

# Syllabus

for course at advanced level

**Econometrics 1**  
**Ekometri 1**

**7.5 Higher Education  
Credits**  
**7.5 ECTS credits**

<b>Course code:</b>	EC7410
<b>Valid from:</b>	Autumn 2014
<b>Date of approval:</b>	2013-05-23
<b>Changed:</b>	2014-10-03
<b>Department</b>	Department of Economics
<b>Subject</b>	Economics
<b>Specialisation:</b>	A1F - Second cycle, has second-cycle course/s as entry requirements

## Decision

This syllabus was approved by the Board of the Department of Economics on 3 October 2014.

## Prerequisites and special admittance requirements

Admission to this course requires that the student is either (1) enrolled in a Master's Programme in Economics or Master's Programme in Banking and Finance at Stockholm University, or (2) has (a) general eligibility for second-cycle programmes, (b) special eligibility for the Master's Programme in Economics at Stockholm University, and (c) prerequisites equal to the mandatory courses that have been given prior to this course according to the current curriculum for the Master's Programme in Economics.

## Course structure

<b>Examination code</b>	<b>Name</b>	<b>Higher Education Credits</b>
741A	Econometrics 1	7.5

## Course content

The course begins with a block of preparatory matrix algebra and statistics. This part of the course covers probability theory, such as random variables, probability distribution, expected values, independent samples, the central limit theorem, the law of large numbers, and consistency. Estimation of the population mean, hypothesis testing, and confidence intervals are also discussed. The course then discusses the linear regression model under its classical assumptions (OLS), as well as hypothesis tests and confidence intervals for both simple and multiple regressions. Different types of typical problems for the linear model, such as non-linear functions, omitted and irrelevant variables, simultaneity, measurement errors, heteroscedasticity, and autocorrelation are analysed. In addition, the course includes an overview of time series data, including autocorrelation, non-stationarity, forecasting, structural breaks, and unit roots.

## Learning outcomes

Upon completion of the course, the student is expected to be able to:

1. understand basic probability theory,
2. understand basic statistical concepts,

3. understand basic multiple linear regression,
4. understand basic time series analysis,
5. apply the methods to empirical data and interpret the results.

### **Education**

Instruction is given in the form of lectures and computer experiments. The language of instruction is English.

### **Forms of examination**

The course is examined on the basis of a written examination.

Grades will be set according to a seven-point scale related to the learning objectives of the course: Passing grades are A, B, C, D, and E, where A is the highest grade and E the lowest. Failing grades are F and FX, where F is lower than FX.

Assessment criteria:

- \* A (Excellent): The student should be able to explain the concepts discussed in the course in a comprehensive manner using independent, critical reasoning. The student should also be able to apply the methods to data and real economic problems with great skill.
- \* B (Very Good): The student should be able to explain the concepts discussed in the course using independent, critical reasoning. The student should also be able to skilfully apply the methods to data and real economic problems.
- \* C (Good): The student should be able to largely explain the concepts discussed in the course using independent, critical reasoning. The student should also be able to apply the methods to data and real economic problems.
- \* D (Satisfactory): The student should be able to largely explain most of the concepts discussed in the course. The student should also be able to apply the methods to data and real economic problems.
- \* E (Adequate): The student should be able to explain important aspects of the concepts discussed in the course.
- \* FX (Inadequate): Not used as a grade on the examination.
- \* F (Totally Inadequate): The student is unable to explain important aspects of the concepts discussed in the course. The student demonstrates insufficient ability to apply methods to data and real economic problems.

### **Interim**

If the course is discontinued, students have the right to be examined once per semester for three further semesters.

### **Required reading**

See course homepage available from [www.ne.su.se](http://www.ne.su.se).