Faculty of Science

BIOS17, Biology: Water Management, 15 credits

Biologi: Vattenvård, 15 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by The Education Board of Faculty of Science on 2025-05-23. The syllabus comes into effect 2025-05-23 and is valid from the spring semester 2026.

General information

The course is an optional second-cycle course for a degree of Bachelor or Master of Science in Biology. The course is also offered as a single subject course. The language of instruction is English.

Language of instruction: English

Main field of study	*Specialisation*
Biology	A1N, Second cycle, has only first-cycle course/s as entry requirements

Learning outcomes

The overall aim of the course is for the student to acquire a holistic view of water conservation by gaining knowledge about the water conservation problems that exist in limnic and marine systems and measures that can be implemented.

Knowledge and understanding

On completion of the course the student shall be able to:

- describe the water conservation problems that exist, both globally and nationally in Sweden
- account for various measures to solve existing water conservation problems
- describe the holistic view of water conservation and restoration, including potential problems with conflicts between the interests of different stakeholders

Competence and skills

On completion of the course the student shall be able to:

- plan and carry out independent work in water management
- search and compile relevant information from both scientific journals and other literature to solve water conservation tasks
- apply knowledge in water management in professional situations

Judgement and approach

On completion of the course the student shall be able to:

- evaluate and assess information from different sources
- argue for consideration to the different perspectives of stakeholders in water management issues

Course content

The course begins with a module that deals with existing water conservation problems, such as eutrophication, ocean acidification, browning and alien species. This also includes a study a literature seminar with scientific articles that deal with water conservation problems. The course then deals with water management and how water conservation problems can be solved: biomanipulation of lakes, fish conservation measures, the creation of wetlands for nutrient reduction and the restoration of running water and coastal water. This also includes knowledge of legal tools for solving water conservation problems in both limnic and marine environments, such as the EU Water Directive. A group work is performed, including trend analysis, use of databases with environmental data, statistical analyses of important water variables. In addition, visits are med to places where restoration measures have been implemented, including constructed wetlands, fishways past obstacles, restored stretches of the watercourse and the coastal zone.

The course concludes with a two-week project, where groups make a project plan to investigate and propose measures regarding a water conservation problem. The project includes sampling or field inventories, data collection and analysis, writing a report and an oral presentation. These projects are often carried out in collaboration with a municipality, the county administrative board or a consulting firm and the results are often useful in practical water conservation work.

Course design

The teaching consists of lectures, exercises, seminars, study visits, and projects. Participation in exercises, seminars, study visits, projects, and thereby integrated teaching (e.g. presentations), is compulsory.

Assessment

Examination takes place through a written examination at the latter part of the course, oral and written presentations of projects as well as through active participation in seminars,exercises and study visits during the course.

For students who have not passed the regular examination, an additional examination occasion in close connection to this is offered.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Grades

Grading scale includes the grades: Fail, Pass, Pass with distinction
To pass the entire course, approved written examination, approved projects as well as approved participation in seminars, exercises and study visits, are required.

Grades on the modules Written examination (7,5 credits) and Project (3 credits) are Fail, Pass, Pass with distinction. Grades on the module Exercises, seminars and study visits (7.5 credits) are Fail and Pass.

The final grade is decided through a weighing of the results of the written examination and the projects.

Entry requirements

For admission to the course, 105 credits Science studies including knowledge corresponding to BIOC13 Ecology 15 credits, are required. English 6/B.

Further information

The course may not be included in a degree together with BIOR66 Water Management 15 credits.

The course is given by the Department of Biology, Lund University.