COURSE SYLLABUS

Statistik och ekonometri
Statistics and Econometrics
7.5 credits (7,5 högskolepoäng)

Course code: IY2615
Main field of study: Industrial Economics and Management
Disciplinary domain: Technology
Education level: Second cycle
Specialization: A1F - Second cycle, has second cycle course/s as entry requirements

Subject area: Industrial Engineering and Management
Language of instruction: English
Applies from: 2021-08-30
Approved: 2020-11-02

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1. **Decision**

   This course is established by Dean 2019-10-17. The course syllabus is approved by Head of Department of Industrial Economics 2020-11-02 and applies from 2021-08-30.

2. **Entry requirements**

   Admission to the course requires taken course Economic Analysis of Markets, Firms and Industries 7.5 credits.

3. **Objective and content**

   3.1 Objective

   The purpose of this course is to enable students to acquire advanced knowledge in econometrics, specifically regression analysis. The course provides a deeper understanding of cross section, panel and time series data. The emphasis of this course will be on models and methods for the analysis of panel data. The purpose of the course is to provide students with an indepth understanding of inferential theory from a statistical as well as economic perspective.

   3.2 Content
   • Inferential analysis
   • Simple regression models
   • Multiple regression analysis
   • Curve fitting
   • Evaluate the assumptions of linear regression models
   • The use of dummy variables
   • Linear probability models
   • Log linear models
   • Non-linear models: logit, multinomial and probit

4. **Learning outcomes**

   The following learning outcomes are examined in the course:

   4.1 Knowledge and understanding

   On completion of the course, the student will be able to:
   •understand regression concepts and econometric models
   •understand how to analyse data and apply models to investigate the relationship between variables
   •have good understanding of cross section and panel data as well as general knowledge of time series data

   4.2 Competence and skills

   On completion of the course, the student will be able to:
   •be able to develop statistical models to analyse realistic problems with large volumes of data
   •be able to apply simple and multiple linear regression models to analyse cross section and panel data
   •be able to apply log linear models in cross section and panel data

•be able to apply non-linear simple and multiple regression models such as logit and probit models in cross section and panel data

4.3 Judgement and approach

On completion of the course, the student will be able to:
•assess the appropriateness of different regression models depending on the research question
•use advanced knowledge to critically approach different regression models
•evaluate and critically analyse models based on their statistical properties and assumptions

5. Learning activities

The course includes lectures, seminars, exercise laboratory sessions, group study as well as self-study (this can include reading literature, preparation time, doing exercises). Theoretical concepts, theories and models will primarily be dealt with in lectures while application will be carried out through computer labs. Students are required to be able to use software such as STATA, SPSS, MATLAB or R to solve the application exercises. The seminars aim to develop students' ability to explain or discuss their conclusions, whether orally or in writing. The course will be examined on a continuous basis.

6. Assessment and grading

Modes of examinations of the course

Code	Module	Credits	Grade
1910	Written assignment 1	2 credits	GU
1920	Written assignment 2	2 credits	GU
1930	Written examination	3.5 credits	AF

The course will be graded A Excellent, B Very good, C Good, D Satisfactory, E Sufficient, FX Fail, supplementation required, F Fail.

The course-PM for each course revision should include the assessment criteria and make explicit in which modes of examination that the learning outcomes are assessed.

An examiner can, after consulting the Disability Advisor at BTH, decide on a customized examination form for a student with a long-term disability to be provided with an examination equivalent to one given to a student who is not disabled.

7. Course evaluation

The course evaluation should be carried out in line with BTH:s course evaluation template and process.

8. Restrictions regarding degree

The course can form part of a degree but not together with another course the content of which completely or partly corresponds with the contents of this course.

9. Course literature and other materials of instruction

William H. Greene. Econometric Analysis. (Latest edition) Pearson
Peter Kennedy. A Guide to Econometrics. (Latest edition). Wiley
Scientific articles and other materials (500 pages maximum)