

Transport processes in streams: Theory and practice (2 credits) 001.2.5065

Aims:

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

1. Understand and quantify transport processes.
2. Understand the link between the physical structure of streams and their effect on transport processes.
3. Quantify transport processes in streams for solving water quality problems.

Course contents:

1) Introduction to streams

2) Aquatic chemistry

3) Transport mechanisms

4) Transport processes in streams

5) Modeling transport processes in streams (advection dispersion, nutrient spiraling, Bedflow model)

Practice:

Field trip 1- Nutrient spiraling in streams

Laboratory exercise- Modeling particle transport in streams

Grade and Requirements:

- The final grade will be based on home assignments (60%) and field/lab reports (40%).

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+ Flow in streams: Theory and practice. Please consult with the lecturer before registration

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