ADVANCED ECONOMETRICS (I)
School of Economics, Peking University
Fall Semester, 2015-2016
Time: 15:10 - 18:00, Thursday
Location: Room 307, Lecture Building 1

Instructor: Julie Shi (石菊), PhD
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Email: jshi@pku.edu.cn
Office hour: 2:00-5:00pm, Wednesday
Course website: course.pku.edu.cn (北大教学网)
TA: Castiel Chen Zhuang (庄晨), cczhuang@pku.edu.cn,
Ye Yuan (原野), yuanyeandjiyaosiji@163.com
TA office hour: 3:00-5:00pm, Monday, first floor of School of Economics

COURSE DESCRIPTION:

This course focuses on the specification and estimation of the linear regression model. Advanced topics include instrumental variables, generalized least squares, maximum likelihood estimation, and discrete choice model. This course is the first part of a two-semester panel of advanced econometrics, concentrating on theoretical analysis, from introducing model assumptions and deriving coefficient estimation to exploring model inference and predictions. The second part of the econometrics panel in the spring semester will concentrate on economic and econometric application.

PREREQUISITES:

Students should be prepared in linear algebra and mathematical statistics at the undergraduate level. The Appendix of the required textbook provides a good summary.

REQUIRED TEXTBOOK:

Econometric Analysis, by William H. Greene, Seventh Edition, Upper Saddle River, NJ: Prentice Hall, 2011, ISBN-13: 978-0131395381 (Chinese translation of the six edition is available, published by the Renmin University Press)

SUPPLEMENTAL MATERIALS (OPTIONAL):

Econometric Analysis of Cross Section and Panel Data, by Jeffrey M. Wooldridge, Second Edition, the MIT Press, 2010, ISBN-13: 978-0262232586

Mostly Harmless Econometrics: An Empiricist's Companion, by Joshua D. Angrist and Jorn-Steffen Pischke, Princeton University Press, 2009, ISBN-13: 978-0691120355

Microeconometrics: Methods and Applications, by A. Colin Cameron and Pravin K. Trivedi, Cambridge University Press, 2005, ISBN-13: 978-0521848053

GRADING POLICY – Your final grade will be based on the following components:

1) Mid-term Exam: 45%;
2) Final Exam: 45%;
3) Homework: 10%;
4) Attendance and Class Participation:

You are expected to attend each lecture and TA session (dates to be announced) and actively participate in the class discussion. Bonus points will be given to those who frequently ask relevant questions and give thoughtful comments in the class. Absence without a valid and documented excuse will result in a 5% reduction of your final grade for each offence. Students who skip classes for more than 3 times will not be allowed to take the final exam.

TENTATIVE CLASS SCHEDULE:

	Topic	Date	Problem sets	Review session
Week 1	Introduction, Matrix Algebra (Appendix A)	Sep. 17		
Week 2	Matrix Algebra_continued	Sep. 24	PS1	RS1*
Week 3	Holiday	Oct. 1		
Week 4	Probability and Distribution Theory Large-Sample Distribution Theory (Appendix B & D)	Oct. 8	PS1 due	RS2
Week 5	Linear Regression Model (Chap. 2)	Oct. 15	PS2	
Week 6	Least Squares (Chap. 3)	Oct. 22	PS2 due	RS3
Week 7	Least Square Estimator (Chap. 4)	Oct. 29	PS3	
Week 8	Hypothesis Test (Chap. 5)	Nov 5	PS3 due	RS4
Week 9	Mid-term Exam	Nov. 12		
Week 10	Endogeneity and Instrumental Variable Estimation (Chap. 8)	Nov. 19	PS4	RS5
Week 11	Generalized Regression Model (Chap. 9)	Nov. 26	PS4 due	
Week 12	Panel Data (Chap. 11)	Dec. 3	PS5	RS6
Week 13	Maximum Likelihood Estimation (Chap. 14)	Dec. 10	PS5 due	
Week 14	Discrete Choice and Event Counts (Chap. 17 & 18)	Dec. 17	PS6	RS7
Week 15	Regression Discontinuity, Propensity Score Matching	Dec. 24	PS6 due	
Week 16	Q&A for Final Exam, or RS8	Dec. 31		

Note: The first review session is scheduled at 6:30-8:30pm on Sep. 27th (Sunday). The location for the review session will be announced soon.