

Syllabus

for course at advanced level

Paleoecology, genetics and human prehistory
Paleoekologi, genetik och människans förhistoria

**15.0 Higher Education
Credits**
15.0 ECTS credits

Course code:	BL7052
Valid from:	Spring 2018
Date of approval:	2018-01-15
Department	Department of Biology Education
Main field:	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 a Bachelor's degree in any of the disciplines archeology, bio-earth science, biology or molecular biology. Swedish upper secondary school course English B/English 6 or equivalent.

Course structure

Examination code	Name	Higher Education Credits
DEL1	Ancient DNA - theory and practice	3
DEL2	Ecology and evolution during the ice age	6
DEL3	The human evolution	6

Course content

a. The course provides knowledge on different processes that have affected the evolution and distribution of wild animals, plants and humans during the last 2.6 million years. To generate an understanding of how this scientific knowledge has been generated, the course also showcases methodological aspects within molecular palaeobiology and archaeology, including analysis of ancient DNA. In addition, the course provides a description of how environmental changes during cold ice ages and warm interglacials during the last 2.6 million years have affected wild animals and plants, as well as an overview of human evolution during this time period and how genomic tools can be used to study the evolution of *H. sapiens* and *H. neanderthalensis*. The course also comprises practical work, such as DNA analysis, and a theoretical summary of different methods that can be used to analyse prehistoric samples.

b. The course includes the following three elements:

1. Ancient DNA - theory and practice 3 hp
2. Ecology and evolution during the ice age 6 hp
3. The human evolution 6 hp

Learning outcomes

Upon completion of the course, students are expected to be able to:

1. Ancient DNA – theory and practice, 3 hp:
 - conduct practical ancient DNA analysis
 - describe the specific properties of ancient DNA

- put the evolution of wild animals, plants and humans into a broader context through a synthesis of knowledge from the different research fields described in the course

2. Ecology and evolution during ice ages, 6 hp:

- describe basic theoretical knowledge about evolutionary and ecological processes during the last ice age
- provide an overview of the methodological analyses that are used during studies of prehistoric materials, such as genetic analysis, isotope analysis and chronological dating methods
- describe how the environment has changes during the last 2.6 million years
- put the evolution of wild animals, plants and humans into a broader context through a synthesis of knowledge from the different research fields described in the course

3. Human evolution, 6 hp:

- describe basic theoretical knowledge about evolutionary and ecological processes during the last ice age
- provide an overview of the material anthropological chronology during the last 2.6 million years
- put the human species that have existed during the last 2.6 million years into a chronological context
- put the evolution of wild animals, plants and humans into a broader context through a synthesis of knowledge from the different research fields described in the course

Education

The education consists of lectures, seminars, laboratory work and group work. Participation in seminars, laboratory work and group work as well as group education associated with this is compulsory. In the event of special circumstances, the examiner may, after consultation with the teacher concerned, grant a student exemption from the obligation to participate in certain compulsory instruction.

Forms of examination

a. Examination for the course is in the following manner: measurement of knowledge for part 1 takes place through written presentation and for part 2 and 3 through written examination as well as written presentation.

If the instruction is in English, the examination may also be conducted in English.

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. To pass requires a minimum passing grade E on all component parts, as well as participation in compulsory teaching. The final grade calculated by weighing the grades from course sections, where the different parts are weighted in proportion to their extent.

e. Students who fail an ordinary examination are entitled to sit additional examinations as long as the course is offered. There is no restriction on the number of examinations. Examinations also include other obligatory elements of the course. Students who have passed an examination may not resit it in order to achieve a higher grade.

Students who have failed on two occasions are entitled to request the appointment of a different examiner for the next examination. Any such request must be made to the departmental board.

The course has at least two examinations for each academic year in the years in which instruction is provided. Intervening years include at least one examination.

f. Students awarded the grade Fx are given the opportunity to improve their grade to E. The examiner decides the supplementary assignments to be performed and the pass mark criteria. The supplementary assignments will take place before the next examination session.

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.

Misc

The course is offered in collaboration with the department of archaeology and can be a component of master's programme in biology or archaeology. It can also be taken as an individual course.

Required reading

Course literature is decided by the departmental board and is published at www.big.su.se at least 2 months before the course starts.