UNIVERSITY OF GOTHENBURG

DEPARTMENT OF MATHEMATICAL SCIENCES

MSA150 Foundations of Probability Theory, 7.5 higher education credits

Sannolikhetsteorins grunder, 7,5 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by Department of Mathematical Sciences on 2014-11-21 to be valid from 2014-11-21, autumn semester of 2014.

Field of education: Science 100%
Department: Department of Mathematical Sciences

Position in the educational system

The course is part of the master program in mathematical sciences. It is also open for students outside the program who meet the course prerequisites.

The course is part of the following programme: 1) Mathematical Sciences, Master's Programme

Main field of studies	*Specialization*
Mathematical Statistics	A1N, Second cycle, has only first-cycle course/s as entry requirements

Entry requirements

The student is supposed to have completed a course comprising a substantial part of basic probability theory, such as MSG110 Probability theory.

Learning outcomes

The student should be able to show that she or he has experienced the width of probability theory and its applications,
- has an advanced understanding of dependence and conditioning,
- has a solid competence of carrying out probability calculations, often including use of transforms,

- has appreciated the role played by measures and Lebesgue integration in advanced probability theory.

Course content

Probability theory is a rich and varied area of mathematics, with many applications; modern statistics is based on this theory. The purpose of this course is to study its foundations.
Key words and phrases are: basics, moments, independence and conditioning, the strong law of large numbers, tansforms and the central limit theorem.

Form of teaching

The course comprises lectures, and classes with exercises and discussions.

Language of instruction: English

Assessment

The assessment is mainly based on a written final examination. Bonus points can also be obtained from home assignments.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

Course evaluation

Oral and/or written course evaluation will be performed. The results of the evaluation will be communicated to the students and will serve as a guide for the development of the course.