



Faculty of Science

## NAMAS, Master Programme in Mathematical Statistics, 120 credits

*Masterprogram i matematisk statistik, 120 högskolepoäng*

Second cycle degree programme requiring previous university study / *Program med akademiska förkunskapskrav och med slutlig examen på avancerad nivå*

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### Decision

The programme syllabus is established by Study programmes board, Faculty of Science 24-10-2007 (N 2007-53) and most recently amended by The Board of Faculty of Science 05-02-2020 (U 2020/25). The amended syllabus is valid from 05-02-2020, autumn semester 2020.

### Programme description

The programme for a degree of Master of Science specialising in Mathematical Statistics comprises 120 credits and leads to a degree of Master of Science (120 credits) with a major in Mathematical Statistics.

The programme is based on scholarship and is closely linked to research conducted at the Lund University Faculty of Science. The operations at the faculty uphold academic credibility and good research practice and are arranged to ensure that high standards are attained in courses and study programmes. Furthermore, the operations promote sustainable development, equality between women and men and understanding of other countries and international circumstances. These aspects are integrated in the degree outcomes of the programme.

Second-cycle courses and study programmes in the main field of Mathematical Statistics are fundamentally based on the knowledge acquired by students during first-cycle courses and study programmes.

Second-cycle courses and study programmes in the main field of Mathematical Statistics involve the acquisition of specialist knowledge, competence and skills in relation to first-cycle courses and study programmes, and in addition to the

requirements for first-cycle courses and study programmes shall:

- further develop the ability of students to integrate and make autonomous use of their knowledge,
- develop the students' ability to deal with complex phenomena, issues and situations, and
- develop the students' potential for professional activities that demand considerable autonomy, or for research and development work.

The programme applies a learning perspective, in which students take an active role in the learning process, and consciously and continuously reflect on their learning and development towards the degree outcomes.

The appendix Achievement of learning outcomes for a degree of Master of Science with a major in Mathematical Statistics at the Faculty of Science describes the disciplinary foundation and links to research of the programme.

## Goals

### Knowledge and understanding

For a Degree of Master (120 credits) the student shall

- demonstrate knowledge and understanding in the main field of study, including both broad knowledge of the field and a considerable degree of specialised knowledge in certain areas of the field as well as insight into current research and development work, and
- demonstrate specialised methodological knowledge in the main field of study.

### Competence and skills

For a Degree of Master (120 credits) the student shall

- demonstrate the ability to critically and systematically integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations even with limited information
- demonstrate the ability to identify and formulate issues critically, autonomously and creatively as well as to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames and so contribute to the formation of knowledge as well as the ability to evaluate this work
- demonstrate the ability in speech and writing both nationally and internationally to clearly report and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences, and
- demonstrate the skills required for participation in research and development work or autonomous employment in some other qualified capacity.

### Judgement and approach

For a Degree of Master (120 credits) the student shall

- demonstrate the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues and also to demonstrate awareness of ethical aspects of research and development work
- demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used, and

- demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.

#### *Independent project (degree project)*

A requirement for the award of a degree of Master (120 credits) is completion by the student of an independent project (degree project) for at least 30 credits in the main field of study. The degree project may comprise less than 30 credits, however no less than 15 credits, if the student has already completed an independent project in the second cycle for at least 15 credits in the main field of study or the equivalent from a programme of study outside Sweden.

## **Course information**

The programme comprises 2 years for a degree of Master (120 credits). The appendix Achievement of learning outcomes for a degree of Master of Science with a major in Mathematical Statistics at the Faculty of Science describes the courses included.

## **Degree**

Degree titles

Degree of Master of Science (120 credits)

Major: Mathematical Statistics

*Naturvetenskaplig masterexamen*

*Huvudområde: Matematisk statistik*

## **Requirements and Selection method**

### **Requirements**

Bachelor's degree of at least 180 credits or the equivalent, including at least 90 credits in mathematics, mathematical statistics, numerical analysis, scientific calculations and computer science, of which at least 45 credits must be in mathematics that include courses in multivariate analysis and linear algebra, at least 30 credits in mathematical statistics and at least 15 credits in numerical analysis, scientific calculations and/or computer science.

Proficiency in English equivalent to English 6/B from Swedish upper-secondary school.

### **Selection method**

Based on grades awarded for previous academic courses in science, mathematics and engineering.

## **Transition rules**

The Faculty Board may decide on the discontinuation of a programme or main field and may also decide, in association with this, on transitional provisions for students who have started these programmes.

## **Other information**

Rules pertaining to grades and examination are stated in the course syllabi approved by the Faculty Board.