

Syllabus

for course at first level

Genetics I

Genetik I

7.5 Higher Education

Credits

7.5 ECTS credits

Course code:	BL3002
Valid from:	Autumn 2007
Date of approval:	2006-09-11
Department	Department of Biology Education
Subject	Biology
Specialisation:	G1N - First cycle, has only upper-secondary level entry requirements

Decision

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

Prerequisites and special admittance requirements

Swedish upper secondary school courses Biology B, Chemistry B and Mathematics C, or equivalent.

Course structure

Examination code	Name	Higher Education Credits
3002	Genetics	7.5

Course content

The course covers the structure and organisation of genes and chromosomes, mitosis, meiosis and the formation of gametes, transmission genetics; inheritance of monogenic and quantitative characters, linkage, interaction and epistasis of genes, analysis of pedigrees, and sex linked inheritance. The course also includes molecular genetics: Basic experimental practice, expression and regulatory control of genes, genomics and proteomics, mutational processes, DNA repair and cancer. And finally, population genetics: Genetic variation, the Hardy – Weinberg principle and genetic equilibrium, fundamental microevolutionary processes. Human and clinical genetics.

Learning outcomes

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

- explain basic genetic concepts and definitions.
- explain how genes work, interact, and are inherited.
- describe how basic genetic processes influence the genetic constitution at the molecular, cell, and population level of organisation.

Education

The education consists of lectures, theoretical exercises and practical laboratory exercises.

Participation in laboratory exercises 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 written presentations of exercises
- 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 courses Biology 45 p (BI1100), Genetics och evolution 5 p (BIA170), Biology 40 p (BI1880), Cell and Molecular Biology 10 p (BI2280), Cell and Molecular Biology in the Biology-Earth Sciences Programme 7 p (BI1690), Genetics 5 p (BI2240), Genes, cells och populations 10 p, or the equivalents.

Misc

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