



## DEPARTMENT OF MATHEMATICAL SCIENCES

### **MSA400 Financial risk, 7.5 higher education credits**

Finansiell risk, 7,5 högskolepoäng

*Second Cycle*

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#### **Confirmation**

This course syllabus was confirmed by Department of Mathematical Sciences on 2016-01-25 to be valid from 2016-07-01, autumn semester of 2016.

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

*Main field of studies*

Mathematical Statistics

*Specialization*

A1N, Second cycle, has only first-cycle course/s as entry requirements

#### **Entry requirements**

Basic courses in linear algebra, calculus and mathematical statistics.

#### **Learning outcomes**

After finishing the course, the students should have a broad knowledge on large financial risks and be able to apply quantitative methods from extreme value statistics and credit risk modelling to analyze large risks.

#### **Course content**

Economic risks lead to catastrophic losses on a regular basis. Among the most spectacular examples are the tulip speculation back in the 17th century and the recent \$18 billion Madoff fraud. The course gives a historical introduction to the subject and an introduction to mathematical methods for analysis of large economic risks, in particular extreme value statistics and credit risk modelling.

**Form of teaching**

Lectures, students' presentations, discussion in class, and question hours.

*Language of instruction:* English

**Assessment**

The examination of the course is based on oral or written presentations, contributions to class discussions, written handins, and a written exam.

**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.