Faculty of Science

BIOC13, Biology: Ecology, 15 credits

Biologi: Ekologi, 15 högskolepoäng

First Cycle / Grundnivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2022-06-03 to be valid from 2022-06-03, autumn semester 2023.

General Information

The course is a compulsory first-cycle course for a Degree of Bachelor of Science in Biology.

Language of instruction: Swedish

Main field of studies	*Depth of study relative to the degree requirements*
Biology	G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Learning outcomes

The overall aim of the course is that the student shall understand the different levels within ecology, from individual to ecosystem, be able to account for fundamental ecological processes and different ecological systems, and complete short ecological investigations in the field.

Knowledge and understanding

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

- account for the basic principles of natural and sexual selection and be able to describe and understand reasons for variation in physiology, morphology and behaviour in organisms based on these principles
- explain the meaning of and identify costs of reproduction and roughly classify life history strategies in different organisms
- describe the different factors that potentially influence the density of individuals in a population, and account for how different density-dependent factors affect the population dynamics

- categorize various types of interactions within and between species, and understand potential effects of these
- identify the components of plant and animal communities, and understand the processes between these and how they are influenced by abiotic factors
- explain the concepts diversity, stability and succession, and in what way these can be used to describe and understand processes in ecosystems
- account for the most important terrestrial, limnic and marine ecosystems, and the factors that mediate species composition and productivity
- give examples of how fundamental ecological principles influence work with species conservation
- account for Swedish nature conservation and protection of endangered species

Competence and skills

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

- plan and carry out basic field surveys
- compile and statistically analyse data from ecological surveys
- search and compile information in literature and databases
- conduct a basic ecological project, including to independently acquire the knowledge needed to perform and present the project
- present an ecological project orally and in writing in the form of a scientific report
- conduct opposition in a constructive way

Judgement and approach

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

- distinguish the fundamental scientific and moral aspects on preservation of species and nature conservation
- weigh different societal and biological aspects on nature conservation
- evaluate strengths and weaknesses of a scientific report
- discuss human impact on various ecological processes and systems

Course content

The course includes the following topics:

- basic evolutionary theory and population genetics
- population ecology how populations grow and are regulated, possible interactions between individuals within a population and between different populations
- interactions between species including competition, predation, and mutualism
- behavioural ecology, including sexual selection and kin selection
- the impact of abiotic and biotic factors in various terrestrial, limnic, and marine ecosystems
- biogeography, Swedish vegetation, soil ecology, and the history and ecology of the cultural landscape
- conservation of biodiversity, flora and fauna conservation and the aim of nature conservation
- agriculture, forestry, urbanization and other human impact on nature

The course includes seminars, exercises in population theory and statistics, excursions and field exercises in terrestrial and aquatic environments, and a field project.

Course design

Teaching consists of lectures, seminars, excursions, exercises and projects. Active participation in seminars, excursions, exercises and projects and associated elements is compulsory.

Assessment

The assessment is based on a written project report, written assignments during the course, a written exam during the latter part of the course and through compulsory components. Students who do not pass an examination will be offered another opportunity soon thereafter.

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.

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.
For a grade of Pass on the whole course, the student must have passed the written project report, the written assignments and the written exam as well as all compulsory parts.

Grading for project and written exam is Fail, Pass, Pass with distinction, whereas for seminars, excursions and exercises it is Fail, Pass.

The final grade is determined by the aggregated results of the written exam and the project.

Entry requirements

To be admitted to the course, students must have Biology 2 and 45 credits in Natural Science studies.

Further information

The course may not be included in a degree together with BIOC10 Ecology, 15 credits, or BIOC12 Ecology, 7.5 credits.

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

Subcourses in BIOC13, Biology: Ecology

Applies from H23

2301 Seminars, excursions and exercises, 4,0 hp
Grading scale: Fail, Pass
2302 Project, 3,5 hp
Grading scale: Fail, Pass, Pass with distinction
2303 Written exam, 7,5 hp
Grading scale: Fail, Pass, Pass with distinction