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Location: 235 GSB

Mills College
Department of Economics
Lokey School of Business
and Public Policy (GSB)

ECON 164 / MGMT 264
Econometrics and Business Forecasting
Spring 2017

CRN	Meeting time	Location	Final exam
10037 [164-01]	Tue/Thu 9:30am–10:45am	117 GSB	TBD

COURSE OVERVIEW. Econometrics is the science of applying linear regression analysis techniques used in many scientific disciplines to applied problems in economics and business. This introductory course covers the core concepts of classical regression, which are broadly applicable across quantitative disciplines. The twin goals of the course are for you (1) to understand the basic theory of regression analysis, and (2) to know how to carry out your own regression analysis using standard regression software. After completing this course, you will be able to interpret standard regression results reported in journal articles, and you will have the intellectual foundation needed for continued study in statistical modeling methods. You will also know how to organize real data in a regression-friendly format, how to use statistical software to estimate a variety of linear regression models, how to decide which model is best suited to your question, and how to report your findings.

CORE CURRICULUM / GEN ED REQUIREMENTS. TBD

LEARNING GOALS. The complete list of course goals is listed online. An abbreviated summary list appears here. Econ 164 aims to accomplish the following broad learning goals:

- Identify relevant statistical information associated with a problem
- Summarize quantitative and qualitative data accurately, responsibly, and effectively
- Apply statistical analysis tools and regression analysis tools to answer the problem
- Develop critical thinking skills

PREREQUISITES. ECON 050 and ECON 081. Basic knowledge of algebra is important.

COMPUTERS. Laptops are not required, but I highly encourage students to obtain and bring laptops to class if at all possible. Computer clusters are available in Lucie Stern Hall.

SOFTWARE. You need to obtain access to **STATA**, a common statistical software package, in order to complete the course requirements. You have several options:

- You can purchase a 6-month copy of "small Stata" quickly online for $38. Skip optional DVD.
  http://www.stata.com/order/new/edu/gradplans/student-pricing/

Small Stata is limited in the size of datasets it can handle, but that should not be a problem for completing coursework in Econ 164.

- The Mills Helpdesk informs me there are 5 licenses of STATA 10 installed in Stern 14.
- If you are already proficient in another software tool, please see me to discuss. MS Excel is not sufficient, but if you know **R** or **SAS** or **Python** and want to use that instead, we can talk.

Like any software, Stata is not the easiest to learn. We will use it exclusively in class. Its integrated documentation is extensive, and Google searches will typically turn up answers to common questions. When I learned Stata almost 25 years ago, I used *Statistics with Stata:*

http://www.stata.com/bookstore/statistics-with-stata/

It was a little cheaper back then.

REQUIRED TEXTS. We will use Wooldridge's *Introductory Economics: A Modern Approach, 6th edition* by Cengage. You can find new and used copies at the Mills bookstore, Amazon, etc. Olin Library owns a copy of the 4th edition from 2009, and I have asked the library to place it on 2-hour reserve. The materials are likely not to have changed significantly between the 4th and 6th editions; please be advised it is up to you to assess whether and how they may have changed.

STUDENTS WITH DISABILITIES and other special needs will be fully accommodated. Please see Student Access and Support Services in the Cowell Building. For athletes, students planning to travel, and others with similar needs: please check the course schedule and notify me via email about any potential conflicts with your own schedules.

ACADEMIC INTEGRITY. Students are expected to act in a manner consistent with the Mills College Community Standards and Honor Code as described in the Student Handbook available at https://www.mills.edu/handbook.pdf. Students engaging in academic dishonesty will receive an immediate F in the course and a referral to the Dean of Students.

COURSE REQUIREMENTS. Your overall course grade in Econ 164 will be determined in the following way:

1. Attendance and participation	20%
2. Weekly (roughly) online problem sets	20%
3. Empirical **term project** deliverables	60% total
A. Topic statement with 3 sentences: question, data, answer	10%
B. Produce a single table or figure with your data set	10%
C. Rough draft at midterm: at least 1 table/figure with text	10%
D. Mostly done draft	10%
E. Final draft	10%
F. Emailed response to final comments	10%

Course requirements are subject to change.

CLASS PARTICIPATION. To earn full participation credit, students are required to (1) **attend class** and (2) be prepared to discuss **assigned readings** and topics. You can miss two classes unexcused and still receive full credit.

PROBLEM SETS will be available online on Blackboard. You may work together, but students are on their honor to submit only their own work.

TERM PROJECTS. Students are required to complete an empirical term paper on a topic of their choosing. The goals of this term project are for you to analyze **primary data** with Stata, applying skills econometric analysis skills that you develop during the term, and to discuss what the data analysis reveals about a **question**.

Primary data must be rows and columns of observations and variables, such as are contained in the datasets that we examine in class, which are available for you to download as a zip file on Blackboard. They cannot be summary statistics in a table of a published report. If you are uncertain about what counts as primary data, ask me.

Choosing your data, choosing your topic. You may devise your own research question and find data that speak to it, but I cannot spare the resources to help you. Instead, I suggest that you browse the class datasets and devise a research question based on the extensive array of data that you see. Start with the **PDF guide to datasets** on Blackboard inside Content > Data.

In their final versions, papers should be no more than five printed double-spaced pages of text, plus any references and any figures and tables you may want to add, up to a maximum of 7 figures and tables combined. A good paper includes:

1. An introduction outlining the question you are trying to answer and why it is interesting
2. An explanation of which data you are using and how you analyze the data
3. A presentation of your findings
4. A conclusion explaining what your findings imply about your original question

The conclusion can also recommend a better way to answer the question. For example, you could discuss another real or hypothetical data source that you didn't analyze.

The goal of the paper is for you to confront theory with real data. You do not need to do extensive reading on your subject, nor do you need to use any fancy statistical techniques to do your analysis. Simple is fine. What is important is that your paper be clear, original, and that you explain how your analysis addresses the question you are interested in. **Avoid spending too much time reviewing the literature.** Focus on data analysis.

Deadlines. See the course calendar at the end of this syllabus for due dates. Unexcused late submissions will be docked a third of a letter grade for each day they are late. Meet your deadlines. If you know you cannot, see me.

Collaboration. Students must devise, carry out, and write up their own term projects. *All the words tables, and graphics in your term paper must be your own*, and each student must complete a term paper.

But collaboration in the form of mutually helping one another and learning the material together is highly encouraged. We will discuss collaboration during the first class meetings and throughout the term.

Overlapping projects. Students may wish to write a single paper to satisfy multiple obligations, such as Econ 164 and a senior honors thesis. This is acceptable if the overlapping work includes new work completed this term that meets the requirements for Econ 164.

WEB SITES. We will be using Blackboard to distribute course materials, submit assignments, and check grades:

http://blackboard.mills.edu

PIAZZA, an optional Q&A Forum. Piazza.com is a free online forum for students in a class to interact with each other and with GSIs and professors outside of the classroom environment. Per its founder and CEO, Piazza was started so that every student can have the opportunity to learn from classmates outside of class. To access the class Piazza site, navigate to http://piazza.com

Econ 164 Syllabus **Spring 2017**
Last updated: **1/12/17 14:47**

Week	Monday	Tuesday	Thursday
1			**19-Jan** Class 1: Introduction
2	**23-Jan**	**24-Jan** Class 2: Simple regression model: Definition Reading: Wooldridge Chapter 2	**26-Jan** Class 3: Simple regression model: Estimation Reading: Wooldridge Chapter 2
3	**30-Jan**	**31-Jan** Class 4: Properties of bivariate OLS Reading: Wooldridge Chapter 2	**2-Feb** Class 5: Properties of bivariate OLS Reading: Wooldridge Chapter 2 **A. Topic statement with 3 sentences**
4	**6-Feb**	**7-Feb** Class 6: Multiple regression: Estimation Reading: Wooldridge Chapter 3	**9-Feb** Class 7: Multiple regression: Estimation Reading: Wooldridge Chapter 3
5	**13-Feb**	**14-Feb** Class 8: Multiple regression: Statistical properties Reading: Wooldridge Chapter 3	**16-Feb** Class 9: Multiple regression: Statistical properties Reading: Wooldridge Chapter 3
6	**20-Feb**	**21-Feb** Class 10: Multiple regression: Inference 1 Reading: Wooldridge Chapter 4	**23-Feb** Class 11: Multiple regression: Inference 1 Reading: Wooldridge Chapter 4 **B. Produce a single table or figure with your data**
7	**27-Feb**	**28-Feb** Class 12: Multiple regression: Inference 2 Reading: Wooldridge Chapter 4	**2-Mar** Class 13: Multiple regression: Inference 2 Reading: Wooldridge Chapter 4
8	**6-Mar**	**7-Mar** Class 14: Multiple regression: Further issues Reading: Wooldridge Chapter 6	**9-Mar** Class 15: Wrap-up Reading: Wooldridge Chaps. 1-4, 6
9	**13-Mar**	**14-Mar** Class 16: In-class review, with open Q&A	**16-Mar** Class 17: MIDTERM EXAM **C. Rough draft: At least 1 tab/fig with writeup**
10	**20-Mar** **SPRING BREAK**	**21-Mar** **SPRING BREAK, no class**	**23-Mar** **SPRING BREAK, no class**
11	**27-Mar**	**28-Mar** Class 18: Dummy variables Reading: Wooldridge Chapter 7	**30-Mar** Class 19: Dummy variables Reading: Wooldridge Chapter 7
12	**3-Apr**	**4-Apr** Class 20: Heteroskedasticity Reading: Wooldridge Chapter 8	**6-Apr** Class 21: Heteroskedasticity Reading: Wooldridge Chapter 8
13	**10-Apr**	**11-Apr** Class 22: Time Series Reading: Wooldridge Chapter 10	**13-Apr** Class 23: Time Series Reading: Wooldridge Chapter 10 **D. Mostly done draft**
14	**17-Apr**	**18-Apr** Class 24: Panel Data Reading: Wooldridge Chaps. 13-14	**20-Apr** Class 25: Panel Data Reading: Wooldridge Chaps. 13-14
15	**24-Apr**	**25-Apr** Class 26: Instrumental Variables Reading: Wooldridge Chapter 15	**27-Apr** Class 27: Instrumental Variables Reading: Wooldridge Chapter 15
16	**1-May**	**2-May** Class 28: In-class review, with open Q&A **E. Final draft**	**4-May** **READING DAY**
		9-May	**11-May** **Exam time block: 9am-noon** **Current plan: Take-home exam** **F. Emailed response to final grade**