GEOG299 Freshwater Resources: Monitoring and Management

COURSE DELIVERY

Lectures

Two 1 hour lectures per week (In person & online)

Practicals

Get hands-on in-river experience collecting water samples; data processing and analysis of water quality data.

Four 3-hour practicals (two streams available)

Physical and human processes affecting water quality of rivers, groundwater and wetlands.

This paper will develop introductory skills related to hydrology, and competence dealing with hydrological datasets. There is a focus on global and national issues on freshwater resources, as well as the key environmental issues surrounding water allocation.

Course content modules:

1

Water Contaminants

How does nitrogen, phosphorus, bacteria, heavy metals and emerging contaminants get into the hydrological cycle?

2

Land Use Impacts on Water Quality

What is the impact of agriculture, cities, plantation forestry, or industry on water quality?

3

Management & Mitigation Strategies

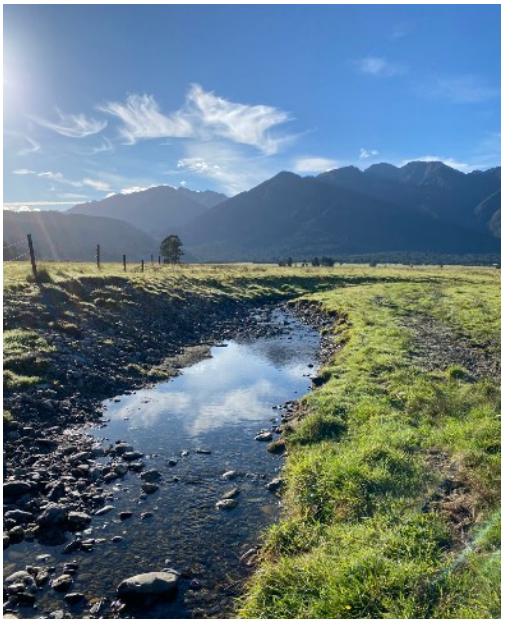
What tools can we use to maintain and improve our water quality, and are they sustainable?

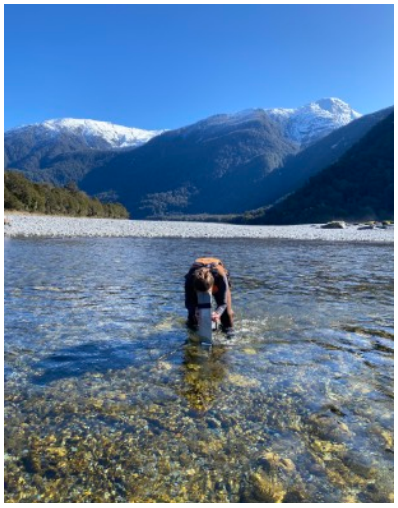
GEOG299 Freshwater Resources: Monitoring and Management

Fresh water is a globally finite resource that is increasingly under pressure due to water degradation and allocation.

GEOG299/399 will introduce you to the physical and chemical characteristics of water, and develop practical field, laboratory and analytical skills for the interpretation of water quality data. The programme is comprised of two core elements, first understanding and quantifying water quality of freshwater bodies, and the second is developing an understanding of the issues of water scarcity, allocation and management of water resources.

The course focuses on physical indicators of water degradation, field sampling techniques, and the analysis of water quality data.





Assessment

Assessment is 50% internal (on-going during the semester) and 50% external (final examination)

Course Outcomes

In this course you will:

1. Gain practical experience sampling and interpreting water samples;
2. Gain analytical experience measuring standard water indicators;
3. Be familiar with water resource issues globally and nationally;
4. Understand the physical and human drivers of water scarcity;
5. Understand the impact that changing land use has on water quality.

Study towards jobs in Water Resource Management & Hydrology

Geog299 is designed to introduce you to the core skills used every day by water resource managers, planners and professional hydrologists, both in New Zealand and abroad! Hydrology is a highly valued industry job with employment opportunities in local and central government, consultancies and engineering firms, NGOs, and the agriculture sector.

The course is delivered by Dr Sarah Mager, a member of the executive board of the New Zealand Hydrological Society, with specialist research interests in surface water quality and quantity.