Freshwater Ecosystem Functioning

2025 - 2026

Is part of the next programmes:

- M0003004 Master of Biology: Biodiversity, Conservation and Restoration

- M0037000 Master of Science in Marine and Lacustrine Science and Management

- M0047002 Master of Biology: Global Change Biology

- M0047001 Master of Biology: Biodiversity, Conservation and Restoration

- N0057000 MNM Water Sustainability: Integrating Technology- and Nature-based Solutions

- U0001008 Courses open to exchange students in Sciences

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Course Code:	2201WETFEF
Study Domain:	Biology
Semester:	2E SEM
Contact Hours:	30

Credits:	3
Study Load (hours):	84
Contract Restrictions:	No contract restriction
Language of Instructions:	ENG
Lecturer(s):	T Jonas Schoelynck C Tomasz Okruszko
Examperiod:	exam in the 2nd semester

1. Prerequisites *

speaking and writing of:

- English

reading and comprehending of:

- English

general notion of the basic concepts of

Biology, Ecology

specific prerequisites for this course

None

2. Learning outcomes *

- Students know the different types of aquatic and wetland habitats.
- Students have in depth insight in wetland hydrology (water quality and water quantity), river hydrodynamics, and aquatic biogeochemistry.

- Students understand the complex relations between the water quantity, quality, nutrients and biota.
- Students understand how climate change will affect the ecohydrological functioning of rivers and wetlands.

3. Course contents *

In the introduction an overview is given of the different types of rivers and wetlands ecosystems, their characteristics, distribution and major threats. The main body of the course consists of three parts. The first part describes the basics of river hydrodynamics (discharge, flow characteristics, sediment transport and the basics of hydrodynamic models) and wetland hydrology (ground water flow, precipitation, groundwater models). The second part zooms in on the chemical characteristics and biogeochemical processes in the pelagic and benthic compartments and on how these compartments interact (sediment-to-water fluxes, water-to-atmosphere fluxes). The third part considers how particular functional traits allow plants to survive the specific conditions of rivers and wetlands. Finally, this in depth understanding of the ecohydrological functioning will be used to get insight in the consequences of global change on these habitats.

4. International dimension *

- This course stimulates international and intercultural competences.
- Students use course materials in a foreign language.
- The lecturer invites international guest lecturers.
- Students give presentations in a foreign language.
- Students reflect on their own cultural frame of reference in relation to other perspectives.

5. Teaching method and planned learning activities

5.1 Used teaching methods *

Class contact teaching

- Lectures
- Seminars/Tutorials
- Guest lectures

Personal work

Assignments

- In group

Paper

- In group

5.2 Planned learning activities and teaching methods

Lectures will not be recorded. Some lectures have prerecorded powerpoints which will be made available through Blackboard.

5.3 Facilities for working students *

Classroom activities

- no specific facilities
- Exercise sessions: free to choose the group division
- Seminars/tutorials: alternative assignment possible

6. Assessment method and criteria *

6.1 Used assessment methods *

Examination

- Written examination without oral presentation
- - Multiple-choice
- - Open-question

6.2 Assessment criteria *

MC: questions with multiple optional answers. Only 1 answer is correct. No points are reduced for a wrong answer. The MC accounts for 62.5% of the total.
Open questions: mostly explain a figure or a graph. All details relevant to the question must be given. The open questions account for 27.5% of the total.

7. Study material

7.1 Required reading *

powerpoints, given through blackboard

7.2 Optional reading

The following study material can be studied voluntarily :

paper, given through blackboard

8. Contact information *

jonas.schoelynck@uantwerpen.be

9. Tutoring