



DEPARTMENT OF ECONOMICS

NEF1002 Econometrics II, 7.5 credits

Ekonometri II, 7,5 högskolepoäng

Third-cycle level / Forskarnivå

Confirmation

This syllabus was confirmed by the Department of Economics on 2018-12-06, and is valid from Spring semester 2019.

Responsible Department

Department of Economics, School of Business, Economics and Law

Entry requirements

To be eligible for the course the participant must be admitted to third cycle studies at the Department of Economics, Gothenburg University or other departments, faculties or universities.

Learning outcomes

On successful completion of the course, the third-cycle student is expected to be able to:

Knowledge and understanding

- understand the theoretical underpinnings and workings of common econometric methods

Competence and skills

- understand and derive the large sample properties of most commonly occurring econometric estimators, including extremum estimators
- read moderately advanced articles in econometric theory with a sufficient understanding to implement many non-standard inferential methods

Judgement and approach

- gain a more unified view of econometric methods, and go beyond the “cook book” understanding of econometric inference where each approach is viewed in isolation

Course content

This course provides an intermediate to advanced treatment of econometric methods for the analysis of cross-sectional as well time-series data. The following topics are covered:

- (i) Regressions as projections and optimality properties of least squares estimation;
- (ii) Convergence in probability and convergence in distribution;
- (iii) Introduction to time-series methods, including a treatment of standard univariate AR and MA models. Topics such as forecasting, and model selection are introduced. Multivariate VARs, and the associated concepts of Granger causality, impulse response functions, variance decompositions, and structural VARs, are also discussed. Non-stationary data and processes are given a cursory overview;
- (iv) OLS consistency and asymptotic normality with dependent data. Derivation of heteroskedasticity and autocorrelation (HAC) robust standard errors;
- (v) Consistency and asymptotic normality of extremum estimators.

Types of instruction

The course consists of lectures.

Language of instruction

The course is given in English.

Grades

The grade Pass (G) or Fail (U) is given in this course.

Types of assessment

Problem sets: There are four problem sets during the course. These will not be graded, but hand-in is mandatory.

Final exam: The exam will cover the topics discussed in the lectures and the problem sets. To obtain a pass grade, the student has to obtain at least 50% of the maximum result on the final exam.

A retake exam will be set approximately six weeks after the regular final exam. A second retake exam will be set no later than 9 months after the first retake exam.

A student who has failed the examination twice has the right to change examiner, if practically possible. Such request must be submitted in writing to the Deputy Head of the Department of Economics.

Course evaluation

A written anonymized course evaluation will be carried out at the end of the course. The results of the evaluation will be communicated to the students and will function as a guide for the development of the course.

Other information

The course is based on lecture notes and relevant research papers. Hayashi (2000) will serve as supplementary reading.

Hayashi, F., (2000), *Econometrics*. Princeton: Princeton University Press.

Number of pages: Approximately 700.

Appendix 1: Reading list

Students registered for Third Cycle studies at another faculty or university must apply for admission to the course to the Deputy Head of the Department of Economics.