

## 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

For the first and only the first week of classes:

Lecture Friday, Jan. 19 10-11:30 NJ Hall, 105

**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. When this is the case, I will let you know in advance.

**TEXT:** There is no required text for the course. Prior to each topic, handouts will be posted on Sakai. It will be very important to read these and not to miss classes. Though not required, if you would like to refer to a text, several possibilities are:

- W. Greene, *Econometric Analysis*J.
- J. Wooldridge, *Econometric Analysis of Cross Section and Panel Data*

**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:** 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:** To be announced.

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

Email: [rklein@economics.rutgers.edu](mailto:rklein@economics.rutgers.edu)

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Since each topic depends on previously covered material, I strongly encourage you to ask questions in and outside of class throughout the semester; do not wait until just before exams. As stated above, I encourage you to ask any questions that you 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,

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

- **LINEAR REGRESSION:**

<b>Estimation:</b>	Jan.22, 24, 29
<b>Inference:</b>	Jan., 31, Feb. 5, 7
<b>Dummy Variables:</b>	Feb.12, 14

REVIEW SESSION, Feb. 14, 16(?)

INTERM EXAM, MONDAY FEB. 19

- **NONLINEAR LEAST SQUARES** : Feb. 21 , 26
- **BINARY MODELS**: Feb. 28, March 5
- **CATEGORICAL MODELS**: March 7,

## SPRING BREAK, MARCH 10-18

- **CATEGORICAL MODELS Continued**,: March 19, 21
  - **Ordered Probit Models and Misreporting**
  - **A Hausman Test**
    - \* · Hausman, J., "Specification Tests in Econometrics," *Econometrica*, Nov. 1978, v. 46, #6.

## REVIEW SESSION, TO BE SET MIDTERM EXAM, MARCH 26

- **THE ENDOGENEITY PROBLEM**: March 26, 28., April 2, 4, 9
  - **The Linear Case: 2SLS, Control, and GMM Estimators.**
  - **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 11, 16, 18
  
- **HETEROSCEDASTICITY:** April 18, April 23, 25
  - **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.
  - **Correct OLS Inference & Heteroscedasticity**
  - **GLS and a Semiparametric Model for Heteroscedasticity**
  
- **PANEL DATA AND TIME SERIES** April 30 (2 lectures)

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