



Faculty of Science

BIOC02, Biology: Ecology, 15 credits

Biologi: Ekologi, 15 högskolepoäng

First Cycle / Grundnivå

Details of approval

The syllabus was approved by on 2007-03-01 and was last revised on 2014-12-18 by Study programmes board, Faculty of Science. The revised syllabus applies from 2014-12-18, spring semester 2015.

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

Biology

Depth of study relative to the degree requirements

G1N, First cycle, has only upper-secondary level entry requirements

Learning outcomes

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
- categorise 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
- account for the fundamental features of the legislation that regulates nature conservation and protection of endangered species in our country

Competence and skills

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

- carry out, compile and analyse simple field surveys
- search information in literature, libraries, and databases
- write a scientific report and present it orally

Judgement and approach

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

- discuss how population and community ecology, and population genetics, constitute the disciplinary foundation for conservation biology
- debate the basic scientific and ethical aspects for preservation of endangered species and nature conservation

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
- terrestrial, limnic, and marine ecosystems abiotic factors and organisms, interactions between species, and interactions between different ecosystems
- biogeography, Swedish vegetation, soil ecology, and the history and ecology of the cultural landscape
- conservation of biodiversity, flora and fauna conservation, the aim of nature conservation, and the problems and legislations around it
- agriculture and forestry

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

Course design

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

Assessment

Examination takes place through written examination and through compulsory parts. 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 examination and approved compulsory parts are required. The final grade is decided through a weighing of the different parts that are included in the examination.

Entry requirements

General and courses corresponding to the following Swedish Upper Secondary School Programs: Biology 2, Chemistry 2, Mathematics 4, Physics 1b/1a1+1a2.

Further information

The course may not be included in a degree together with BIO580 Basic Ecology 10 p (15 credits).

Subcourses in BIOC02, Biology: Ecology

Applies from V13

- 0711 Theory, 7,5 hp
Grading scale: Fail, Pass, Pass with distinction
- 0712 Field Work and Group Assignments, 7,5 hp
Grading scale: Fail, Pass

Applies from H07

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