

PENS-205

**L'eau source du territoire**

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Cursus	Sem.	Type
Projeter ensemble ENAC	BA4	Opt.

Langue d'enseignement	français
Crédits	4
Retrait	Non autorisé
Session	Eté
Semestre	Printemps
Examen	Pendant le semestre
Charge	120h
Semaines	
<b>Heures</b>	<b>48 hebdo</b>
Cours	4 hebdo
Exercices	22 hebdo
Projet	22 hebdo

**Nombre de places**

**It is not allowed to withdraw from this subject after the registration deadline.**

**Résumé**

Students of this ENAC week will work on the fountains in the Valais, notably on their microbiology, sociology and geography in the Alpine space. Work will take place at the crossroads of microbial ecology, urban development, sociology, geography and art.

**Contenu**

Fountains are major landmarks in the Swiss cultural landscape. Historically, they were critical for drinking water supply and hence vital for urban and rural populations including their social interactions. At the same time, fountains structured the urban development and the evolution of the territory. Fountains entail infrastructure enabling the transportation of clean water from the source to the urban and rural milieu. With the onset of tap water and sophisticated drinking water distribution systems, the role of fountains has dramatically changed.

Fountains are not only nodes for social interactions and the provisioning of clean water to the human population. Fountains also include abundant microbes that construct their own "cities" in a manmade landscape. Like humans, microbes interact within and between fountains, eventually conducive to microbial interaction networks across various scales of the landscape. Microbes in fountains may have adverse effects on the prime purpose of the fountain, namely that of providing clean drinking water. Microbes therefore integrate the watery landscape of fountain networks and can affect human well-being.

This Semaine ENAC results from ongoing interactions between LaSUR (SAR), LAB-U (SAR) and SBER (SIE) and from their interactions with the art project MATZA. Students will identify water distribution networks feeding fountains in the Valais and relate these to the structure and evolution of the territory. They will study how the spatial configuration of fountains affects interaction networks of microbes, and how these can be related to the source and quality of the water. Using such an interdisciplinary approach, students will learn to think outside the box and to acquire a broader perception of their "macrobial" and "microbial" work with water provisioning in its very center.

**Mots-clés**

water, drinking water, fountains, microbes, territory, landscape, distribution systems, architecture

**Acquis de formation**

A la fin de ce cours l'étudiant doit être capable de:

- Enoncer les enjeux eco-hydrologique, territoriaux et microbiologiques des fontaines
- Visualiser de manière originale des données d'observation
- Composer dans un travail cartographique et textuel des données d'origines diverses (images, statistiques, mesures, etc.)
- Conduire une enquête interdisciplinaire et comparative sur les fontaines
- Analyser les liens entre les fontaines et des enjeux sociaux et microbiologiques
- Elaborer une réflexion sur l'apport des métiers du territoire aux enjeux de domestication de l'eau

### Méthode d'enseignement

The Semaine ENAC will take place in the Valais (Sion or Sierre, and surrounding) with the goal to focus students on a research topic in its autochthonous landscape and out of their daily context to strengthen interdisciplinarity.

*Travail d'enquête* : Students will work in small groups (4 to 5 students) on various topics and facets across disciplines. They will be exposed to oral presentations from experts in the various fields, they will form reading and discussion sessions, they will have access to data repositories and they will do field work.

*Transmission de savoir* : Students will elaborate their projects at group level, which will be discussed on a daily basis with the teachers. Presentations will introduce students to the required technical tools and allow insights into conceptual knowledge. Students will be closely guided and supervised in the use of techniques and tools. The dialogue between students and teachers will also help to improve the soft skills of the students.

### Travail attendu

Students will work in groups and work progress will be evaluated on a daily basis. Each group must give a final oral presentation to explain the goal of their research, the major question and findings, and conclusions. Each group must deliver a written report stating the contribution of each student to its achievement.

### Méthode d'évaluation

Final oral presentation (15 min) (40%) plus poster presentation (30%). Engagement and active participation during the SE will be credited with 30%.

### Encadrement

Office hours	Oui
Assistants	Oui
Forum électronique	Non