

**Fall 2007
Georgia State University**

**Economics 8740
Applied Statistics and Econometrics**

**Dr. Klara Sabirianova Peter
Assistant Professor**

ADMINISTRATIVE INFORMATION

Schedule:	Tuesday/Thursday 11:00 AM-12:15 PM
Class Location:	Sparks Hall 137
Office Hours:	Tue 3:30-5:00 PM or by appointment
Office Phone:	(404) 413-0165
Office Location:	Andrew Young School of Policy Studies (AYSPS), room 553 (The AYSPS building is located at the intersection of Marietta and Peachtree Streets; my office is on the 5 th floor – take a left off the elevators.)
Email Address:	kpeter@gsu.edu
Course Webpage:	on WEBCT Vista
Teaching Assistant (TA):	Denvil Duncan (ecodrxd@langate.gsu.edu)
TA Office Hours:	Thursday 2:00-3:15 PM or by appointment (AYSPS, workstation 556M, 5 th floor)

COURSE DESCRIPTION

This course develops basic knowledge of applied statistics and econometrics with a particular focus on the relationship between economic variables. The emphasis of the course is on hypothesis testing and economic interpretation of statistical results. The course will introduce estimation approaches such as simple and multiple regression analysis, simple panel data analysis, instrumental variable models, time-series, forecasting, and evaluation. These techniques will be applied to real data for the purpose of policy analysis in the areas of labor markets, industrial organization, finance, economic development, and taxation.

WEBCT

The course webpage is located on the WebCT site. You should check my WebCT site on a regular basis for announcements, handouts, data and online quizzes. You are responsible for any information I post on WebCT at least 24 hours before class.

I will post practice questions and copies of old exams. These resources might be very helpful in preparing for your exams.

REQUIREMENTS

Prerequisites for the course: principles of microeconomics, principles of macroeconomics and a course in introductory statistics.

Grades are based on homeworks (20%), two exams (each 25%), and a research project (30%).

Each of these is described below.

Homeworks (20%): Homeworks consist of bi-weekly problem sets and occasional online quizzes.

Problem sets will involve empirical analysis. Please hand in homework assignments **before class** on the day they are due. Assignments handed in after class, but before answers are distributed (typically two days later) will be marked down by 50%. Assignments handed in after answers are distributed will receive no credit.

Problem sets can be submitted jointly with another student. The **maximum** size of the group is **two**. Please append your “log” files to your assignments.

I will also give occasional online quizzes that have to be completed **individually**. I will announce these quizzes during class and on WebCT.

Missed homeworks (problem sets and online quizzes) will be scored as a zero; your lowest two scores will be dropped, and all remaining scores will be averaged for this part of your grade. Don't wait until the last minute to do homeworks and online quizzes – computer problems are NOT an excuse for missing homework.

Exams (50%): There will be two in-class exams: midterm and final.

All exams are on Thursdays:

Midterm exam: October 11 during regular class hours

Final exam: December 13 at 10:15 AM

You may NOT take in-class exams at any time other than the scheduled exam time.

I use a different policy with respect to valid and invalid reasons for missed exams. The valid reasons are documented medical illness that prevents you from taking the exam (with physician's phone number), a death in your immediate family, or a documented mandatory court date. All other reasons are invalid. For example, being confused about the date or time of the exam, over-sleeping, or being out of town are not valid excuses for missing any exam.

If you miss an exam for an invalid reason, you will receive a score of 0 for the missed exam.

If you miss the midterm exam for a documented valid reason (specified above), I will substitute the row score on the final exam for your missed exam. If you miss the final

exam for a documented valid reason (specified above), I will offer a make-up final exam.

Project (30%): The important requirement for the course is to write a research project based on data analysis. Students can write the project in the group of two. The project has two parts: a prospectus, due **October 23** at 11:00 am, and a paper due **November 29** at 11:00 am. We will discuss possible topics in class. Guidelines for the research project as well as relevant web sites and data sources will be posted on the course web page. The projects will be discussed in the class during the latter part of the semester.

I do not offer extra credits on an individual basis. I will never offer one student an opportunity that I do not provide to the entire class.

GRADING

I do not "curve" grades into a bell-shaped distribution, but will add extra points to all exam scores in order to bring the average grade on any exam up to B-(79). The following grading scale will be employed:

92 and above	A	79 - 81	B-	60 - 68	D
89 - 91	A-	76 - 78	C+	59 and below	F
86 - 88	B+	72 - 75	C		
82 - 85	B	69 - 71	C-		

Your grade will be determined by calculating the percentage of the possible points that you earned during the semester. Any fraction greater than or equal to 0.5 rounds up, all others round down. For example, a final weighted average of 79.5 rounds to 80, which is a B; 79.4 rounds to 79, which is a C.

All homework and exam scores will be posted on the class website shortly after they have been given. Check your scores regularly. You will have 10 days from the date of posting to notify me of any errors.

IMPORTANT DUE DATES

Midterm exam: October 11 at 11:00 am
Prospectus: October 23 at 11:00 am
Research paper: November 29 at 11:00 am
Final exam: December 13 at 10:15 AM

TEXT

Wooldridge, Jeffrey M. Introductory Econometrics: A Modern Approach, 3rd Edition, South-Western, 2006.

Wooldridge, Jeffrey M. Student Study Guide with Solutions.

COURSE SOFTWARE

There are several statistical packages for analyzing data. In this course the chosen software is STATA. This software is available for registered students from any campus computer. To obtain the software you should connect to the AYSPS FRP server. Go to Programs/Accessories/Communications/Remote desktop connection (or Programs/Internet/Remote desktop connection) and type frpserver.gsu.edu. Type in your user ID (first name initial and your last name) and hit "Enter." The system will then ask you to select a password. Once this is complete you can access STATA on the server.

All data for this class will be stored on the FRP server in the following directory E:\eco8740\Data. You will also have your own folder where you can store your programs and log files E:\eco8740\students\your_userid. Please contact Denvil Duncan (ecodrxd@langate.gsu.edu) or Lakshmi Pandey (prclpp@langate.gsu.edu) for problems with access to the server.

You may also purchase a small annual license for \$45 to install on your PC but this is strictly optional. Please follow the instructions below:

1. Go to www.stata.com
2. Select "Order Stata"
3. Select "Educational Purchases"
4. Select "Place an order" under "GradPlans"
5. Select "Georgia" and "Georgia State University"
6. Select "Small Stata plus Getting Started manual"
7. Complete order and receive confirmation email

For your homework and research paper you are welcome to use any other statistical software such as Excel, SAS, SPSS or Eview. Data will be available in various formats for your convenience.

POLICIES

The course syllabus provides a general plan for the course. Modifications may be necessary.

Students must follow the Policy on Academic Honesty (section 1344 in the Graduate Catalog, pages 53-56).

You are expected to attend class regularly. All University rules regarding drop dates and W/WF grades will be adhered to.

You cannot use programmable calculators during exams or quizzes. Both Staples and Office Depot sell several inexpensive calculators (less than \$5) that will work fine for this class. It is your responsibility to bring a valid calculator, pencil, and eraser to all exams.

Turn off your telephones, pagers, etc. when class begins. If you must miss class, get notes from a classmate and check WebCT to see what you missed.

COURSE OUTLINE

This is a general plan for the course; deviations may be necessary. My classroom presentation sometimes differs from that in the textbook. In this case, you are responsible for the material as I have covered it in class. You are not responsible for the material that was not covered in class.

Course introduction

The nature of econometrics - Ch. 1 Wooldridge

Simple regression model – Ch. 2

Multiple regression analysis: introduction – Ch. 3

Multiple regression analysis: interpreting results – Ch. 3

Multiple regression analysis: omitted variables – Ch. 3

Multiple regression analysis: statistical properties – Ch. 3

Multiple regression analysis: inference – Ch. 4

Multiple regression analysis: functional form – Ch. 6

Multiple regression analysis: selection of regressors – Ch. 6

Multiple regression analysis: forecasting and evaluation – Ch. 6

Multiple regression analysis with binary variables – Ch. 7

Heteroscedasticity – Ch. 8

Data problems – Ch. 9

Regression analysis with time-series data – Ch. 10

Simple panel data methods – Ch. 13

Instrumental variables – Ch. 15

Discussion of student papers

INTERNET RESOURCES FOR LEARNING ECONOMETRICS

The following internet references provide useful online help for better understanding of regression analysis and econometrics.

[Hyperstat Online Textbook](#)

An introductory statistics book and online tutorial for help in statistics courses.

[Electronic Statistics Textbook](#)

[LSE Ec220 Introduction to econometrics](#)

Undergraduate course by Christopher Dougherty, London School of Economics; the website includes extensive teaching materials with slides, datasets, study guide, and handouts.

[Statistics and Introduction to Econometrics](#)

Course information, lecture notes, and exercises for Statistics and Introduction to Econometrics course at the University of Bristol.

[Econometrics](#)

Econometrics lecture notes by A. Buck, Temple University.

[Econometric Resources on the Internet](#)

This site is designed by John Kane, Oswego State University of New York to assist in finding econometric resources on the internet.

INTERNET RESOURCES FOR LEARNING STATA

[Resources to Help you Learn and Use Stata](#), UCLA Academic Technology Services, USA – an extensive resource of Stata information, including FAQs, learning modules, a quick-reference guide, annotated output, textbook examples, and more.

[Survival Analysis with Stata: Course EC968](#), Stephen Jenkins, Institute for Social and Economic Research, University of Essex, UK – lessons, programs, do-files, and a PDF book about survival analysis in Stata.

[An Introduction to Stata](#) (pdf), IT Support at the LSE Research Laboratory, UK – an introduction to Stata and various commands.

[Introduction to Stata 8](#), Svend Juul, Department of Epidemiology and Social Medicine, University of Aarhus, Denmark – a 72-page introduction describing the basics of Stata 8, including a guide to using the new Stata 8 graphics.

[Graduate Statistics Lecture Notes](#), Richard Williams, Sociology Department, University of Notre Dame – extensive lecture notes covering applied statistical topics from probability distribution through logistic regression, with examples using Stata.

[Stata Introduction](#), Princeton University, USA – an extensive introduction to Stata covering general information about Stata and for learning Stata.

[Introduction to Stata 8](#) (pdf), Christopher F. Baum, Boston College, USA – a 67-page description of Stata, its key features and benefits and other useful information.

[LAB1: Introduction to Working with Stata 8](#) (pdf), Karolinska Institutet, Sweden - a brief introduction, including course notes and exercises, on handling data in Stata.

[Introduction to Stata](#) (pdf), Yi-Chi Chen, University of Washington, USA – an introduction to Stata, including basic commands and features, for a CSSCR course.

[Data Management Tutorial](#), Carolina Population Center, University of North Carolina at Chapel Hill, USA – tutorial, examples, and question-and-answer sessions on managing data in Stata, with an emphasis on survey data.

[UCLA Stata Portal](#), UCLA Academic Technology Services, USA – a web site that links and searches across Stata sites around the world, and more. This is a place where developers of Stata resources collaborate to create an infrastructure to help their own Stata community while providing a service to Stata users all over the world.

[Stata Tutorials for the American Economic Association Summer Program 2004](#), Duke University in partnership with North Carolina A&T State University – Class notes, tutorials, and do-files by Stas Kolenikov for the American Economic Association Summer Program at Duke University.