

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

### Urban hydrogeology (3GH2187)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
<b>Master en hydrogéologie et géothermie (*)</b>	<b>Cours: 20 pg</b>	<b>controle continu: 1</b>	5

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

#### Période d'enseignement:

- Semestre Automne

#### Equipe enseignante:

Mario Schirmer

#### Objectifs:

The course will provide an overview on urban hydrogeology. Similarities and differences of hydrogeological investigation techniques in comparison to conventional hydrogeology will be discussed. Focus will be given on the challenges to work in cities and other sites with complex subsurface infrastructure.

#### Contenu:

- Introduction to urban hydrogeology: urban water fluxes, water balance, urban contamination and micropollutants, flux calculations, surface water ↔ groundwater interactions
- discussion of method to calculate groundwater travel times between rivers and monitoring wells
- case study of hydrocarbon accident with site investigation and remediation technologies
- exercises

#### Forme de l'évaluation:

Course assignments.

In case of failure at the course assignments, the students will do an oral test of 15 minutes on a date defined by the teacher.

#### Documentation:

- course notes as handouts
- solutions to all exercises available on request

#### Pré-requis:

basic calculus and physics  
basic understanding of hydrogeological investigation techniques  
basic geology

#### Forme de l'enseignement:

Theory and corresponding exercises are presented and solved during the course

(\*) Cette matière est combinée avec d'autres matières pour l'évaluation