- Faculté des sciences
- www.unine.ch/sciences

Hydrogeophysics and borehole geophysics (3GH2211)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en hydrogéologie et géothermie	**Cours: 28 pg**	**Voir ci-dessous**	3

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Printemps

Equipe enseignante

Klaus Holliger (Unil)
Benoît Valley

Contenu

This course covers the main surface geophysics and borehole geophysics techniques relevant for hydrogeological studies.

The section on surface geophysics covers:
- Principles of soil et rock physics
- Geoelectric methods
- Induced polarization
- Self-potential method
- Electromagnetics
- Ground penetrating radar (GPR)
- Nuclear magnetic resonance

The section on borehole geophysics covers:
- Downhole logging principles
- Overview of logging techniques
- Detailed study of most relevant techniques for hydrogeology and geothermics
- Field acquisition of borehole logging data
- Field data processing and reporting

Forme de l'évaluation

CA graded.
The mark will be the combination of (weighted average):
• 30% exercises on surface geophysics
• 30% written test on surface geophysics
• 40% report on borehole borehole geophysics

Modalités de rattrapage

In case of failure, an oral examination will be arranged in consultation with the course responsible professors.

Documentation

The relevant documentation will be provided by the instructors during the courses.

Pré-requis

none

Forme de l'enseignement

Course et field practicals

Objectifs d'apprentissage

Au terme de la formation l'étudiant-e doit être capable de :

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- Interpret geophysical data
- Analyse simple geophysical datasets
- Enumerate the various exploration geophysical technics from surface and in borehole

Compétences transférables

- Communicate data in the form of a report