PENS-219

Hidden rivers

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Cursus	Sem.	Type
Projeter ensemble ENAC	BA4	Opt.

Language of teaching	English
Credits	4
Withdrawal	Unauthorized
Session	Summer
Semester	Spring
Exam	During the semester
Workload	120h
Weeks	
Hours	**48 weekly**
Courses	4 weekly
Exercises	22 weekly
Project	22 weekly
Number of positions	

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

Summary

In light of recent pollution events of the Sorge and La Chamberone, we assess the ecological, social and economic bases for safeguarding the river, creating phased scenarios for 'research by design' projects.

Content

On Tuesday morning October 10 (2017) two rivers, the Chamberonne and the Mèbre, were heavily polluted by a "black and sticky liquid" dumped in large quantities in Chavannes-près-Renens, near the University of Lausanne. Among the factors that led to this apparently unprecedented ‘pollution event’ was the fact that these rivers are largely hidden from public view, allowing someone to sidle up to the river with barrels of petroleum waste and illegally deposit this material. Following UNIL’s exemplary Forêt de Dorigny conservation area, this course bring these sensitive waterways – which harbor some of the region’s most delicate ecological niches, slopes subject to erosion, and are at the heart of the region’s hydrological system – into the public mind by bringing these hidden rivers to light.
To this end, this course is given in collaboration with the journalist who broke the story, starting with the causes of the recent disaster and public responses to it, while looking closely at these waterways and their implicit ecological qualities, and finally considering how these can be conserved and further cultivated – effectively serving pedagogical, practical and policy objectives – while also allowing for enhanced public access, bicycle paths, and community interactions: all of which will bring eyes on the river.
The basic premise of the course is first- hand ‘nature study’, collectively producing an inventory of biodiversity along the riverways – but also within them, revealing microbial life otherwise hidden. This will involve taking the river and its context as the subject for disciplinary interaction, assessing the ecological, social and economic bases for safeguarding the river – resulting in viable design scenarios for the phased implementation of a series of interventions involving the bottom--up interests of those communities adjacent to the river given top--down support from EFPL, UNIL and Canton Vaud.

Keywords

Park systems; water systems; civic design; regional design; research by design; ecological inventory; bottom-up, top-down projects; ecological conservation; sustainable development; transdisciplinarity

Learning Prerequisites

Important concepts to start the course

Following the 1992 amendment to the Swiss Constitution, stating that the purpose of the constitution is to 'ensure the dignity of living beings', the course will emphasize the ethical paradigm in which ecological

cycles are prioritized, as distinct from ecological services.

Learning Outcomes

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

- Sketch Rivers Sorge and La Chamberonne
- Hypothesize on human/ecology dynamics
- Propose ecological buffer zones
- Contextualise pedagogy, policy and practice
- Contextualise ecological inventory
- Analyze environmental monitoring and DNA sequencing
- Compare river Aire vis a vis La Chamberonne
- Report outcomes prepared for press

Transversal skills

- Set objectives and design an action plan to reach those objectives.
- Plan and carry out activities in a way which makes optimal use of available time and other resources.
- Use a work methodology appropriate to the task.
- Communicate effectively, being understood, including across different languages and cultures.
- Communicate effectively with professionals from other disciplines.
- Evaluate one's own performance in the team, receive and respond appropriately to feedback.
- Identify the different roles that are involved in well-functioning teams and assume different roles, including leadership roles.
- Take responsibility for environmental impacts of her/ his actions and decisions.

Teaching methods

In interdisciplinary projetct teams, students will develop project proposals through 'research by design'. Each team will be mentored by an advisor from another discipline (i.e. journalist, ecologist, landscape, etc.). At the end of the week students will present their projects to a panel of jurors, who will assess the work.
PRACTICE: Students will engage in community outreach, and in creating an ecological inventory; the project design experience will provide an introduction to 'research by design' through interdisciplinary mentorship (journalist, architect, ecologist, fisherman, etc.) and through state of the art of biodiversity monitoring, modern molecular analyses, bioinformatics and complex visualization techniques.
IDEATION: The research of design precedents will be reinforced with a 'disciplinary diagram' exercise. These disciplinary relations will highlight the following principles between nature and culture: ecology and 'optionality', 'genius loci' and the zeitgeist
ANALYSIS: Design analysis will reveal existing conditions through 'elicitive modeling'. A key initial outcome will demonstrate the 'where-not-to-build' method (P.Lewis), and the principle of 'relational space' (J.Levy). These will be further llustrated by first-hand observation of *diversities* in microbial samples, in flora and fauna, and in the local community.
SYNTHESIS: The project will employ a 'dialogic' framework - open-ended and inclusive of stakeholders interests - yielding an inventory of biodiversity, including a novel methodology of environmental DNA sequencing interpreted through 'deep listening' and diagram exercises, revealing otherwise unseen diversity along the riverways.

Expected student activities

Participation in the courses, including group work; successful completion of the 'research by design' project, including drawings for presentation and a project report.

Assessment methods

Assessment will be made on the basis of the final presentations on the last day of the course, as well as those submitted

materials noted above.

Supervision

Office hours	No
Assistants	Yes
Forum	No

Resources

Virtual desktop infrastructure (VDI)

No

Websites

- https://habitat.epfl.ch/
- https://sber.epfl.ch/
- https://lab-u.epfl.ch/
- https://www.newyorker.com/business/currency/top-down-bottom-up-urban-design