

ENV-422

**Applied ecology**

Grossiord Charlotte

Cursus	Sem.	Type
Computational and Quantitative Biology		Opt.
Environmental Sciences and Engineering	MA1, MA3	Opt.
Territories in transformation and climate minor	H	Opt.
Urban Planning and Territorial Development minor	H	Opt.

Language of teaching	English
Credits	4
Session	Winter
Semester	Fall
Exam	During the semester
Workload	120h
Weeks	14
<b>Hours</b>	<b>4 weekly</b>
Courses	2 weekly
TP	1 weekly
Project	1 weekly
<b>Number of positions</b>	

**Summary**

The course will provide the ecological systems knowledge needed to question applied sustainability solutions. We will critically assess the complexity of current environmental issues, illustrating basic ecological concepts and principles.

**Content**

The course combines elements of a classic lecture, group discussions, problem-based learning and fieldwork. Our aim is to balance participants' respect for complexity with a sense of possibility by providing examples from the vast solution space offered by ecological systems, such as e.g. green infrastructure to manage water. The class will include three excursions where the students will have the opportunity to discuss critical ongoing problematics faced by environmental managers.

**Keywords**

applied ecology, resource management, forest ecosystems, trees, community ecology, species interactions, ecosystem functions and services, biodiversity, climate change

**Learning Prerequisites****Recommended courses**

Fundamentals in Ecology (ENV 220)

**Expected student activities**

- Understand the complexity of interactions and structures in ecosystems. Know how ecosystem processes, functions and services interact and feed back across multiple spatio-temporal scales (in general, plus in-depth case examples);
- Understand that biodiversity and the interaction between organisms are an integral part of ecosystems. Being aware that the link between biodiversity and process/function/service is rarely fully understood. Know how to honestly deal with this lack of understanding and can nevertheless find, critically analyze and communicate solutions.
- Understand the importance of ecosystem services for society.

**Assessment methods**

Oral presentation (50%, individual grade) and written report (50%, group work)

**Resources**

**Moodle Link**

- <https://go.epfl.ch/ENV-422>