Department of Biology Education

Stockholm University

Syllabus

for course at advanced level

Statistics for biologists III
Statistik för biologer III

7.5 Higher Education Credits
7.5 ECTS credits

Course code:	BL8063
Valid from:	Spring 2021
Date of approval:	2021-01-11
Department	Department of Biology Education
Main field:	Biology
Specialisation:	A1F - Second cycle, has second-cycle course/s as entry requirements

Decision

This course syllabus was approved by the Board of Science at Stockholm University on 11/01/2021.

Prerequisites and special admittance requirements

For admission to the course, knowledge is required equivalent to Statistics for biologists II (BL7068). English 6 or equivalent.

Course structure

Examination code	Name	Higher Education Credits
HELA	Statistics for biologists III	7.5

Course content

This course deals with advanced statistical methods that are today generally used in biological research. The content includes linear models with one or more continuous and categorical variables, general linear models (for bionomial and frequency data) and more complex statistical models (eg hierarchical models). Bayesian statistics and relationships and differences between classical statistical model fit and hypothesis testing and modern Bayesian methods are also addressed. The course is focused on the practical application of the methods to scientific issues in biological research.

Learning outcomes

After completing the course, the student is expected to be able to:
• show insights into the most common advanced statistical methods in biological research, and show an understanding of their significance for the analysis of biological data
• apply these methods to biological data
• interpret the results from both classical and Bayesian statistical analyzes

Education

Teaching consists of lectures, seminars and group work.
The course is offered in English.

Forms of examination

a. The course is examined as follows: Assessment takes place through written tests.
The examiner can decide on adapted or alternative examination formats for students with disabilities.
The examination will be conducted in English.

b. A passing final grade requires participation in computer labs. If special reasons exist, following consultation with the teacher involved, the examiner may grant the student exemption from the obligation to participate in certain compulsory instruction.

c. Grading: The course's final grade is set according to a seven-point criterion-referenced scale:
A = Excellent
B = Very good
C = Good
D = Satisfactory
E = Adequate
Fx = Fail, some additional work required
F = Fail, much additional work required

d. The course's grading criteria are handed out at the start of the course.

e. Students who receive a failing grade on a regular examination are allowed to retake the examination as long as the course is still provided. The number of examination opportunities is not limited. Other mandatory course elements are equated with examinations. A student who has received a passing grade on an examination may not retake the examination to attain a higher grade. A student who has failed the same examination twice is entitled to have another examiner appointed, unless there are special reasons to the contrary. Such requests should be made to the department board. The course includes at least three examination opportunities (if necessary: for each course module) per academic year the course is offered. For the academic years that the course is not offered, at least one examination opportunity is offered.

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

Interim

Students may request that the examination be conducted in accordance with this course plan even after it has ceased to be valid. However, this may not take place more than three times over a two-year period after the course was discontinued. Requests must be made to the departmental board. The provision also applies in the case of revisions of the course syllabus and revisions of the required reading.

Limitations

This course may not be included in a degree together with the courses Advanced biostatistics (BL8033), Statistics III (BL8059) or equivalent.

Required reading

The required reading is decided by the department board and published on the course page in the course catalogue at least 2 months before the start of the course.