Syllabus

for course at first level

Empirical methods in economics 3
Empiriska metoder i nationalekonomin 3

7.5 Higher Education Credits
7.5 ECTS credits

Course code:	EC2405
Valid from:	Autumn 2019
Date of approval:	2012-02-23
Changed:	2019-05-16
Department	Department of Economics
Main field:	Economics
Specialisation:	G1F - First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Decision

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

Prerequisites and special admittance requirements

Economics I, 30 higher education credits, and EC2403 Empirical Methods in Economics 1, 7.5 higher education credits, or equivalent.

Course structure

Examination code	Name	Higher Education Credits
240A	Termpaper	5
240B	Assignments	2
240C	Oral examination	0.5

Course content

The course aims to provide students with a deeper understanding of the statistical methods used in the empirical analysis of economic problems involving time-series data. The course includes the following methods: OLS with time-series data, auto-correlation, deterministic trend, seasonality, structural breaks, robust inference for heteroscedasticity and autocorrelation, stationarity, stochastic trend, unit roots test, stationarity tests, autoregressive models, maximum-likelihood estimation, information criteria, moving-average models, ARIMA models, VAR models, co-integration and error-correction models, forecasting, Granger causality and forecast evaluation.

Learning outcomes

Upon completion of the course, students are expected to be able to:

* remove trend and seasonality from time-series data, with and without structural breaks;

* perform unit roots/stationarity tests and, using appropriate variable transformation, make data stationary;

* estimate a time-series model using OLS and perform hypothesis tests (t and F tests) with robust inference;

* identify, estimate, and diagnose ARIMA and VAR models;

* test for co-integration and estimate and analyse error-correction models;

* produce and evaluate forecasts using the models discussed in the course.

Education

Lectures, exercises and individual studies in computer labs. The term paper is discussed at a pre-seminar before final submission.

Forms of examination

Written assignments, term paper, and oral review of another student's term paper at a pre-seminar.

Written assignments worth 2 higher education credits are completed in groups and examined using the grades Pass (G) or Fail (U). In order to pass the course unit, all written assignments must receive a passing grade.

An oral review of another student's course paper draft at a pre-seminar, worth 0.5 higher education credits, is carried out individually and examined using the grades Pass (G) or Fail (U). In order to pass the course unit, the review must be carried out in a satisfactory manner.

A term paper worth 5 higher education credits is written individually and examined 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. Grading criteria (regression analysis below refers to the different regression methods that are listed under the section Course content):

* A (Excellent): The student is able to independently carry out an empirical project using regression analysis and interpret the results from an independently identified research question. In addition, the student is able to discuss the strengths and problems of regression analysis, as well as clearly connect the research question to the empirical analysis.

* B (Very Good): The student is able to independently carry out an empirical project using regression analysis and interpret the results. In addition, the student is able to discuss the strengths and problems of regression analysis, as well as demonstrate a clear connection between the research question and the empirical analysis.

* C (Good): The student is able to independently carry out an empirical project using regression analysis and interpret the results. The student demonstrates an understanding of the strengths and problems of regression analysis.

* D (Satisfactory): The student is able to independently carry out an empirical project using regression analysis and interpret the results.

* E (Adequate): The student is able to carry out an empirical project using regression analysis and somewhat accurately interpret the results.

* FX (Inadequate): The student has fulfilled the requirements for E, but has failed to meet requests for clarification or revision of the course paper.

* F (Totally Inadequate): The student has not fulfilled the requirements for E.

Provisions for the final course grade:

* if a student has passed all written assignments and the review of a term paper, the final course grade is determined by the grade on the term paper;

* if a student has failed any written assignments or the review of a term paper, the final course grade is F, regardless of the grade on the term paper.

If a student receives the grade FX or F on an examination, there are no restrictions on how many times they are allowed to retake the examination in order to obtain a grade of E or higher.

Interim

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

Required reading

* James H. Stock & Mark M. Watson, Introduction to econometrics, Pearson education, latest edition.
* Articles.
* Lecture notes