Linnæus University

Dnr: LNU-2025/1603

Course syllabus

School of Business and Economics
Department of Economics and Statistics

4NA014 Finansiell riskanalys, 7,5 högskolepoäng
Financial Risk Analytics, 7.5 credits

Main field of study
Economics

Subject
Economics

Level
Second cycle

Progression
A1N

Date of Ratification
Approved 2024-02-05.
Revised 2025-06-16. Revision of the prerequisite and update of standard texts.

The course syllabus is valid from autumn semester 2026.

Prerequisites
Specific entry requirements:
90 credits in Economics or in another main field of study in the Natural sciences including a degree project and 30 credits in some of the following subjects: Economics, Statistics, Finance, or Mathematics, as well as English 6, or the equivalent.

Objectives
After completing this course the student should be able to:

- identify and use probability theory and no-arbitrage pricing
- explain discrete and continuous time models
- apply numerical procedures in pricing financial derivatives

- implement and evaluate univariate and multivariate time series models used in forecasting financial risk measures

Content

The course covers the following areas and concepts:

- an introduction to probability theory and no-arbitrage pricing in finance
- binomial pricing models
- continuous-time models, numerical solutions and applications in financial risk modelling
- univariate and multivariate volatility models
- forecasting and back-testing extreme values

Type of Instruction

The teaching consists of lectures, seminars, and computer labs.

Examination

The course is assessed with the grades A, B, C, D, E or F.

The course is examined through an individual written examination 4.5 credits and written group assignments with associated presentations 3 credits.

The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail.

Resit examination is offered in accordance with Linnaeus University's Local regulations for courses and examination at the first- and second-cycle levels.

In the event that a student with a disability is entitled to special study support, the examiner will decide on adapted or alternative examination arrangements.

Course Evaluation

A course evaluation should be conducted during the course or in connection with its conclusion. The results and analysis of the completed course evaluation should be promptly communicated to students who have completed the course. Students participating in the next course instance should be informed of the results of the previous course evaluation and any improvements that have been made, no later than at the start of the course.

Required Reading and Additional Study Material

Required reading

John C. Hull, Options. *Futures and other Derivatives*. Latest edition. About 300 pages.

Ruey S. Tsay. *Analysis of Financial Time Series*. Latest edition. About 400 pages.