



LUND
UNIVERSITY

Faculty of Science

BIOR77, Biology: Plant Evolution and Adaptation, 15 credits

Biologi: Växternas evolution och adaptation, 15 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2015-01-28 to be valid from 2015-01-28, spring 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 and molecular biology. The course is also given as a separate course.

Language of instruction: English

Main field of studies

Biology

Molecular Biology

Depth of study relative to the degree requirements

A1F, Second cycle, has second-cycle course/s as entry requirements

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Learning outcomes

The aim of the course is that students should have acquired the following knowledge and skills on completion of the course:

Knowledge and understanding

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

- describe the variation in pollination- and reproductive systems observed in plants and explain how this variation influences the adaptability of plants
- explain important processes that lead to speciation in plants, and principles for delimiting species and other taxonomic units

- explain how plants adapt to their environment and how their functional properties are influenced by biotic and abiotic factors
- account for the evolutionary mechanisms that lead to adaptation of plants
- explain and analyse how phenotypic plasticity, hybridisation, polyploidy, and postglacial colonisation history influence the adaptability of plants

Competence and skills

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

- plan and carry out studies on the adaptations of plants and the interactions of plants and their surrounding world
- search and compile information from biological databases
- communicate with the scientific community and with people who are not professionals

Judgement and approach

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

- relate ecological and evolutionary knowledge to projects concerning the conservation of threatened species
- evaluate literature- or internet-based information

Course content

The course includes the following topics:

- the ecophysiology of plants in relation to abiotic and biotic factors
- competition, herbivory, parasitism, and mutualism (mycorrhiza and nitrogen fixation)
- evolutionary processes in plants: phenotypic plasticity/acclimatization versus genetic adaptation
- evolutionary consequences of postglacial colonisation history and adaptation to climate change in plants
- pollination systems and their effects on the genetic variation and adaptability of plants
- aspects of conservation biology on the adaptability of plants
- methodology in plant biology and information search

Course design

The teaching consists of lectures, laboratory sessions, group work, field exercises, seminars and projects. Participation in laboratory sessions, group and field exercises, seminars and 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 passed compulsory parts are required.

The final grade is decided through a joining of the results of the parts that are included in the examination.

Entry requirements

For admission to the course, 120 credits of scientific studies are required including knowledge equivalent to BIOR76 The Function of the Plant 15 credits, and English 6/English B.

BIOR76 can be substituted by BIOA01 Genetics and Microbiology 15 credits, and BIOB01 Botany 12 credits, and one of the courses BIOR25 Molecular Ecology and Evolution 15 credits, BIOR24 Soil Ecology 15 credits, or BIOR69 Population and Community Ecology 15 credits.

Further information

The course may not be included in a higher degree together with BIOR74 The Ecology and Evolution of Plants 15 credits, BIOR54 The Evolution and Diversity of Plants 15 credits, or BIOR26 Plant Biology 15 credits.

Subcourses in BIOR77, Biology: Plant Evolution and Adaptation

Applies from V15

1501 Plant Evolution and Adaptation, 15,0 hp
Grading scale: Fail, Pass, Pass with distinction