Faculty of Science

BIOR78, Biology: Soil and Plant Ecology, 15 credits

Biologi: Mark- och växtekologi, 15 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2015-08-27 to be valid from 2015-08-30, autumn semester 2015.

General Information

The course is an elective course for advanced studies for a Bachelor of Science or Master's degree (120 credits) in biology or environmental sciences.

Language of instruction: English

Main field of studies	*Depth of study relative to the degree requirements*
Biology	A1N, Second cycle, has only first-cycle course/s as entry requirements
Environmental Science	A1N, Second cycle, has only first-cycle course/s as entry requirements

Learning outcomes

Knowledge and understanding

The student should be able to on completion of the course:

- in detail describe chemical and geological processes that influence the soil environment and plant communities
- in detail describe ecological and biogeochemical processes that determine the spatial distribution of plants and how this influences the function of ecosystems
- in detail explain how plants and microorganisms influence the recycling of carbon and other nutrients
- fully describe how biological diversity influences soil and plant ecosystems

- fully describe the importance of mycorrhiza fungi on the uptake of nutrients by plants
- in detail explain how interactions between different plants and between plants and soil microorganisms influence the structure and function of different ecosystems.

Competence and skills

The student should be able to on completion of the course:

- apply methodology that is used in research on soil and plant ecology to analyse and quantify the accumulation and rate of recycling of carbon and nutrients, the microbial biomass and its composition, and the composition of soil nutrient webs
- search, analyse and compile scientific texts and data
- write a scientific report and present it orally
- perform laboratory work on issues related to soil and plant ecology

Judgement and approach

The student should be able to on completion of the course:

- evaluate information on soil and plant ecology from literature and digital media
- critically discuss scientific texts within the subject

Course content

The course includes the following fields:

- recycling of carbon, nitrogen, phosphorus and other nutrients
- the importance of biological, chemical and geological processes for soil and plant communities
- relationships between biological diversity and function in soil and plant ecosystems
- the importance of plants and microrganisms for production and consumption of greenhouse gases
- the influence of humans on soil and plant ecosystems

During the course, project work is carried out, both individually and in groups. Furthermore, field trips and an extensive laboratory session are included with the aim to examine how different factors influence soil and plant communities.

Course design

The teaching consists of lectures, exercises, seminars, laboratory sessions, field trips and project work. Participation in exercises, seminars, laboratory sessions, field trips, and project work are compulsory.

Assessment

Examination takes place through an oral and a written examination, a written project report, and through compulsory practical 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, passed results of all theoretical and practical parts that are included in the examination are required. The final grade is decided through a joining of the grades on the theoretical parts that are included in the examination.

Entry requirements

For admission to the course, 90 credits of studies in natural sciences are required including knowledge equivalent to BIOC02 Ecology 15 credits, or NGEA04 Ecosystem analysis 15 credits. English 6/English B

Further information

The course may not be included in a degree together with the course BIOR24/EXTN20 Soil ecology 15 credits.

Subcourses in BIOR78, Biology: Soil and Plant Ecology

Applies from H15

1501 Theory, 10,0 hp
Grading scale: Fail, Pass, Pass with distinction
1502 Exercises and Assigments, 5,0 hp
Grading scale: Fail, Pass