

Flow and water quality in streams: Theory and practice (2 credit) 001.2.0027

Aims:

Learn the theory and practice field methods that are fundamental to measure discharge in streams. On successful completion of this course students will be able to:

1. Measure flow in streams using various methods.
2. Understand and quantify discharge in streams.
3. Understand, quantify, and analyze flow problems in streams.

Course contents:

- 1) **Physical characteristics of streams**
- 2) **Stream gauging techniques**
- 3) **Streamflow data quality and uncertainty**
- 4) **The hydrometric station and its hydraulic controls**
- 5) **Simple and complex rating curves**

Field trips:

Field trip 1- Practice the measurement of velocity and discharge in streams

Field trip 2- Gauging stations- dry and perennial gauging stations

Grade and Requirements:

- The final grade will be based on home assignments (70%) and field work reports (30%).

Literature:

- Open-channel Flow (M. Hanif Chaudhry)
- Stream Hydrology: An Introduction for Ecologists (Nancy D. Gordon, Thomas A. McMahon, Brian L. Finlayson, Christopher J. Gippel and Rory J. Nathan)
- Methods in Stream Ecology (F. Richard Hauer and Gary A. Lamberti).

Prerequisite: Introduction to hydrology. Please consult with the lecturer before registration

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