

# Syllabus

for course at first level

**Probability Theory II**  
**Sannolikhetsteori II**

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

<b>Course code:</b>	MT5002
<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>	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 on 27 September 2006.

## Prerequisites and special admittance requirements

Prerequisites for the course are knowledge equivalent to the courses Mathematical Analysis III, FC, 7.5 hp, Linear Algebra II FC, 7.5 hp, Statistical Analysis FC, 7.5 hp and Stochastic processes and simulations I FC, 7.5 hp.

## Course structure

Examination code	Name	Higher Education Credits
S502	Probability Theory II	7.5

## Course content

The course covers the basics of probability theory, simultaneous and conditional distributions, especially the multinomial normal distribution, conditional expectation and variance, transforms, stochastic convergence and limit theorems.

## Learning outcomes

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

- \* define advanced ideas of probability theory
- \* solve advanced probabilistic problems
- \* communicate oral and written probabilistic reasoning

## Education

The education consists of lectures, exercises and submitted work.

## 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.

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 may not be included in a degree together with the course "Probability Theory II" (MS 2130).

#### **Misc**

The course is a component of the Bachelor's Programme in Mathematics, Bachelor's Programme in Biomathematics, and Bachelor's Programme in Mathematics and Economics, 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.