Faculty of Science

BIOR99, Biology: Evolutionary Plant Ecology, 15 credits

Biologi: Evolutionär växtekologi, 15 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by The Education Board of Faculty of Science on 2024-12-03. The syllabus comes into effect 2024-12-03 and is valid from the autumn semester 2025.

General information

The course is an optional second-cycle course for a degree of Bachelor or Master of Science in Biology and Molecular Biology. The course is also offered as a single subject course.

Language of instruction: English

Main field of study	*Specialisation*
Biology	A1F, Second cycle, has second-cycle course/s as entry requirements

Learning outcomes

The overall goal of the course is that, after completing the course, the student should have acquired in-depth knowledge in evolutionary plant ecology, including plant evolution, adaptation and speciation as well as how these processes are affected by life history, reproduction and interactions with other organisms. The course also aims to give the student the tools to carry out analyzes and studies of plants and plant communities as well as conservation work.

Knowledge and understanding

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

- describe the variation in life-histories, reproductive systems and interactions with other organisms observed in plants, and explain how this variation influences plant ecology, evolution and conservation work

- explain important processes that lead to evolution, adaptation and speciation of plants
- explain how phenotypic plasticity, hybridization, clonality, polyploidy, and postglacial colonisation history influence patterns of variation and evolution in plants
- describe and evaluate plant communities from an ecological and evolutionary perspective
- describe how global environmental changes affect plants and plant communities

Competence and skills

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

- plan and carry out studies on the evolutionary ecology of plants, plant communities and the interaction between plants and other organisms
- analyse plant community data from an ecological and evolutionary perspective
- search and compile information from biological databases
- communicate with the scientific community and with people who are not professionals

Judgement and approach

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

- apply ecological and evolutionary thinking in plant conservation
- evaluate information about evolutionary plant ecology obtained from literature and internet-based sources

Course content

The course includes the following topics:

- life-histories, pollination systems and interactions between plants and other organisms
- evolutionary processes, including phenotypic plasticity, hybridization and polyploidy
- effects of biogeographical history and global environmental changes on plants
- ecological and evolutionary aspects of plant conservation projects
- methodology and information search

Course design

The teaching consists of lectures, exercises (laboratory sessions, group work, field exercises, and seminars) and projects. Active articipation in laboratory sessions, group work, feld exercises, seminars and projects, and thereby other integrated teaching, is compulsory.

Assessment

Examination takes place through a written examination during the latter part of the course and orally and in writing through laboratory sessions, group work, field exercises, seminars and projects during the course.

Students who do not pass a regular assessment will be offered another opportunity for assessment 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.

Grades

Grading scale includes the grades: Fail, Pass, Pass with distinction
To pass the entire course, approved written examination, as well as approved exercises (labs, group work, field work and seminars) and projects, are required.

The grading scale for exercises and projects is Fail, Pass. The grading scale for written exam is Fail, Pass, Pass with distinction.

The final grade is decided by the results of the written exam.

Entry requirements

For admission to the course, 120 credits of scientific studies are required including knowledge equivalent to BIOA11 Genetics and Evolution15 credits,
BIOB10 Zoology and Bothany 15 credits, and one of the courses BIOR69 Population- and Community Ecology 15 credits, BIOR78 Soil and Plant Ecology 15 credits or BIOR89 Evolutionary Biology: patterns and processes 15 credits. English 6/English B.

Further information

The course may not be included in a higher degree together with BIOR77 Plant evolution and adaptation 15 credits.

The course is offered at the department of Biology, Lund University.