Bioluminescence - literally 'living light' - has evolved in a wide variety of fascinating organisms with many different purposes. It allows glow worms and anglerfish to lure food, fireflies to find a mate and nocturnal squids to camouflage themselves from predators and prey alike.

In this talk, Siouxsie will discuss her research using bioluminescence to tackle what the World Health Organisation Director General called "the end of modern medicine". She will also share how and why she's chosen to communicate her work with a wider audience.

Discover Aotearoa/New Zealand

Fieldwork courses

To find details on all courses offered, search online at: otago.ac.nz/subjects
Fieldwork courses in Humanities

**Archaeology**

**ANTH 324 Archaeological Practice**

Hands on and field trips to archaeological sites for recording and surveying. Examination of archaeological practice in applied and theoretical contexts, including field archaeology and resource management, with case studies from throughout the world. Training is provided in archaeological surveying and mapping.

**Geography**

**GEOG 101 Physical Geography**

A particular characteristic of Physical Geography is that it is ‘hands on’ and concentrates on the real world. To study the real world requires specific skills like mapping, remote sensing, data collection, field work and communication skills.

In GEOG 101 we will introduce you to the diverse physical environment and in practical sessions introduce skills that will enable you to apply your theoretical knowledge to real world problems. The skills learnt in this course are those used by researchers and professionals in many disciplines.

**GEOG 397 Environmental Management**

This course involves two one-day field trips and associated assessment regarding responses of societies to environmental problems, with emphasis on environmental management policy and practice in New Zealand, the South Pacific and Southeast Asia.

This paper provides an understanding of environmental management law, policy and process in New Zealand. It is an ideal introduction to environmental management for those majoring in subjects in the Sciences and Humanities who may wish to work in government departments, consultancies or local authorities.

**Te Tumu and Māori Studies**

**MAOR 108 Waiata: Te Tīmatanga**

An introductory study of various forms of waiata (Māori performing art) including haka from traditional to contemporary times. Wananga — weekend immersion style teaching from 9am - 4pm each day over two days to learn the practicum items required for the performance bracket, which will be performed in the final concert in front of an audience showcasing all the items that have been learnt.

**MAOR 213 Te Mana o Te Reo**

The history and development of the Māori language. Along with its cultural context and consequences, various contemporary issues facing the language will be addressed. A four-hour field trip gives non speakers of te reo an opportunity to interact/teach a simple activity to children in a total immersion Māori language speaking Kōhanga Reo (ECE level) environment.

**MAOR 303 Ngai Tahu and the Natural World**

An in-depth study of traditional Ngāi Tahu society and culture, with particular emphasis on their interaction with the environment and traditional forms of environmental management including a two-hour field trip to a wāhi tapu (restricted site) in the Leith Valley where the reasons for the restrictions on harvesting food from the water there are explained.

**MAOR 313 Te Hiringa Taketake**

Introduction to Māori pedagogy, with an emphasis on the concepts and social structure that are integral for teaching and learning in Māori contexts. A four-hour field trip gives students the chance to put into practise the pedagogies and theories they have just learnt about in class with students at the local Kura Kaupapa Māori.

The paper focuses on developing critical thinkers through understanding the principles of a critical pedagogy and, in particular, Māori pedagogy.

**Media Film and Communication**

**MFCO 216 New Zealand Cinema**

This paper is designed as a study of New Zealand cinema in its institutional and historical context with regard to some key issues and includes two visits/tours to the Hocken Library for research on a student-chosen paper based on New Zealand cinema.

These issues include: the political economy of filmmaking in New Zealand; the socio-historical context of both the subject matter and production environment of several films; problems that arise in trying to articulate precisely what “New Zealand cinema” is and, by extension, what New Zealand is and who New Zealand filmmakers are (and, for that matter, New Zealanders generally).

**MFCO 312 Communication and the City**

The consequences of evolving communication and media technologies for cities, how they are represented, and for urban economies and ways of life. In MFCO 312, we will examine how our experiences of cities, their formation and governance are influenced by communication technologies and practices including an ethnographic exercise e.g. going on the Dunedin Ghost Tour and reporting back via an essay.

**MFCO 330 Film Festivals**

Provides an historic, experimental introduction to the world of film festivals, field trips to Dunedin screenings of the New Zealand International Film Festival and behind-the-scenes tours of local cinema theatres. Practical assessments also include 1) being part of a “mock jury” judging a national film line-up and 2) curating your own film festival event.
Fieldwork courses in Business

Tourism

TOUR 214 Introduction to Wine Business

An introduction to the business of wine. One-day field trip to vineyards/wineries. The culture of wine, wine regions, sensory evaluation, structure of the industry, the market for wine, wine tourism, distribution and sales.

The wine industry and wine tourism are becoming increasingly significant aspects of the New Zealand economy. This paper provides students with an overview of the broad and diverse nature of wine business, with an emphasis on how wine and tourism intersect.

TOUR 219 Destination Management

This paper provides practical opportunities to engage with the external tourism sector. A highlight is the three-day, compulsory field trip, which enables the class to learn from the experience of tourism operators and planners at a destination.

The resulting class assessments further this practical component. This preparation provides you with the preliminary knowledge and skills to pursue a career that will lead to tourism development and planning roles upon completion of the degree.

TOUR 301 Cultural and Heritage Tourism

The nature of cultural and built heritage and their relationships with tourism. An afternoon field trip to local heritage operations Vogel Street and Toitū, and an afternoon field trip to the Hocken Archives.

Issues include: the management of cultural systems for tourism; the identification, promotion and development of heritage as a sustainable heritage tourism product.

This paper will engage students and practitioners interested in working in areas related to heritage tourism or heritage management. Past graduates have worked for the UK Arts Council, Heritage New Zealand, Department of Conservation and in a variety of museums and cultural arts capacities.

TOUR 306 Ecotourism and Sustainable Development

Historical context, development, structure of sustainably managed nature tourism and ecotourism including a one-day field trip to the Orokonui Ecosanctuary.

Definitions, principles, concepts and issues. Business and tourism management implications for ecotourism operations; ecotourism/nature tourism destinations; indigenous, community development reliant on the sustainable use of natural resources.

This paper will engage students and practitioners interested in working in areas related to nature-based tourism/ecotourism or protected-area management.

TOUR 418 Tourism Destination Development

Students will engage with tourism industry stakeholders in a regional destination (one-day field trip to Queenstown) to develop an operational tourism strategy. To stay competitive and relevant in today’s global economy, tourism destinations need to be ethically and sustainably developed, which will ensure their viability in the long run. Developing a successful destination is not a haphazard process, but involves careful and strategic management and planning.

This paper considers cutting-edge strategies related specifically to the management and development of tourism destinations in New Zealand and internationally.

TOUR 422 Tourism and Global Environmental Change

This course addresses the unique challenges associated with sustainable tourism development in relation to global environmental change. Afternoon fieldtrips include: The Leith River walk and Orokonui Ecosanctuary, and an afternoon/evening fieldtrip “from Boulder Beach to Pukekura.”

It is set within the broad context of sustainable development in neoliberal capitalist economies. TOUR 422 reflects the substantial growth of interest in the protection of the natural world and the management of natural areas in New Zealand and internationally.

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Fieldwork courses in Science

**Botany**

**BTNY 202 Plant and Fungal Diversity**

This course explores patterns of plant and fungal diversity with a particular emphasis on New Zealand. Field trips include visits to the Dunedin Botanic Gardens, to the Leith Saddle and a weekend day trip to the Leith Saddle to investigate podocarp forest to subalpine shrub land.

**BTNY 303 Topics in Field Botany**

This field-based paper aims to provide a hands-on understanding of New Zealand plant species, the populations and communities of which they are a part, and the ecological relationships with the environments in which they occur.

Students will become familiar with the major families and genera of plants that are significant in the New Zealand flora, as well as gain internationally applicable skills in identifying plants to species level using a range of diagnostic tools and documenting plant distributions via voucher specimen collection and documentation.

**Ecology**

**ECOL 111 Ecology and Conservation of Diversity**

Spend time down on the Otago seashore exploring species and population ecology; patterns of biodiversity; management of threatened species; evolution and environmental influences; how individuals interact with each other in populations, and with their physical environment.

**ECOL 211 Ecology of Communities and Ecosystems**

Visit the Orokonui Ecosanctuary, 340 hectares of predator-proofed New Zealand native bush and home to many rare and endemic species of birds and reptiles and learn how species interact, how these interactions build communities, how natural and human induced disturbances affect the integrity and sustainability of communities, and how an understanding of community and ecosystem-level processes can aid the restoration and management of natural areas for conservation.

**ECOL 212 Ecological Applications**

ECOL 212 emphasises research in action, and a major component of the paper is a weekend field camp, where you will be introduced to practical scientific skills and will develop a research proposal of your own. This paper is about the application of ecological theory and methods to contemporary issues in society.

Many challenges facing human society are fundamentally ecological in nature, such as invasive species, food security, freshwater pollution and public health.

**ECOL 313 Ecology Field Course**

Work in pairs to execute a study during a week-long field camp to the Catlin's region of the South Island, New Zealand in February. Students will research and design the study, analyse their data and present the results in oral and written reports.

Learn the techniques of field ecology; sampling strategies, design, procedures and equipment; an initiation to ecological research.

Students will gain experience with the scientific process by carrying out all steps of an independent research project.

**Geology**

**GEOL 302 Independent Field Studies**

Work independently to create, implement and complete your own independent field project. A range of geological skills are advanced, depending on the chosen project; these may be stratigraphy, mapping, facies analysis, petrography, structural analysis, geochemical or geophysical techniques.

**GEOL 273/373 Sedimentary Processes and Materials**

The fieldwork component of GEOL 273/373 consists of two weekend day trips (back-to-back) along the South Otago coast. Sediments are the key recorder of earth surface processes and environments through time. These are integrated field, laboratory and lecture papers designed to link sediments to their respective processes and environments.

**Marine Science**

**MARI 112 Global Marine Systems**

A varied and exciting introduction to the diversity of disciplines that constitute marine science. The lectures are complemented by hands-on practicals and field-trips utilising the University’s research vessels. In this paper we investigate all the important ocean systems and how they interact with each other.

We focus first on physical processes, then delve into marine biodiversity and ecology, with fascinating lectures on plankton, invertebrates and marine birds and mammals. Lastly, we discuss the enormously valuable resources extracted from the ocean, such as fisheries and tidal energy, and, consequently, how human activities are threatening the marine environment.

**MARI 202 Marine Invertebrate Ecology and Biology**

Two field exercises related to zonation, community structure and population biology increase student skills in teamwork, data collection, analysis, interpretation and written presentation.

MARI 202 introduces students to the diversity of marine invertebrate life, with emphasis on examples from the New Zealand region. Marine invertebrates are astoundingly diverse and interesting, conspicuous in every marine environment on the planet.

**MARI 301 Marine Ecology**

The seas around New Zealand and its Antarctic territories encompass a great diversity of marine habitats and endemic species, making this one of the most exciting places globally to study marine ecology.

During this paper you will have an opportunity to investigate the influence of a key functional group on abiotic and biotic factors with a hands-on field manipulation experiment. The fieldwork and laboratory sessions are designed to complement the lectures. Ecology of organisms living in intertidal, subtidal, and pelagic marine environments.
MARI 302 Biology and Behaviour of Marine Vertebrates

We’ll take you to sea on our research vessel to show you first-hand how commercial fishing methods work and the problems they cause – plus you’re likely to see seals and dolphins too! You’ll also get hands-on involvement in the dissection of a seal, a sea lion or a dolphin. In this course we study fish, marine reptiles, seabirds and marine mammals, focussing on how they solve the problem of living in the sea, and the conservation issues they face in the modern world.

NAUT 101 Nautical Studies 1

A theoretical and practical introduction to nautical studies. Students will gain an understanding of, and develop a critical approach to, issues such as maritime law and regulations, in-shore navigation, and maritime communications. Practical issues such as health and safety at sea, and seamanship will also be covered.

The sea is a complex and challenging environment for the scientist. This paper will help the student to understand how to cope with the physical challenges involved in working at sea, understand how to avoid legal pitfalls, understand how seafarers approach their professional responsibilities, understand how to work as a team at sea and use basic maritime navigational equipment.

Oceanography

OCEN 201 Physical Oceanography

An exploration of topical global and local oceanographic, chemical and geological issues important for understanding and managing the marine environment. Want to understand the fundamental processes that govern the physical state of the world’s oceans? Then this is the paper for you.

We focus on giving a solid foundation in the physical oceanic processes that shape our oceans: from the processes that drive large-scale ocean circulation, which takes years or centuries to traverse the globe and plays a critical role in our changing climate system, to the processes that transport sand, mud and silt around the ocean basins and our coastlines, and which are key to addressing many environmental and geophysical problems.

OCEN 301 Practical and Field Oceanography

Are you looking for a hands-on, no-holds-barred experience in oceanographic research? We start with six weeks of lectures and practical experiences looking at the fundamentals of gathering data at sea.

We will develop our skills on vessels of different sizes and in the lab. Then, over mid-semester break, we will carry out an intensive field course at Rakiura/Stewart Island, where we’ll gather data, make measurements and (no doubt) battle the elements. We’ll take this data back to the University and learn how to describe, analyse, present and interpret them.

A final research report will be the main assessment - no exam in this paper.

OCEN 323 Marine Geology and Geophysics

The seafloor holds clues to the history of our planet. Join us in OCEN 323 to unravel the mystery. Along the way, you will become comfortable using tools like GeoMapApp to visualise marine geological data, build skills in the critical evaluation of scientific literature, and design and carry out your own research project, starting with fieldwork aboard the University research vessel Polaris II. We think you’ll love this voyage of discovery.

Physical Education

PHSE 320 Akoranga Whakakori: Māori Physical Activity and Health

An introduction to the social and educational significance of physical activity from a Māori perspective. Māori are the indigenous peoples of Aotearoa New Zealand and are often represented negatively in the public imagination.

There is one compulsory noho marae (stay at a traditional Māori meeting house) that aims to provide an applied understanding of the paper.

PHSE 325 Dance and the Community

This paper will analyse the role of dance in the community. It will analyse the conceptual framework of community dance and explore the relationship between dance as an artistic, social, educational and therapeutic practice within various communities.

The notion of ‘community’ will be unpacked, with a particular focus on specific communities in respect to their identity and needs and involving participatory field work. A particular focus of the paper will include the role of dance in communicating eco-socio-political community issues and culture.

PHSE 329 Sport Technology

This paper will consider new and emerging ways in which athletic behaviour can be measured and modified. A combination of stimulus lectures, seminar discussions, practical workshops and offsite visits will be used.

How various applications of technology have influenced the way that sport is played. Students will be required to critique the relationship of sport and technology from a multidisciplinary perspective.

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Surveying

SURV 101 Introductory Surveying

An introduction to basic surveying principles, techniques, instruments and computational procedures. It is offered with lectures, tutorials and weekly outdoor practicals in the first semester. The practical hands-on component involves the use of various surveying instruments and measurement methods. SURV 101 introduces students to basic survey theory knowledge, measurement skills and basic surveying calculations.

Zoology

ZOOL 221 Animal Designs for Living

The body plans of, and the relationships among, major animal phyla are examined using local fauna. Three field trips generate data that is manipulated and presented in report form.

This paper is essential for students majoring in Zoology, but also of importance to Ecology majors and indeed anyone wanting to understand the diversity of animal life in New Zealand and around the world.

ZOOL 315 Behavioural and Evolutionary Ecology

The behavioural ecology of reproduction and survival — independent research projects are conducted involving behavioural work with live animals both in the field and in the lab.

The aim of this particular paper will be to understand why different species behave in different ways and why, within species, there may be individual differences in behaviour.

ZOOL 318 Freshwater Ecology

This paper introduces students to basic and applied concepts in freshwater ecology and allows them to carry out independent research. Practicals consist mainly of group work in which students experience the scientific process from start to finish: designing, executing and presenting a freshwater ecology research project.

Lecture material covers physical, chemical and biological processes in freshwater and the role of freshwater species in their food web and ecosystem.