



# AI2152 Quantitative Methods Applied to Real Estate and Con- struction Management 7.5 cred- its

Kvantitativa metoder tillämpade på fastigheter och byggnader

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 AI2152 valid from Autumn 2013

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Built Environment

## Specific prerequisites

Eligibility to the master programme in Real Estate and Construction Management.

## Language of instruction

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

## Intended learning outcomes

After taking this course you will be able to use, explain and interpret quantitative methods, primarily regression analysis, to examine for instance real estate and construction markets.

After this course you should be able to:

- Run a regression on a data set using the software STATA and interpret the results regarding the following:
  1. Interpretation of coefficients.
  2. Statistical interpretation. For example perform a statistical test whether a coefficient is different from zero.
  3. Coefficient of determination.
- Explain the meaning of the points above.
- Discuss the specification of a regression model (functional form, included variables).
- Identify potential problems in a regression analysis (heteroskedasticity, serial correlation, non-stationarity) and suggest solutions.
- Make a forecast using regression analysis.
- Interpret the results of the regression analysis for instance regarding causal relationships.

## Course contents

This is a course in statistical methods (primarily regression analysis) used to analyze economic and other phenomena. Applications of these methods in real estate and construction markets include valuation and taxation of properties and property price index construction.

Contents in brief

Regression analysis; estimation of linear models using ordinary least squares; STATA; specification of regression models; residual analysis (heteroskedasticity, serial correlation etc); time-series models, cross-section models; stationarity; forecasting.

## Course literature

A.H. Studenmund, /Using Econometrics: A practical guide/, International Edition, Pearson, latest edition.

## Examination

- INL1 - Assignment, 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.

## 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.