# AI1177 Financial Econometrics 7.5 credits

## Finansiell ekonometri

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

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

## Establishment

Course syllabus for AI1177 valid from Spring 2019

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Technology

## Specific prerequisites

AI1178 Applied mathematics and statistics for economists.

## Language of instruction

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

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# Intended learning outcomes

After the course, students should have knowledge of econometric concepts and methods of statistical analysis of time series data for the real estate and financial markets and related asset classes. After completing the course students will be able to:

- Describe and analyze the prices and returns of key economic time series with a focus on real estate and financial markets.
- Formulate linear univariate and multivariate econometric models for economic time series.
- Estimate linear univariate and multivariate econometric models and perform predictions and hypothesis tests with statistical software.
- Critically interpret, analyze and present results that are based on econometric methods for time-series data.

# Course contents

- Financial time series and data sources
- Classical linear regression analysis
- Descriptive statistics of financial and real estate time-series
- Econometric analysis of univariate time-series
- Econometric analysis of multivariate time-series
- Time-varying parameters, volatility and correlations

# Disposition

Lectures

Exercises in class-rooms and computer rooms

Mandatory group tasks

# Course literature

Introductory Econometrics for Finance by Chris Brooks, latest edition, Cambridge University Press: Cambridge.

Alternative:

Introductory Econometrics: A Modern Approach by Jeffrey Wooldridge, latest edition, Cengage Learning: Mason, OH.

Further readings:

Econometric Analysis by William H. Greene, latest edition, Prentice Hall International: Harlow.

Time Series Analysis by James D. Hamilton, latest edition, Princeton University Press: Princeton, NJ.

Applied Time Series Econometrics by Helmut Lütkepohl, latest edition, Cambridge University Press: Cambridge.

Analysis of Financial Time Series by Ruey S. Tsay, latest edition, John Wiley & Sons: Hoboken, NJ.

Introduction to Modern Time Series Analysis by Gebhard Kirchgässner, Jürgen Wolters and Uwe Hassler, latest edition, Springer: Berlin, Heidelberg.Course literature may change.

# Examination

- INL1 - Assignment, 3.5 credits, grading scale: P, F
- TEN1 - Written Exam, 4.0 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.

# 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.