



SF2975 Financial Derivatives 7.5 credits

Finansiella derivat

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 motivate central concepts and results within mathematical finance and describe and argue for relations between them.
- apply central concepts, methods and results within mathematical finance to model and analyse financial market models and to price financial derivatives.
- analyse financial markets from different stability perspectives.

Course contents

Mathematical finance and pricing of financial derivatives using martingale theory with particular focus on models in continuous time. The main focus of the course lies on the following topics:

- Martingale measures and their usage for pricing of financial derivatives including the underlying theory.
- Financial Derivatives such as Options, Forwards, and Futures; study of their properties and pricing of them.
- Black Scholes model and its extensions.
- Analysis of various interest rate models (such as forward rate, swap rate, and LIBOR models) and application of them for pricing.
- Change of numeraire and the application of it as a method for derivatives pricing.

Examination

- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- OVN1 - Assignments, 3.0 credits, grading scale: P, 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.