



University
of Otago

ŌTĀKOU WHAKAHIU WAKA

NEW ZEALAND

GEOG288 Rivers and Runoff



COURSE DELIVERY

Lectures

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

Practicals

Get hands-on in-river
experience measuring water
volumes using different
techniques.

Four 3-hour practicals

(two streams available)

This paper forms an introduction to the hydrological cycle and the movement of water. Classes are designed to outline the core issues of contemporary surface water hydrology, as well outline appropriate techniques and limitations to measuring water resources. The course emphasises practical and hands-on experience with real hydrological data and an opportunity to observe and measure hydrological variables.

Course content modules:

1

CATCHMENT WATER BALANCE AND FLUXES

How water moves
through landscapes,
from rainfall to rivers.

2

FLOW RECORDS & HYDROGRAPHS

Making sense of river
flow data using
hydrographs and
statistics

3

FLOW MECHANICS AND CHANNEL HYDRAULICS

Why water flows the
way it does in real river
channels

4

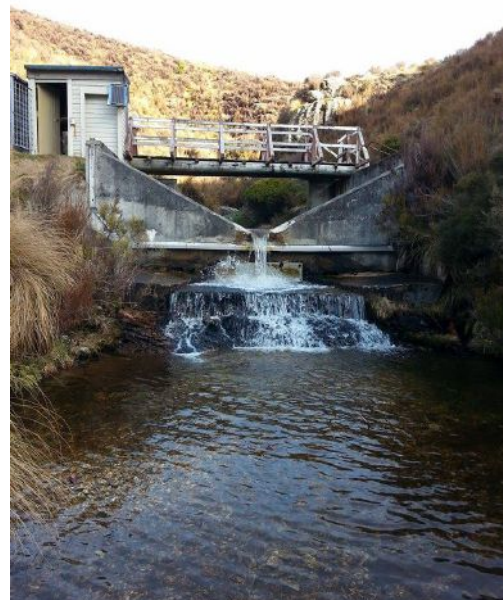
SEDIMENT DYNAMICS AND SYSTEM ADJUSTMENT

How rivers shape and
reshape landscapes
over time

GEOG288 Rivers and Runoff

Fresh water is a globally finite resource that is increasingly under pressure due to over allocation and a changing intensity of the hydrological cycle.

The lecture programme includes the properties of water, atmospheric processes, precipitation measurement, evaporation and transpiration, river behaviour, discharge measurement, and practical applications of hydrological understanding. Classes are designed to outline the core issues of contemporary surface water hydrology, as well outline appropriate techniques and limitations to measuring water resources. The course emphasises practical and hands-on experience with real hydrological data and an opportunity to observe and measure hydrological variables.



Assessment

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

Course Outcomes

In this course you will:

1. Acquire an understanding of the hydrological cycle
2. Understand the principles behind different field techniques
3. Learn how to measure streamflow and decide which method is suitable for different conditions
4. Apply theoretical understanding to real scenarios.

Study towards jobs in Water Resource Management & Hydrology

Geog288 is designed to introduce you to the core skills used every day by water resource managers 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.

