Department of Biology Education

Stockholm University

Syllabus

for course at advanced level

Biological Statistics and Experimental Design
Biologisk statistik och försöksplanering

7.5 Higher Education Credits
7.5 ECTS credits

Course code:	BL8002
Valid from:	Autumn 2007
Date of approval:	2006-09-11
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 Biological Statistics and Scientific Methodology 15 credits. (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
8002	Biological Statistics and Experimental Design	7.5

Course content

The course covers various aspects of experimental design and statistical estimation and hypothesis testing in the context of biological research. Different types of analytical methods and approaches are practised and discussed. The course focuses on how to select the appropriate method of analysis and how to analyse data with the aid of statistics computer programs. The topics include linear models, regression, pair-wise tests, analysis of variance (ANOVA), contingency tables, analysis of frequencies, and interpretation and presentation of statistical results.

Learning outcomes

It is expected that the student after taking the course will be able to • generally understand problems associated with planning and conducting biological experiments and investigations. • select appropriate statistical methods for addressing particular questions. • perform, interpret, and present results from various types of statistical analyses.

Education

The education consists of lectures, computer exercises and group as well as project exercises. Participation in computer exercises, group as well as project 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 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 and oral presentations
•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.

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.