



# AI1176 Applied Mathematics and Statistics for Economists 7.5 credits

Tillämpad matematik och statistik för ekonomer

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

## Establishment

Course syllabus for AI1176 valid from Spring 2016

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Technology

## Specific prerequisites

SF1627 Mathematics for Economists 9.0 credits, or matching courses

AI1128 Economics of the Built Environment 7.5 credits or matching courses

AI1175 Basic statistics for economists 7,5 credits or matching courses

# Language of instruction

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

## Intended learning outcomes

After the course, students should have knowledge of mathematical and statistical concepts and statistical methods that economists in different industries apply. The course focuses on linear statistical and economic models. After completing the course students will be able to:

1. Use linear algebra for analysis of linear micro- and macroeconomic models.
2. Formulate linear regression models for business and economic applications.
3. Estimation of linear regression models and perform hypothesis tests with statistical software.
4. Critically interpret, analyze and present results based on linear regression analysis.

## Course contents

- Linear algebra with a focus on vectors, matrices and determinants
- Theoretical and empirical economic models
- Linear microeconomic and macroeconomic models
- Theoretical and empirical economic models
- Simple and multiple linear regression analysis with cross-sectional data
- Basic statistical analysis of time series data

## Disposition

Lectures

Exercises in class-rooms and computer rooms

Mandatory group tasks with Excel (and other software such as MATLAB)

## Course literature

Textbook with a focus on statistical methods for economists, with Computer (Excel)

Lecture notes and training materials, as well as online course material

Sydsæter & Hammond: Essential mathematics for economic analysis, Pearson

- 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.

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.