

Syllabus

for course at advanced level

Survival Analysis
Överlevnadsanalys

7.5 Higher Education
Credits
7.5 ECTS credits

Course code:	MT7006
Valid from:	Autumn 2018
Date of approval:	2006-09-27
Changed:	2018-05-14
Department	Department of Mathematics (incl. Math. Statistics)
Main field:	Mathematical Statistics
Specialisation:	A1N - Second cycle, has only first-cycle course/s as entry requirements

Decision

This course syllabus was approved by the Board of Science at Stockholm University on 27 September 2006, and revised on 14 May 2018.

Prerequisites and special admittance requirements

Prerequisites for the course are 60 hp in mathematical statistics including the courses Statistical inference, FC, 7.5 hp (MT5003) and Linear statistical models, FC, 7.5 hp (MT5001) or equivalent. Also required is knowledge equivalent to Swedish upper secondary school course English B or equivalent to one of the following tests; Cambridge CPE and 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
LABO	Computer exercises	1.5
TEOR	Theory	6

Course content

The course covers censoring and truncation, hazard and survival function, estimation of the survival function with Nelson-Aalen and Kaplan-Meier methods, methods for comparison of two or more survival functions, some parametric life length distributions and estimation of parameters, non-parametric methods, proportional hazard and Cox regression and some parametric regression models.

The course consists of the following modules :

Module 1: Teori (Theory) 6 credits.

Module 2: Datorlaborationer (Computer Exercises) 1,5 credits.

Learning outcomes

After completing the course, the student is expected to be able to:

Module 1: Theory

- * determine how life length data have been censored and truncated
- * estimate survival functions using parametric and non-parametric methods
- * compare survival functions for several populations

Module 2: Computer Exercises

* use statistical software as a tool for survival analysis

Education

Teaching consists of lectures, exercises and computer exercise sessions.

Forms of examination

a. The course is examined in the following manner: Assessment of module 1 takes place through written examination and assessment of module 2 takes place through written presentation of computer exercises.

b. 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 = Failed, some additional work is required

F = Failed, much additional work is required

Grades of module 1 will be set according to a two-point grading scale: fail (U) or pass (G).

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

d. A minimum grade E is required to pass the course, together with pass of computer exercises.

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 two examination opportunities 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.

Limitations

The course may not be included in a degree together with the course "Survival Analysis" (MS 3130).

Misc

The course is a component of the Master Program in Biostatistics, but may also be taken as a separate course.

Required reading

The required reading is decided by the department board and published on the Department of Mathematics' website (www.math.su.se) at least 2 months before the start of the course.