Introduction to econometrics

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Summary
The course provides an introduction to econometrics. The objective is to learn how to make valid inference from economic data. It explains the main estimators and present methods to deal with endogeneity issues.

Content
• Ordinary least square estimator
• Maximum likelihood estimator
• Instrumental variable
• Panel data
• Experiments and quasi-experiments

Keywords
Econometrics; Statistics; Data Analysis

Learning Prerequisites
Important concepts to start the course
Sound understanding of statistics and probability concepts (central limit theorem, hypothesis testing, etc.)

Learning Outcomes
By the end of the course, the student must be able to:
• Recognize pitfalls and bias in data collection and econometric models
• Illustrate the concept of endogeneity
• Check the validity of an econometric result
• Quantify an economic relationship
• Design an appropriate regression model
• Interpret coefficients of econometric regressions

Transversal skills
• Demonstrate a capacity for creativity.
• Demonstrate the capacity for critical thinking
• Use both general and domain specific IT resources and tools

Teaching methods
Lectures provide the theoretical knowledge and exercise sessions illustrate theory using computer exercises.

Expected student activities
• Attendance and participation at lectures and exercise sessions
• Submission of problem sets

Assessment methods
• Written exam: 60%
• Individual problem sets: 40%

Supervision
Office hours: Yes
Assistants: Yes
Forum: No

Resources
Virtual desktop infrastructure (VDI)
Yes

Bibliography
The course will be based on (ref. not compulsory)

Additional useful references:
• Cameron, A.C. and Trivedi, P.K. Microeconometrics Using Stata. Stata Press, 2010.

Ressources en bibliothèque
• Introduction to econometrics / Stock & Watson
• Introductory econometrics / Woolridge
• Mostly Harmless Econometrics / Angrist (online)
• Microeconomics using Stata / Cameron
• Mostly Harmless Econometrics / Angrist (print)
• Econometric analysis / Greene

Notes/Handbook
Students are provided with lecture slides.

Moodle Link