National School of Development
Peking University
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Instructor:
Zhuo Huang 黄卓
zhuohuang@nsd.pku.edu.cn
Tel: 010-62751424

# Advanced Econometrics

# 高级计量经济学

Class Room: 三教 301  Time: Thursday 7-9 15:10—18:00 (It starts on Sept. 12)

TA: Xin Zheng xinecon@gmail.com

TA Session: Thursday 3-4 10:10—12:00 二教 313

Course Objectives

This is the first half of the first-year graduate level econometrics course sequence at the National School of Development at Peking University.

Prerequisite

Undergraduate econometrics
Probability and Statistics, Calculus, Linear Algebra
Basic Matlab or other programming skills

Grading:

The course grade will depend on two one-hour in-class quizzes (30%), home assignments (30%) and the final exam (40%).

Topics Covered:

See attached course outline for details.

Textbook

**Primary Textbook:**

Econometric Modeling with Time Series: Specification, Estimation and Testing, by V. L. Martin, A. S. Hurn and D. Harris

Econometrics, Lecture notes by Bruce Hansen
http://www.ssc.wisc.edu/~bhansen/econometrics/

Introduction to the Mathematical and Statistical Foundations of Econometrics, Herman J. Bierens.

# Course Outline

Lecture 1: Review of Undergraduate Econometrics

Lecture 2: Review of Large Sample Theory (Ch.5 of Hansen, Ch2.2 of MHH)

Lecture 3: Maximum Likelihood Estimator: Part One (Ch.1 of MHH)

Lecture 4: Maximum Likelihood Estimator: Part Two (Ch.2-3 of MHH)

Lecture 5: Hypothesis Testing (Ch.4 of MHH)

Lecture 6: Conditional Expectation Function and BLP (Ch.2 of Hansen)

Lecture 7: Linear Regression Model and OLS: Part One (Ch.3 of Hansen)

Lecture 8: Linear Regression Model and OLS: Part Two (Ch.4, 6 of Hansen)

Lecture 9: Restricted Regression (Ch.7 of Hansen)

Lecture 10: Nonlinear Regression (Ch.9 of MHH)

Lecture 11: Auto-correlated Regression Models (Ch.7 of MHH)

Lecture 12: Heteroskedasic Regression Models (Ch.8 of MHH)

Lecture 13: Endogeneity and Instrumental Variables Estimation (Ch.16 of Hansen)

Lecture 14: Quasi-Maximum Likelihood Estimator (Ch.9 of MHH)

Lecture 15: Generalized Method of Moments (Ch.10 of MHH)

Lecture 16: Nonparametric Estimation (Ch.11 of MHH)

Lecture 17: Estimation by Simulation (Ch. 12 of MHH)