

# Syllabus

for course at advanced level

**Statistical Models**  
**Statistiska modeller**

**7.5 Higher Education  
Credits**  
**7.5 ECTS credits**

<b>Course code:</b>	MT7002
<b>Valid from:</b>	Autumn 2007
<b>Date of approval:</b>	2006-09-27
<b>Department</b>	Department of Mathematics (incl. Math. Statistics)
<b>Subject</b>	Mathematical Statistics
<b>Specialisation:</b>	AXX - Second cycle, in-depth level of the course cannot be classified

## Decision

This syllabus has been approved by the Board of the Faculty of Science at Stockholm University on 27 September 2006.

## Prerequisites and special admittance requirements

Prerequisites for the course are 60 hp in mathematical statistics including the courses Probability theory II, FC, 7.5 hp (MT5002) and Statistical inference, FC, 7.5 hp (MT5003) 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
S702	Statistical Models	7.5

## Course content

The course covers likelihood theory, maximum likelihood, exponential families, generalized linear models, statistical information measures, and large sample properties.

## Learning outcomes

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

- \* define the advanced statistical concepts and models
- \* describe usual principles of statistical inference and relate them to each other
- \* choose an appropriate model for a given problem and draw reasonable conclusions based on the analysis of chosen model
- \* critically examine and estimate reasoning of own results

## Education

The education consists of lectures, exercises and compulsory assignments. 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 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 E is required to pass the course, together with approved written presentations of assignments.

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 Mathematical Statistics, Biostatistics, 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.