Faculty of Science

BIOR91, Biology: Animal Ecology, 15 credits

Biologi: Zooekologi, 15 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2021-09-09 to be valid from 2021-09-09, autumn semester 2022.

General Information

The course is an elective course for a degree of Master of Science in Biology and an compulsory course for a degree of Master of Science in Biology with specialisation in Animal Ecology.

Language of instruction: English

Main field of studies	*Depth of study relative to the degree requirements*
Biology	A1F, Second cycle, has second-cycle course/s as entry requirements

Learning outcomes

The general aim of the course is that students, on completion of the course, shall have developed an evolutionary thinking to be applied when planning projects and when analysing their own and others' research results in animal ecology. They should also have acquired considerable specialised knowledge in animal ecology and in empirical and theoretical methodology. The course shall prepare the students for postgraduate studies and for professions that require an understanding of formulation and analysis of ecological problems.

Knowledge and understanding

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

- account for the basics in evolutionary theory and its importance when explaining patterns and processes in nature
- account for modern theories in animal ecology and have knowledge about the research front in this area

Competence and skills

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

- collect and process scientific information within animal ecology
- compile and write a scientific literature study
- present a scientific study orally
- formulate own hypotheses and predictions and explain how these are tested
- carry out and interpret simple experiments/studies

Judgement and approach

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

- critically review and analyse ecological problems and studies
- discuss based on an evolutionary perspective and a scientific approach

Course content

The central topic of the course is evolutionary theory and its ecological applications. The course focuses on processes at both gene- and individual level, with an emphasis on animals. The course is divided into different parts based on subject content, including a written examination worth 10 credits and a literature project, exercises and seminars consisting of 5 credits. A central goal for the course is that the students acquire "ecolutionary thinking" in order to understand patterns in nature.

Evolutionary ecology

Based on Darwin's theory of evolution central concepts such as natural and sexual selection and the concept of fitness. Central is how proximate and ultimate explanations relate to each other and contribute to our understanding of ecological processes. Important methods to study ecological and evolutionary processes are also discussed.

Ecophysiology and migration

This section highlights the importance of organism's physiological and morphological adaptations and limitations, both at ecological and evolutionary time scales.

Life history strategies

This section focuses on questions about when, where, and how organisms optimally carry out different parts of their life-cycle, especially reproduction.

Mating systems and sexual selection

This section deals with social mating systems, extra-pair copulation, the evolutionary consequences of conflicts between the sexes and parent-offspring, as well as theories of sexual selection and mate choice.

Coevolutionary processes and signals

In this section, coevolutionary processes within and between species are discussed, including how these have evolved and maintained.

Scientific methodology

This is partly integrated in the other parts of the course, but contains also specific parts, which include scientific methodology, literature project (review of articles that are carried out individually), experimental design, as well as short practical projects.

The course ends with a conference, where the students use their knowledge in animal ecology, scientific methodology (experimental design, statistics etc) and presentation technique to design a scientific study and present it in the form of a scientific talk.

Course design

The teaching consists of lectures, field exercise, seminars (on book chapters and research papers), group work, own literature project and conference. Participation in field exercise, seminars, group work, presentation of literature project, conference as well as associated parts, is compulsory.

Assessment

Examination takes place in the form of a written examination after about seven weeks, a written presentation of the literature project, as well as through an oral presentation of an own study design at the conference at the end of the course.

For students who have not passed the regular examination, an additional examination in close connection to the end of the course is offered.

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.
To pass the entire course, approved written examination, approved literature project, approved presentation at the conference, as well as approved compulsory parts, are required.

The grading scale for the written examination is Fail, Pass, Pass with distinction, while the grading scale for the literature project, exercises and project is Fail, Pass.

The final grade is decided through a weighing of the results of the written examination, literature project and conference.

Entry requirements

For admission to the course, knowledge corresponding to BIOR69 Population and Community Ecology 15 credits, or BIOR68 Aquatic Ecology 15 credits, is required. A degree of Bachelor of Science. English 6/English B.

Further information

The course may not be included in a degree together with BIOR81 Evolutionary Animal Ecology 15 credits.

Subcourses in BIOR91, Biology: Animal Ecology

Applies from H22

2201 Written examination, 10,0 hp
Grading scale: Fail, Pass, Pass with distinction
2202 Literature project, exercises and seminars, 5,0 hp
Grading scale: Fail, Pass