Syllabus

for course at first level

Probability Theory I	**7.5 Higher Education**
Sannolikhetsteori I	**Credits**
	7.5 ECTS credits

Course code:	MT3001
Valid from:	Autumn 2007
Date of approval:	2006-09-27
Department	Department of Mathematics (incl. Math. Statistics)
Subject	Mathematical Statistics
Specialisation:	G1F - First cycle, has less than 60 credits in first-cycle course/s as 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 is a course equivalent to Mathematics 1 FC, 30 hp.

Course structure

Examination code	Name	Higher Education Credits
TENT	Probability Theory I, exam	6
LABO	Computer Exercises	1.5

Course content

a.The course covers sample space and events, axioms of probability, conditional probability, random variables in one and several dimensions, distributions of random variables, functions of random variables, expectation and variance, covariance and correlation, the law of large nummers and the central limit theorem.
b. The course includes the following elements:
i) Theory, 6 hp
ii) Computer Exercises, 1.5 hp

Learning outcomes

It is expected that the student after taking the course will be able to:
* define the basic concepts of probability
theory
* solve simple probabilistic problems
* communicate oral and written probabilistic
reasoning
* have basic skill to use mathematics and
computer programs as tools for probability
analysis

Education

The education consists of lectures, exercises, computer exercises, tests and oral presentations. Participation in

the computer exercises 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 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 a pass of computer exercises.

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 I" (MS 10500).

Misc

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