Department of Biology Education

Stockholm University

Syllabus

for course at advanced level

Molecular Ecology
Molekylär ekologi

15.0 Higher Education Credits
15.0 ECTS credits

Course code:	BL7012
Valid from:	Autumn 2008
Date of approval:	2006-09-27
Changed:	2023-11-21
Department	Department of Biology Education
Subject	Biology
Specialisation:	A1N - Second cycle, has only first-cycle course/s as entry requirements

Decision

This syllabus has been approved by the Board of the Faculty of Science at Stockholm University.

Prerequisites and special admittance requirements

Admittance to the course requires knowledge equivalent to Cell and Molecular Biology 15 credits, Diversity and Phylogeny of Organisms 15 credits, Physiology 15 credits and Ecology, Floristics and Faunistics 15 credits. Swedish upper secondary school course English B or equivalent.

Course structure

Examination code	Name	Higher Education Credits
7012	Molecular ecology	15
7C12	General Molecular Biological Methods in Ecology	5
7D12	Genetical Methods in Ecologi	5
7B12	Stable Isotopes in Ecology	5

Course content

a) The course covers the following. A survey of the ecological, evolutionary, population genetic and conservation biological questions where molecular analyses are particularly important. An overview over laboratory analyses of DNA, proteins, stable isotopes etc. that can be used to elucidate several different questions within ecology. Practical data analyses of results connected to ecological, evolutionary and population genetic theory, including phylogenies, population structures and paternity testing. An overview of analyse methods appropriate for molecular ecological data to estimate different parameters of practical significance in conservation biological contexts.

b) The course includes the folowing elements: I: General molecular biological methods in ecology (5 hp), II: Genetic methods in ecology (5 hp), III: Stable isotopes in ecology (5 hp).

Learning outcomes

It is expected that the student after taking this course will be able to:
• formulate ecological, evolutionary, population genetic and conservation biological questions, where molecular analyses are particularly appropriate,
• give an overview over laboratory analyses of DNA, proteins, stable isotopes, etc. that can be used for questions within molecular ecology,

• analyse molecular data, connected to ecological, evolutionary and population genetic theory, including phylogenies, population structures and paternity testing,
• have knowledge about analyse methods used to estimate different parameters of significance in conservation biological contexts, for example, genetic effective population size.

Education

The education consists of lectures, laboratory exercises, seminars, study visits, group work and/or individual work.
Participation in group work, laboratory exercises, seminars, study visits and group education associated with this is compulsory. An examiner may rule that a student is not obliged to participate in certain compulsory education if there are special grounds for this after consultation with the relevant teacher.

Forms of examination

a. Examination for the course is in the following manner: Measurement of knowledge for element I, II and III takes place through:
written and/or oral examination, written and/or oral presentations and activity at seminars

b. Grading is carried out according to a 7-point scale related to learning objectives:
A = Excellent
B = Very Good
C = Good
D = Satisfactory
E = Sufficient
Fx = Fail
F = Fail

c. Grading criteria for the course will be distributed at the start of the course.

d. A minimum grade of E is required to pass the course, together with:
•approved laboratory
•participation in all compulsory education.

e. Students who fail to achieve a pass grade in an ordinary examination have the right to take at least further four examinations, as long as the course is given. The term “examination” here is used to denote also other compulsory elements of the course. Students who have achieved a pass grade on an examination may not retake this examination in order to attempt to achieve a higher grade. Students who have failed to reach a pass grade on two occasions have the right to request that a different teacher be appointed to set the grade of the course. A request for such appointment must be sent to the departmental board.

Interim

Students may request that the examination is carried out in accordance with this syllabus even after it has ceased to apply. This right is limited, however, to a maximum of three occasions during a two-year-period after the end of giving the course. A request for such examination must be sent to the departmental board.

Limitations

The course may not be included in a degree together with the course Molecular Ecology 10 p (BI3990) or the equivalent.

Misc

The course is a component of the Master's Programme in Biology, and it can also be taken as an individual course.

Required reading

Course literature is decided by the departmental board and is described in an appendix to the syllabus.