

Wetlands (2024)

Name of course: Wetlands (2024)

ECTS credits: 5 ECTS (European Credit Transfer System)

Course parameters

Language: English

Level of course: PhD (Masters and young researchers with strong interest are also welcomed)

No. of contact hours/hours in total incl. preparation, assignment(s) or the like: 125 hours in total, including lectures, exercises, lab and field trips, and assignments, as well as one week of preparatory reading

Capacity limits: 15

Objectives of the course:

The course aims to provide participants with a deeper understanding of:

- the role of wetlands and their relationship with climate change,
- policy initiatives and development targets to restore wetlands/peatlands in Europe
- wetlands restoration trade-offs and controversies
- biodiversity response to wetland restoration and driving factors
- wetland soil characterization and mapping,
- biogeochemical processes in natural, restored, and treatment wetlands,
- hydrological dynamics under wetland restoration (i.e. rewetting),
- greenhouse gases emission measurements and biomass utilization,
- modeling wetlands restoration scenarios

Learning outcomes and competencies:

At the end of the course, the participants will be able to:

- have a better awareness of the ecological functionality of wetlands and their role in mitigating climate change,
- have an overall view of the current wetland mapping technology,
- describe wetland soil and hydrology characteristics,
- understand interactions of biogeochemical processes in wetlands,
- describe the impact of wetlands on nutrient cycling in agricultural catchments,
- understand different wetland systems, their applicability, and limitations,
- use different techniques to measure greenhouse gas fluxes,
- discuss peatland trade-offs and controversies, and policy initiatives.

Name of lecturers:

- Shubiao Wu, Associate Professor. Department of Agroecology, Aarhus University. Responsible for wetland biogeochemical processes
- Brian Keith Sorrell, Associate Professor. Department of Biology, Aarhus University. Responsible for the role of wetland plants and biogeochemistry in the rhizosphere.
- Amélie Marie Beucher, Assistant Professor. Department of Agroecology, Aarhus University. Responsible for wetland soil characterization and digital mapping
- Bo V. Iversen, Associate Professor. Department of Agroecology, Aarhus University. Responsible for hydrology in wetlands
- Poul Erik Lærke, Senior Researcher, Department of Agroecology, Aarhus University. Responsible for wetland GHGs emissions and biomass production
- Lorenzo Pugliese, Academic employee, Department of Agroecology, Aarhus University. Responsible for nutrient transport and modeling in wetland soil. He will also supervise lab tracer experiments and field trips
- Johannes W.M. (Jeroen) Pullens, Researcher. Department of Agroecology, Aarhus University. Responsible for Eddy covariance towers to measure greenhouse gas fluxes.
- Andres Felipe Rodriguez Grisales, Postdoc. Responsible for chamber systems to measure greenhouse gas fluxes.
- Claudia Nielsen, Postdoc. Department of Agroecology, Aarhus University. Responsible for peatland trade-offs and controversies.
- Atif Muhmood, MSCA fellow, Responsible for phosphorus leaching in the wetland rewetting process.
- Lucas Carvalho Gomes, Postdoc, Responsible for modeling wetlands restoration scenarios.
- A few international experts will be invited.

Type of course/teaching methods: Lectures, exercises, group work, lab and field trip, final assignment

Course assessment: Classwork - satisfactory participation in the course; Group work and oral presentation. Prior to the course, each participant should prepare one slide PPT to introduce their research.

Provider: Department of Agroecology, Aarhus University, Blichers Allé 20, Postboks 50, DK-8830 Tjele

Special comments on this course: The course fee is 600 Euro.

Time: October 7-11, 2024

Place: AU Foulum – Department of Agroecology and wetland areas in Denmark

Registration:

The deadline for registration is May 30, 2024. Admission information will be sent out no later than June 30, 2024.

For registration: If you have any questions, please contact Shubiao Wu, e-mail: wushubiao@agro.au.dk