charlier	Geochemistry Laboratory Manager	414	463 5865
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Barbara Lyndsell	Petrology Technician	319	887 3829
Dez Tessler	Technician – Field Support	318	463 6512

ANTARCTIC RESEARCH CENTRE

A/Prof Brian Anderson	Associate Professor	521	463 5176
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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
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Prof Tim Naish	Professor in Earth Sciences	508	463 6197
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