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Stockholm
University

Syllabus
for course at advanced level

Probability Theory
Sannolikhetsteori

7.5 Higher Education Credits
7.5 ECTS credits

Course code:	ST721A
Valid from:	Autumn 2014
Date of approval:	2010-02-24
Changed:	2014-02-19
Department	Department of Statistics
Main field:	Statistics
Specialisation:	A1N - Second cycle, has only first-cycle course/s as entry requirements

Decision
This syllabus was approved by the Board of the Department of Statistics on April 25, 2007 and revised on 19 February, 2014.

Prerequisites and special admittance requirements
Bachelors' Degree including at least 90 ECTS credits in Statistics or equivalent.

Course structure

Examination code	Name	Higher Education Credits
11SE	Probability Theory	7.5

Course content
The course consists of one course unit:
1. Probability Theory

Probability theory is the foundation for the understanding and use of statistical methods. It provides background theory that enables the use of models to describe and analyse various phenomena that characterized by random variations. The aim of the course is to develop understanding of the basis of probability theory and their implications for statistical inference, as well provide skills in implementing them in the area of statistics in general.

The course serves as a basis for other statistics courses at the advanced and research level.

Learning outcomes
To pass the course the student should be able to:
* make use of advanced probability theory to build probability-theoretic models in some applied situations.
* demonstrate understanding of important theorems in probability theory
* solve probability-theoretic problems
* demonstrate understanding of concepts like convergence in the context of probability theory

Education
Teaching forms consist of lectures and exercises. The instruction will be in English if necessary.

Forms of examination

a. Examination will be done by measuring the knowledge of the learning outcomes. Examination will comprise written tests and written reports of group exercises.

b. Grading is done according to a 7-point scale related to the specified learning outcomes:
A = Excellent
B = Very Good
C = Good
D = Satisfactory
E = Sufficient
Fx = Insufficient
F = Completely insufficient

c. Grading criteria will be distributed at the beginning of the course.

d. To pass the entire course, a minimum grade of E for part 1 is required.

e. Students who have received the grade Fx or F on an examination are entitled to at least four additional examinations to achieve the lowest grade E as long as the course is given.
Students who have received the grade E on an examination may not retake this examination in order to attempt to achieve a higher grade.
Students who have received the grade Fx or F on an examination on two occasions by the same examiner have the right to request that a different examiner be appointed to set the grade of the examination. Such a request must be in writing and sent to the head of the department.
Here, the term examination denotes all compulsory elements of the course.

Interim

Students can request examination in accordance with this syllabus up to three times during a period of two years after the course is no longer given. Such a request must be in writing and sent to the head of the department.
Here, the term examination denotes all compulsory elements of the course.

Limitations

Misc

The course is mandatory in the Master programme in Statistics and the Master programme in Survey Methodology and Official Statistics but it can also be studied as an independent course.

Approved course in Probability Theory, advanced course, (ST4070) or Advanced Probability Theory, AN, (ST405A) can be credited to Probability Theory, AN, (ST701A).

Required reading

The course literature is described in an appendix to the syllabus.