

# Syllabus

for course at first level

**Molecular Evolution and Phylogeny**  
**Molekylär evolution och fylogeni**

**7.5 Higher Education**  
**Credits**  
**7.5 ECTS credits**

<b>Course code:</b>	BL4010
<b>Valid from:</b>	Autumn 2008
<b>Date of approval:</b>	2008-04-07
<b>Department</b>	Department of Biology Education
<b>Subject</b>	Biology

## 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 30 credits in Chemistry, including a minimum of 7,5 credits in Biochemistry and Cell and Molecular Biology 30 credits. (Three credits corresponds to approximately two weeks full-time studies).

## Course structure

Examination code	Name	Higher Education Credits
4010	Molecular Evolution and Phylogeny	7.5

## Course content

The course covers fundamentals of molecular evolution, comparative genome analysis and phylogenetic analysis. Molecular genetic variation within and between species from the entire organism world are presented and the result of different evolutionary processes working at the DNA, RNA and protein level are analysed by different methods. The use of sequence data and genetic markers for comparative studies and phylogenetic analysis is also included in the course.

## Learning outcomes

It is expected that the student after taking the course will be able to:

- explain the results of different evolutionary mechanisms at the molecular level.
- perform computer analyses on sequence data and analyse the cause of differentiation, at the molecular level, between organisms.
- construct and interpret phylogenetic trees.

## Education

The education consists of lectures, laboratory exercises and seminars and/or submitted work. Participation in the laboratory exercises, seminars 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 takes place through:  
Written and/or oral examination

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 exercises
- approved seminars and/or submitted work
- 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 can not be included in a degree together with the course Molecular Evolution and Phylogeny 7,5 hp (BL4008) or the equivalent.

#### **Misc**

The course is a component of the Bachelor's Programmes in Molecular 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.