

Environmental Monitoring and Applications

Title	Environmental Monitoring and Applications
Semester	F2024
Master programme in	Miljø biologi / Environmental Science
Type of activity	Field Course
Teaching language	English
Study regulation	Read about the Master Programme and find the Study Regulations at ruc.dk Læs mere om uddannelsen og find din studieordning på ruc.dk

REGISTRATION AND STUDY ADMINISTRATIVE

Sign up for study activities at [stads selvbetjening](https://stads.selvbetjening) within the announced registration period, as you can see on the [Studyadministration homepage](#).

When signing up for study activities, please be aware of potential conflicts between study activities or exam dates.

Registration

The planning of activities at Roskilde University is based on the recommended study programs which do not overlap. However, if you choose optional courses and/or study plans that goes beyond the recommended study programs, an overlap of lectures or exam dates may occur depending on which courses you choose.

Number of participants

ECTS 5

Responsible

for the activity Henrik Ærenlund Pedersen (henrikae@ruc.dk)

Head of study Per Meyer Jepsen (pmjepsen@ruc.dk)

Teachers

Study administration INM Registration & Exams (inm-exams@ruc.dk)

Exam code(s) U60096

ACADEMIC CONTENT

Overall
objective

This course will train students in using field-based standard techniques and to monitor the environmental state of selected aquatic and terrestrial ecosystems. The course provides students with the necessary theoretical back-ground behind, and practical training in, methods used for monitoring and environmental assessments. Students will learn to plan and conduct surveys in various habitats, to analyse and interpretate obtained data, and present the results according to national and international guidelines. This is a practical field course taking place at a field station followed by a few days at campus to finalize laboratory work, data-treatment and presentation of results. The course involves small lectures, practical field work, analytical laboratory work, colloquia with data treatment and discussions, and finally a mini symposium with student presentations.

Strongly inspired by official environmental monitoring programmes and assessment practices, this course will train students in using field-based standard techniques to monitor the environmental state of selected aquatic and terrestrial ecosystems.

Ecosystems to be included may vary from one year to the next, but the main focus will always be on sampling and analysing biotic parameters, from organismal to species level.

The course provides students with the necessary theory behind, and practical training in, methods and techniques used for monitoring and environmental assessments.

Detailed

description of
content

Through learning-by-doing under qualified supervision, students will become acquainted with relevant field and laboratory equipment, and they will develop abilities to plan and conduct surveys in various habitats.

Furthermore, students will learn to analyse and interpret obtained data, to present the results according to national and international guidelines and to place environmental assessments into a broader societal perspective (e.g., in relation to protection and conservation policies). This is a practical field course taking place at a field station.

Students and teachers are supposed to stay at the field station for the entire period of the field course. The latter will be followed by a few days at campus to finalize laboratory work, data analysis and presentation of results. The course involves small lectures, practical field work, analytical

laboratory work, colloquia with data treatment and discussions, and finally a mini symposium with student presentations.

Participants should expect to pay c. 600 kr for food during the course.

Course
material and
Reading list

Background publications and originally prepared manuals – all to be provided via Moodle.

5 ECTS correspond to 135 hours of work.

- Field and laboratory work , c. 80 hours
- Data analysis, c. 20 hours
- Reading and preparation, c. 25 hours
- Final seminar (including preparation), c. 10 hours

Overall plan
and expected
work effort

Learning activities:

- Collection of data and samples in the field.
- Analysis of samples in the laboratory.
- Data analysis.
- Lectures.
- Oral presentation.
- Discussions.

Format

The course includes formative evaluation based on dialogue between the students and the teacher(s).

Evaluation
and feedback

Students are expected to provide constructive critique, feedback and viewpoints during the course if it is needed for the course to have better quality. Every other year at the end of the course, there will also be an evaluation through a questionnaire in SurveyXact. The Study Board will

handle all evaluations along with any comments from the course responsible teacher.

Furthermore, students can, in accordance with RUCs 'feel free to state your views' strategy through their representatives at the study board, send evaluations, comments or insights from the course to the study board during or after the course.

Programme Detailed programme to be provided via Moodle.

ASSESSMENT

After completing the course, students will be able to:

Overall
learning
outcomes

- demonstrate knowledge of sampling methods, sampling strategies and theories that form the basis for environmental assessments (i.e. 'the state of the environment') in a monitoring context
- compare, select and apply the best possible sampling method to sample target variables depending on the habitat, physical/chemical parameter or life form(s) in question
- compare, select and apply the best possible statistical methods to analyse and evaluate data obtained during a monitoring session
- formulate, present and discuss results and conclusions (from the assessment) in a critical and academically competent way
- initiate, design and conduct own monitoring survey using proper methods and subsequently be able to analyze and communicate the results and to place such assessments into a broader societal perspective (e.g. in relation to protection and conservation policies).

The course is passed through active, regular attendance and satisfactory participation.

Form of
examination

Active participation is defined as:

The student must participate in course related activities (e.g. workshops, seminars, field excursions, process study groups, working conferences, supervision groups, feedback sessions).

Regular attendance is defined as:

- The student must be present for minimum 80 percent of the experimental/practical parts of the course with the developed analysis and interpretation of data..

Satisfactory participation is defined as:

- e.g. oral presentations (individually or in a group), peer reviews, mini projects, test, planning of a course session .

Assessment: Pass/Fail.

Form of Re-examination

Samme som ordinær eksamen / same form as ordinary exam

Type of examination in special cases

The course is passed through active, regular attendance and satisfactory participation. Active participation is defined as: The student must participate in course related activities. Regular attendance is defined as: The student must be present for minimum 80 percent of the experimental/practical parts of the course with the developed analysis and interpretation of data. Satisfactory participation of students will be assessed by their ability to:

Examination and assessment criteria

- apply sampling methods, sampling strategies and theories of environmental assessment in a monitoring context;
- compare, select and apply the best possible sampling method to sample target variables depending on the habitat or life form(s) in question;
- compare, select and apply the best possible statistical methods to analyse and evaluate data obtained during a monitoring session;
- formulate, present and discuss results and conclusions from environmental assessment in a critical and academically competent way;
- and whether performance meets all formal requirements.

Exam code(s) Exam code(s) : U60096

Course days:

Hold: 1

Environmental Monitoring and Applications (ES)

time 09-08-2024 09:15 til
09-08-2024 16:00
forberedelsesnorm ikke valgt
forberedelsesnorm D-VIP ikke valgt
location 12.2-079 - teori 12.2 (15)
Teacher Henrik Ærenlund Pedersen (henrikae@ruc.dk)

Environmental Monitoring and Applications - Field trip Kattinge Værk (ES)

time 12-08-2024 08:00 til
16-08-2024 18:00
forberedelsesnorm ikke valgt
forberedelsesnorm D-VIP ikke valgt
Teacher Henrik Ærenlund Pedersen (henrikae@ruc.dk)

Environmental Monitoring and Applications (ES)

time 19-08-2024 09:15 til
19-08-2024 16:00
forberedelsesnorm ikke valgt
forberedelsesnorm D-VIP ikke valgt
location 12.2-079 - teori 12.2 (15)
Teacher Henrik Ærenlund Pedersen (henrikae@ruc.dk)

Environmental Monitoring and Applications (ES)

time 20-08-2024 09:15 til
20-08-2024 16:00
location 12.2-079 - teori 12.2 (15)
Teacher Henrik Ærenlund Pedersen (henrikae@ruc.dk)

Environmental Monitoring and Applications - presentations in the afternoon (ES)

time 22-08-2024 09:15 til
22-08-2024 16:00

location 12.2-079 - teori 12.2 (15)

Teacher Henrik Ærenlund Pedersen (henrikae@ruc.dk)