

Econ 507: Spring, 2017; Roger Klein

,

MEETING TIMES: We have three periods for meeting, two of which are for lectures and one for a recitation session. I suggest the following:

Lecture	Mondays	1:10-2:30	Scott 119
Recitation	Mondays	2:50-4:10	Scott 119
Lecture	Wednesdays	1:10-2:30	NJ 101

RECITATION: The main purpose of the recitation session will be to answer questions regarding problem sets (see below). Occasionally, there will be a lecture during this time. Shuyang Yang will conduct the recitation session

TEXT: W. Greene, *Econometric Analysis*, Note: The chapter numbering below refers to the 7th edition. However, any addition will be fine for this course. . Handouts and lecture notes will be posted and will of primary importance.

GOALS AND ASSESSMENT: The purpose of this course is to provide the foundation for doing applied empirical work in economics. Grades will be determined as follows:

Problem Sets	20%
Interm Exam	15%
Midterm Exam	30%
Final Exam	35%

PROBLEM SETS: The problem sets will directly count for 20% of your grade. In making this calculation, the problem sets with the lowest score will be discarded. You are encouraged to work together on the assignments, but please provide your own write-up and be sure that you understand how to do the problems. A large fraction (about 80%) of each exam will include questions that are similar (though not identical) to those covered in problem sets and/or emphasized in class. Consequently, it is essential that you understand how to do these problems. **You may and are encouraged to ask questions before you turn in the problem sets. A key to doing well in this course is to ask questions both in and outside of class.**

EXAMS: Exams will be open-book and open notes. Approximately 80% of each exam will cover problems similar to those done in problem sets.

OFFICE HOURS: Wednesdays, 4-6.

Please contact me if you have questions and can not come during the regular office hours. I can be reached at:

Email: rogerwklein@gmail.com

Phone:(848) 932-7543

Since each topic depends on previously covered material, I strongly encourage you to ask questions in and outside of class as we go along; do not wait until just before exams. As stated above, I encourage you to ask any questions that you may have about problem sets before they are due.

Course Outline

The following outline gives the topics that we will cover and the approximate dates for each topic. This outline is tentative in that we may spend more or less time on some topics than is indicated below. There will be several additional lectures given outside of the regularly scheduled course times to cover optional topics.

There are many editions of Greene's book, any of which would be fine for this course. If you do not have the current edition, some of the chapter numbers below may be different in your book. However, the topics covered are the same and you only need to find the chapter covering the stated topic. I will often give explanations in class and/or in handouts that differ from those in the book. In these cases, the lecture and handouts will be most important. You will be responsible for the material on which I lecture, and problem sets will be based on this material.

- **INTRODUCTION AND REVIEW:** : Jan. 18

- **LINEAR REGRESSION:**
 - **Estimation:** Greene, Chapters 1-4: Jan. 23, 25, 30
 - **Inference:** Greene, Chapter 5: Feb. 1, 6, 8
 - **Dummy Variables:** Greene, Chapter 6 (Sections 1-2): Feb. 13

REVIEW SESSION, TBA
INTERM EXAM, MONDAY FEB. 20

- **NONLINEAR LEAST SQUARES** : Feb. 22 , 27

- **BINARY MODELS**: March 1, March 6

- **CATEGORICAL MODELS**: March 8,

SPRING BREAK, MARCH 11-10

- **CATEGORICAL MODELS Continued**,: March 20, 22

- **A Hausman Test for Transformation Models**

- * · Hausman, J., "Specification Tests in Econometrics," *Econometrica*, Nov. 1978, v. 46, #6.

MIDTERM EXAM, MARCH 27

- **THE ENDOGENEITY PROBLEM**: March 27, 29., April 3, 5, 10

- **The Linear Case: 2SLS, Control, and GMM Estimators.**

- * · Greene, Selected portions of Chapter 8

- **Optimal IV in General Parametric Models–Nonlinearity**

- * · Newey, W.K., "Efficient Instrumental Variables Estimation of Nonlinear Models," *Econometrica*, July, 1990, v. 58, 809-837.

- **Endogenous Treatment Models**

- **PARTIALLY LINEAR MODELS**: April 12, 17, 19

- **HETEROSCEDASTICITY:** April 19, 24, 26
 - **A Score Test for Heteroscedasticity**
 - * · Breusch, T. and A. Pagan, "A Simple Test for Heteroscedasticity and Random Coefficients," *Econometrica*, 1979, 1287-1294.
 - Koenker, R.. "A Note on Studentizing a Test for Heteroscedasticity," *Journal of Econometrics*, September, 1981, v. 17, pp. 107-112.
 - **Correcting for Heteroscedasticity**
 - * · Greene, Chapter 9
 - **A Semiparametric Model for Heteroscedasticity**

- **PANEL DATA AND TIME SERIES** May 1 (2 lectures)

FINAL REVIEW SESSION: TO BE SCHEDULED
FINAL EXAM; TO BE SCHEDULED