

ENV-321

**Aquatic ecosystems**

Battin Tom Ian, Peter Hannes Markus

Cursus	Sem.	Type
Environmental Sciences and Engineering	BA6	Opt.
HES - SIE	E	Opt.

Language of teaching	English
Credits	3
Session	Summer
Semester	Spring
Exam	Written
Workload	90h
Weeks	14
<b>Hours</b>	<b>3 weekly</b>
Courses	2 weekly
Project	1 weekly
<b>Number of positions</b>	

**Summary**

Inland waters are now being recognized as major players of global biogeochemical cycles. They also provide essential ecosystem services such as fresh water and fish, and link continental processes with atmospheric and marine processes. The understanding of the structure and function of inland water

**Content**

1. Introduction and a brief history of the freshwater science
2. The physical basis of lotic and lentic ecosystems
3. Nutrient cycling in inland waters and the connection to marine anoxia
4. Ecosystem metabolism
5. Inland waters and the global carbon cycle
6. Biodiversity dynamics and metacommunity ecology
7. The relationship between biodiversity and ecosystem functions and services

**Keywords**

Inland waters, streams, rivers, lakes, wetlands, groundwater, ecosystem ecology, biogeochemistry

**Learning Outcomes**

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

- Argue why inland waters matter for global societal and environmental issues
- Assess / Evaluate the basic hydrodynamics and hydraulics for ecosystem processes in inland waters
- Analyze the link between biogeochemical processes in inland waters and the coastal ocean
- Derive an understanding of aquatic ecosystem functions from biodiversity patterns
- Describe key mechanisms of metacommunity ecology
- Assess / Evaluate ecosystem metabolism in inland waters

**Teaching methods**

Power point presentations

**Expected student activities**

Interactions and discussions with teachers

Feedback and respond to questions

Feedback in an appropriate manner on the content and its presentation

**Assessment methods**

Final written exam (100% of the final grade).

### **Supervision**

Office hours	Yes
Assistants	Yes
Forum	No
Others	Tuesday 11:00 to 12:00
	Assistants:
	Asa Horgby, Marta Boix Canadell