Faculty of Science

BIOS19, Biology: Limnology and Marine Ecology - Concepts and Processes, 15 credits

Biologi: Limnologi och marinekologi - koncept och processer, 15 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by The Education Board of Faculty of Science on 2025-06-05. The syllabus comes into effect 2025-06-05 and is valid from the autumn semester 2026.

General information

The course is an optional second-cycle course for a Degree of Bachelor or Master of Science in Biology.

Language of instruction: English

Main field of study	*Specialisation*
Biology	A1F, Second cycle, has second-cycle course/s as entry requirements

Learning outcomes

The general aim of the course is that the student should acquire knowledge and understanding of concepts and processes in aquatic systems from individual to system levels, as well as be able to apply adequate methods.

Knowledge and understanding

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

- describe and explain ecological processes in aquatic ecosystems from individual to system levels
- describe and explain conceptual and theoretical models of ecological and evolutionary processes in aquatic environments
- explain differences and similarities between processes in freshwater and marine systems

Competence and skills

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

- apply his/her acquired knowledge in e.g. experimental design, database management and different aquatic working methods
- analyze and interpret aquatic data and integrate these to a synthesis
- use aquatic data and process models to predict consequences of a changeing aquatic environments
- plan, perform and independently compile aquatic projects where goals, hypotheses and predictions are formulated and tested
- present aquatic projects in written and oral form

Judgement and approach

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

- evaluate his/her knowledge in aquatic ecology and relate this to theory, research and professional work
- reflect on and critically discuss human impact on aquatic organisms and ecosystems

Course content

The course consists of two integrated modules, a theoretical part of 7.5 credits and a practical part (laboratory sessions, exercises, seminars and project work) of 7.5 credits. Through a combination of lectures and experiments the students acquire knowledge of e.g. bacteria production, primary production, competition, predator-prey interactions, migration and distribution patterns in time and space and which consequences these processes have for the function of aquatic ecosystems. The course contains several components that focus on on aquatic ecological and evolutionary theory. The practical work is carried out in project groups where the students practice planning, implementation and presentation of scientific studies.

The course includes an introduction to aquatic databases and how these can be used for time series analyses of changes in and human impact on aquatic ecosystems through e.g. climate changes, eutrophication, brownification or fishing. The course also includes an introduction to theory and laboratory work associated with different aquatic working methods.

Course design

The teaching consists of lectures, laboratory sessions, exercises, seminars and project work. Participation in laboratory sessions, exercises, seminars as well as project work, and thereby integrated components, are compulsory.

Assessment

Examination takes place in the form of a written examination at the end of the course and through compulsory projects, exercises, seminars and labs during the course. For students who have not passed the regular examination, an additional examination 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, passed examination, passed project reports and active participation in all compulsory components are required.

Grades on module Written examination 7.5 credits are Failed, Passed, Passed with distinction. Grades on the module Laboratory sessions, exercises, seminars and projects are Failed and Passed.

The final grade is decided by the grade on the written examination.

Entry requirements

For admission to the course, 90 credits scientific studies including knowledge equivalent to BIOC13 Ecology 15 credits, BIOS18 Limnology and Marine Ecology - organisms and habitats 15 credits and 5 credits statistics. English 6/English B.

Further information

The course may not be included in a degree together with BIOR87 Limnology and Marine ecology - concepts and processes 15 credits.

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