ENV-523

Hydrogeophysics

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Cursus	Sem.	Type
Environmental Sciences and Engineering	MA2, MA4	Opt.

Language of teaching	English
Credits	3
Session	Summer
Semester	Spring
Exam	During the semester
Workload	90h
Weeks	14
Hours	**3 weekly**
Lecture	2 weekly
Exercises	1 weekly
Number of positions	

Summary

This course aims at providing a solid methodological foundation for understanding the principles and applicabilities of geophysical techniques relevant for addressing hydrogeological and related environmental problems. The goal is to provide students with pertinent decision making capabilities.

Content

Surface- and borehole-based geophysical techniques suitable for the characterization of the vadose and saturated zones

Keywords

applied geophysics, hydrogeophysics, soil and rock physics, groundwater, vadose zone, saturated zone

Learning Prerequisites

Important concepts to start the course

Basic knowledge and interest in subsurface hydrology and soil physics

Learning Outcomes

By the end of the course, the student must be able to:

- Assess / Evaluate
- Decide
- Analyze

Transversal skills

- Communicate effectively with professionals from other disciplines.
- Give feedback (critique) in an appropriate fashion.
- Use a work methodology appropriate to the task.

Teaching methods

Lectures, exercises, self-learning

Expected student activities

exercises, literature study

Assessment methods

100 % continuous control:
50 % exercises during the semester
50 % written final exam at the end of the semester

Supervision

Office hours	Yes
Assistants	No
Forum	No
Others	Communication via moodle and informal meetings upon agreement.

Resources

Bibliography

Recommended:
Rubin, Y., and Hubbard, S., (eds.), 2005, Hydrogeophysics,Springer.
Complementary:
Kirsch, R., (ed.) 2006, Groundwater Geophysics, Springer.

Ressources en bibliothèque

- Hydrogeophysics / Rubin
- An Introduction to Geophysical Exploration / Kearey
- Groundwater Geophysics / Kirsch

Websites

- https://moodle.unil.ch/course/view.php?id=15231