Department of Biology Education

Stockholm University

Syllabus

for course at advanced level

Molecular Genetics
Molekylärgenetik

15.0 Higher Education Credits
15.0 ECTS credits

Course code:	BL8005
Valid from:	Autumn 2011
Date of approval:	2006-09-11
Changed:	2011-10-10
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 30 credits in Chemistry, including a minimum of 7,5 credits in Biochemistry, and Cell and Molecular Biology 30 credits and additionally 15 credits in Molecular Life Sciences. (Three credits corresponds to approximately two weeks full-time studies). Swedish upper secondary school course English B or equivalent or one of the following tests. Cambridge CPE och CAE: Pass. IELTS : 6.0 (with no part of the test below 5.0). TOEFL (paper based): 550 (with minimum grade 4 on the written test part). TOEFL (computer based): 213. TOEFL (internet based): 79.

Course structure

Examination code	Name	Higher Education Credits
8005	Molecular Genetics	15
8D05	Theory	9
8E05	Laboratory exercises	6

Course content

a. The course covers genetic processes in eukaryotic and prokaryotic organisms as well as their viruses. Important topics are; the structure of the genetic material, replication and repair, transmission of DNA between cells, control of gene expression, and methods for gene mapping.
b. The course includes the following elements: Theory: 9 ECTS. Laboratory exercises: 6 ECTS.

Learning outcomes

It is expected that the student after taking the course will be able to:
• describe and compare molecular genetic processes in prokaryotic and eukaryotic organisms including their viruses.
• devise a presentation of a problem in molecular genetics founded on current research.
• describe the underlying principles for important molecular genetic methods, their utilization and limitations.

• apply certain methods experimentally.
• search for, evaluate, compile, and present scientific information for a specific audience.

Education
The education consists of lectures, practical laboratory work, group discussions, written submitted work and seminars.
Participation in the practical laboratory work, group discussions, written submitted work and 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 submitted work, seminar and/or written 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 practical laboratory 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 may not be included in a degree together with the course Molecular Genetics 10 p (BI3810) or the equivalent.

Misc
The course is a component of the Master's Programme in Biology and Molecular Life Sciences, 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.