MSA910   Thesis in Mathematical Statistics for the two-year Masters Program in Mathematical Sciences, 30 higher education credits

Examensarbete i matematisk statistik vid Masterprogrammet i matematiska vetenskaper, 30 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by Department of Mathematical Sciences on 2016-08-17 to be valid from 2016-09-01, autumn semester of 2016.

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

Position in the educational system

The course MSA910 can only be taken as a part of the two-year Master's Programme in Mathematical Sciences. The course constitutes a degree project for a Master's degree (120 credits) in Mathematical Statistics.

The course can be part of the following programme: 1) Mathematical Sciences, Master's Programme (N2MAT)

Main field of studies	*Specialization*
Mathematical Statistics	A2E, Second cycle, contains degree project for Master of Arts/Master of Science (120 credits)

Entry requirements

To be eligible for the course it is necessary to be registered in the two-year Master's Programme in Mathematical Sciences. The courses within the specialization requirements for the specialization *Mathematical Statistics*, specified in the programme syllabus, must be completed.

Learning outcomes

After completing the course, students should

- be able to compare and choose between alternative statistical and probabilistic models after critical judgment
- be able to apply statistical and probabilistic techniques learned from the basic and advanced courses in Mathematical Statistics with help of research literature and software
- have thorough knowledge and understanding of, and insight into current research in the field of the thesis
- have the ability to critically, independently, and creatively identify and formulate issues, and to plan and carry out advanced tasks within specified time limits
- be able to present and discuss their own and others' results orally and in writing
- be able to evaluate their own knowledge, to identify the need for further knowledge, and to take responsibility for obtaining such knowledge.

Course content

A supervisor and a separate examiner are appointed for each student. Students work alone or in pairs investigating a question in a specific area of mathematical statistics. The topic of the project course is determined jointly by the examiner, the student, and the supervisor. The work process typically includes reading relevant scientific literature, building of statistical models and analysis of those by application of probabilistic and statistical methods and by using properly chosen computer software. The results of the work are to be submitted as a Master's thesis report which shall be presented orally at a seminar. The report should be written and presented in English. Students must also act as an opponent at a Master's thesis presentation of another student.

Form of teaching

Teaching consists of tutoring for about 20 hours while the student's total work time is about 800 hours.

The course shall be conducted such that it fills at least half the time of full-time studies and shall be completed within one year from the start. Initially, the student, in consultation with the supervisor, sets up a project plan containing a project description and a schedule. In cases where the student and the supervisor want a timetable extending over more than one year, special reasons must be given, and the plan must be approved by the director of studies before the start of the work.

The timetable may be revised in case of special circumstances (prolonged illness, etc.). In such cases, relevant persons must be notified immediately and the revised plan must be approved by the director of studies. Students who do not finish their thesis according to the agreed (possibly revised) schedule are not entitled to further supervision.

The student should attend at least three other presentations of Master's projects, and the student must be an opponent at one of these occasions.

Language of instruction: English

Assessment

The examiner sets a grade based on an overall assessment of the work performance, in the written report, during the oral presentation, and in the subsequent discussion. In case of a pair project, each student's contributions should be clearly stated in the written report.

To pass, an approved opposition to another Master's thesis presentation and attendance at two other Master's thesis presentations is also required.

Grades

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

Course evaluation

Course evaluation takes place in cooperation between the student, supervisor, examiner, and director of studies during and after the course.

Additional information

The syllabus for MSA910 was originally established to take effect from 2009-09-01.