高级计量经济学
Advanced Econometrics

Fall 2021

Instructor: 马骏

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- Office: 北校区1号楼西配楼106

- Time: Monday 18:00-20:25

- Classroom: 教三3102

- Slides, homework and answers will be posted on the course web-page: https://ruc-econ.github.io/PG_econometrics/

Course Description

- This is a standard master's level econometrics course, covering simple and multiple linear regression, hypothesis testing, instrumental variable and simultaneous equations models, generalized method of moments and resampling methods.

- This course focuses on understanding of basic concepts, mathematical details and proofs (to some extent) and applications in economics.

Prerequisite

- Students are expected to have good knowledge about calculus, probability and statistics and linear algebra.
- There will be a brief review of linear algebra.
- A prior course in undergraduate econometrics would be helpful, but not required.

Textbooks

- Hansen: Econometrics, available at https:// www.ssc.wisc.edu/~bhansen/econometrics/
- Wooldridge: Introductory Econometrics: A Modern Approach
- Verbeek: A Guide to Modern Econometrics
- Handouts will be posted on the course web-page.
- Useful reference: Davidson and MacKinnon, Econometric Theory and Methods
- Other useful references will be mentioned in class.

Software

- Stata learning resources can be found online, see e.g. http://data.princeton.edu/stata/.

- Matlab learning resources can be found online, see e.g. https://ubcmatlabguide.github.io/.

Grading

- 20%*homework (one homework every two weeks approximately) + 40%*midterm exam + 40%*final exam
- Homework should be handed in before class.
- Late homework will not be accepted.

Syllabus

1. Introduction
2. Conditional Expectation and Projection
3. The Algebra of OLS
4. Least Square Regression
5. Normal Regression and Maximum Likelihood
6. Introduction to Asymptotics
7. Asymptotic Theory for OLS
8. Hypothesis Testing
9. Instrumental Variables
10. Generalized Method of Moments
11. Resampling Methods