SF2980 Risk Management 7.5 credits

Riskvärdering och riskhantering

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

The course syllabus is valid from Spring 2022 according to the school principal's decision: S-2022-0529 Decision date: 2022-02-24

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Industrial Management, Mathematics

Specific prerequisites

English B / English 6

Completed advanced course in probability theory (SF2940 or equivalent).

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After completion of the course the student shall be able to:

- formulate and apply risk measures and advanced methods for statistical modelling and analysis which are of relevance for the assessment and management of financial risks,
- design and implement methods to analyze data sets which are relevant from a risk management perspective,
- identify and discuss methods for regulatory systems of sustainable financial markets and discuss how aspects of sustainability impact the risk profile of a company.

Course contents

- Modeling and analysis of financial and insurance risks.
- Risk measures: Traditional risk measures, Value at Risk, Expected shortfall, Spectral risk measures.
- Empirical distributions, quantiles and risk measures. Analysis of uncertainty with confidence intervals and Bootstrap.
- Parametric models: model selection, parameter estimation, validation, simulation.
- Extreme value statistics.
- Multivariate models: measures of dependence, elliptical distributions, copulas, simulation.

Examination

- ÖVN1 - Assignments, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.