



LUND
UNIVERSITY

Faculty of Science

BIOR17, Biology: Limnology, 15 credits

Biologi: Limnologi, 15 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2007-03-01 and was last revised on 2016-01-29. The revised syllabus applies from 2016-01-29, spring semester 2016.

General Information

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

Language of instruction: English and Swedish

Main field of studies

Biology

Depth of study relative to the degree requirements

A1N, Second cycle, has only first-cycle course/s as entry requirements

Learning outcomes

Knowledge and understanding

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

- describe the structure and function of limnetic ecosystems
- account for sampling methodology and the most common chemical and physical analytical methods in aquatic systems
- explain the dominating models for aquatic ecosystems
- account for current environmental problems in aquatic systems: effects and causes

Competence and skills

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

- analyse and interpret limnetic data and compile these to an integrated limnetic synthesis
- use aquatic identification literature to identify the most common aquatic organisms
- carry out sampling of e.g. macrophytes, bacteria, phyto- and zooplankton, the benthic fauna, fish and water chemistry
- plan, carry out, and compile a limnetic project where the aims, hypotheses, and predictions are formulated and tested
- present a limnetic project in written and oral form

Judgement and approach

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

- evaluate his/her own limnetic knowledge and relate it to limnetic research and work

Course content

The course consists of two parts. During the first part of the course, current theories and models concerning the physical and chemical properties of water, species composition of different organism groups, cycling of nutrients and other dissolved and colloidal compounds, and relations within and between populations of organisms, are presented. Emphasis is placed on understanding new findings about the function of aquatic ecosystems. Human impacts on lakes and streams, e.g. eutrophication, acidification, and ongoing effects due to climate change, are discussed. Examples of impaired and restored ecosystems are presented.

During the second part of the course, field trips to different lakes and creeks typical of southern Sweden are carried out, where the relationships between climate and watershed, and between lake type (nutritious, nutrient-poor, dystrophic) and the water's physical and chemical parameters and associated species assemblages, are discussed. Samples are collected for analysis of macrophytes, bacteria, phyto- and zooplankton, benthic fauna, fish, and water chemistry. The practical work takes place in project groups. The students get experience in the most important field and laboratory methods.

Course design

The teaching consists of lectures, laboratory sessions, field exercises, seminars, group work and project. Participation in laboratory sessions, field exercises, seminars, group work and project, and thereby other integrated teaching, is compulsory.

Assessment

Examination takes place through species identification exams during the course, a written examination at the end of the course, and projects that are presented orally and in writing. For students who have not passed the regular examination, an additional examination in close connection to this is offered.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass, Pass with distinction.

To pass the entire course, approved examinations, approved project report, and active participation in all compulsory parts, are required.

The final grade is decided through a weighing of the results of the parts that are included in the examination (80% for the written examination and 20% for the project).

Entry requirements

For admission to the course, English B/English 6 and 90 credits of scientific studies including knowledge corresponding to BIOC02 Ecology 15 credits, are required

Further information

The course may not be included in a degree together with BIO621 Limnology 15 credits, or BIOR44 Limnology and Water Management 15 credits.

Subcourses in BIOR17, Biology: Limnology

Applies from H07

0701 Limnology, 15,0 hp
Grading scale: Fail, Pass, Pass with distinction