

Syllabus

for course at advanced level

**Econometrics
Ekonometri**

**7.5 Higher Education
Credits
7.5 ECTS credits**

Course code:	EC7420
Valid from:	Autumn 2019
Date of approval:	2019-05-16
Department	Department of Economics
Main field:	Econometrics
Specialisation:	A1N - Second cycle, has only first-cycle course/s as entry requirements

Decision

This syllabus was approved by the Board of the Department of Economics on May 16, 2019.

Prerequisites and special admittance requirements

Bachelor's degree with 60 ECTS credits in business administration and 30 ECTS credits in economics or 60 ECTS credits in economics and 30 ECTS credits in business administration. 7.5 ECTS credits in mathematics and 7.5 ECTS credits in statistics. Swedish upper secondary school course English B/English 6 or the equivalent.

Course structure

Examination code	Name	Higher Education Credits
741A	Econometrics	7.5

Course content

The course introduces the student to the statistical and econometrical analysis of data. It combines a theoretical approach with empirical applications from Economics and Finance. During the course, the student also works on real data applications using statistical software. The first part of the course covers some basic elements of Probability Theory and Statistics which are the foundations of the subsequent parts of the course. The second part introduces the linear regression analysis, emphasizing the assumptions and statistical properties of the OLS model. This part also covers Hypothesis testing and post-estimation diagnosis is also covered in this part. The third part of the course focuses on the use of regression analysis for answering empirical questions. It addresses the endogeneity problems created by omitted variables, measurement error and reverse causation. Then, it introduces some basic tools for identification of causal effects including Randomized Control Trials, Instrumental Variables, Differences-in-Differences and Regression Discontinuity Designs. The last part of the course introduces time series analysis.

Learning outcomes

The main goal of the course is that the student learns how to answer empirical questions by applying econometric analysis to data. Upon completion of the course, the student is expected to be able to:

1. Understand basic probability theory and statistical concepts.
2. Understand the linear regression model, its assumptions and implementation.
3. Employ critical thinking to establish when and why regressions can't be causally interpreted.
4. Understand the main tools for identification of causal effects.

5. Use statistical packages to apply the methods covered in the course to data.
6. Understand the basic elements of time series analysis.

Education

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

Forms of examination

The course is examined on the basis of a written examination. Students may be awarded examination credits during the course through voluntary partial 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 skillfully 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 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 largely explain important aspects of the concepts discussed in the course. The student should also be able to apply the methods to data and real economic problems.

* 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.

Limitations

This course may not be included in a degree together with EC7410 Econometrics 1.

Misc

The course is also included in the subject of economics.

Required reading

See course homepage available from www.ne.su.se.