

Advanced Econometrics (I)

Lecturer: LI Muyi (李木易)

Office Hours: Tuesday 9:00-12:00 a.m.

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Course Description

This course is the first course in a graduate econometrics sequence and provides necessary probability and statistics background for the first-year graduate students for their courses in econometrics, microeconomics, and macroeconomics. At the end of the course, students should have a fundamental understanding of probability and statistics that are relevant to modern econometrics and a solid intuition for statistical concepts from economic perspective.

Required Textbooks

Lecture Notes on Probability and Statistics Theory for Economists, Yongmiao Hong, 2011

Optional Textbooks:

Statistical Inference, Casella, G. and Berger, R. L. Duxbury Press, 2002.

Prerequisites:

Calculus, Linear Algebra.

Homework:

Homework assignments are due in one week..

Grade Policy:

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| Homework | 20% |
| Midterm Exam | 30% |
| Final Exam | 50% |

Course Outline:

Chapter 1. Introduction to Econometrics

Chapter 2. Foundation of Probability Theory

Chapter 3. Random variables and Univariate Probability Distribution

Chapter 4. Important Parametric Distributions

Chapter 5. Random Vectors and Multivariate Probability Distribution

Chapter 6. Introduction to Sampling Theory and Statistics

Chapter 7. Convergence Concepts and Limit Theories
 Chapter 8. Parameter Estimation and Evaluation
 Chapter 9. Hypothesis Testing
 Chapter 10. Conclusion

| Week | Contents |
|-------------|--|
| 1 | Chapter 1-2 |
| 2-3 | Chapter 3 |
| 4-5 | Chapter 4 |
| 5-7 | Chapter 5 |
| | Midterm Exam |
| 8-9 | Chapter 6 |
| 9-10 | Chapter 7 |
| 11-12 | Chapter 8 |
| 13-14 | Chapter 9-10 and Review for the final Exam |
| | Final Exam |

Note that the midterm test is arranged in the middle of the semester. The number of teaching weeks except the National Day week should be 14.