



DEPARTMENT OF ECONOMICS

NEF1004 Econometric I, 7.5 credits

Ekonometri I, 7,5 högskolepoäng

Third-cycle level / Forskarnivå

Confirmation

This syllabus was confirmed by the Department of Economics on 2021-06-04, and is valid from Autumn semester 2021.

Responsible Department

Department of Economics, School of Business, Economics and Law

Participating Departments

Department of Economics

Entry requirements

To be eligible for the course the student must be registered in Third Cycle at the School of Business, Economics and Law. 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 economics.

Learning outcomes

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

Knowledge and understanding

- Understand the principles of frequentist statistical inference.

Competence and skills

- Describe empirical problems as random experiments on a population that is represented by random variables.
- Infer properties of the population by means of statistical testing.
- Derive statistical properties of empirical methods.

Judgement and approach

- Evaluate the advantages and drawbacks of different statistical approaches.

Course content

This course provides a graduate-level introduction to statistics with a view towards applications in econometrics. Our main focus will be on understanding the formal language that translates the empirical problem of deducing economic relationships from observed data to the notion of statistical inference on a random experiment. We will review foundational concepts that are already familiar from undergraduate econometrics (e.g., random variables, moments, normal distribution, unbiasedness) at a slightly more rigorous level. In addition, we will cover important topics from classical statistical theory that are often omitted from the undergraduate curriculum in econometrics (e.g., power of tests, order statistics, optimality of maximum likelihood, chi square tests). Moreover, we will discuss some more advanced topics that have important, in some cases fairly recent, econometric applications in more detail. This includes the bootstrap, permutation tests, power calculations and multiple testing. Finally, we will discuss OLS and IV estimation of the univariate linear model.

Types of instruction

The course consists of lectures, self-study modules and discussion sessions.

Language of instruction

The course is given in English.

Grades

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

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Types of assessment

The final grade is determined by problem sets, an in-class presentation of a problem set solution and an oral examination at the end of the course. To receive a pass grade, the student has to pass all three parts.

Students who fail on one of the three parts will be offered an opportunity for a second attempt. The second attempt will cover the same material but may change the form of examination to a written or oral exam.

A student who has failed the course twice has the right to change examiners, if it is possible. A written application should be sent 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

See separate literature list, App 1