FME3551 Applied quantitative research methods 7.5 credits

Tillämpade kvantitativa forskningsmetoder

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus applies from Autumn semester 2023 accourding to ITM School decision on 2023-09-05, M-2023-1626.

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

Upon completion of the course participants will be equipped with a stronger set of skills and knowledge to:

- Generate and applydata for assessing theories, analyse relationships and making inferences.
- Find estimators that have desirable statistical properties including unbiasedness, efficiency, and consistency.
- Design and implement a specific empirical research project.
- Present empirical research project as a scientific paper.
- Critically evaluate research done by others.

Course contents

This is a course in practical application of quantitative methods for doctoral students. The course first introduces methods to collect and store data from existing databases, to generate data by survey approaches and simulation techniques, and to prepare the data for further analysis. Second, it provides theoretical background to analyse data. Third, the course teaches how to use methods from modern empirical tool-boxes to analyse data. Forth, the students applies their skills in quantitative analysis by replicating research from a large number of examples from existing studies, or developing own research-projects. Finally, the course learn the students efficient methods to transform quantita-tive analyses using different statistical softwares to tables, equations and figures in a professional paper.

Course content:

- Dataprocessing
- Introduction to SQL.
- Linear estimation methods.
- Methods for panel dataestimation.
- Instrumental variable regressions.
- Difference-in-difference, matching and event studies.
- Choice modelling using multinomial frameworks.
- Special topics (individual choices).
- Transformation of models, tables and figures into scientific documents.

Examination

- PRO1 - Project work, 4.5 credits, grading scale: P, F
- ÖVN1 - Assignment, 3.0 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.