Syllabus for Econ 120c Spring, 2009

Contact Information

- **Gray Calhoun (Lecturer)** **OH** Wed and Fri 9-10 in Econ Annex gcalhoun@ucsd.edu
- **Frank DiTraglia (TA)** **OH** Tues 1-2, Th 9:30-10:30 in Econ 120 fditraglia@ucsd.edu
- **Chris Wignall (TA)** **OH** Tues 9-10 in Seq 206 wignall@ucsd.edu

We have set up WebCT for the class, and you should be able to check your grades and download a copy of this syllabus there.

Goals for the course

This class is the last econometrics course in the main sequence. We are going to build on the material that you learned in 120a and 120b. In 120b you studied cross-sectional linear regression, which can be useful in experimental settings or for describing a dataset, but often is misleading when we try to apply it to observed economic data. In 120c, you'll learn some other statistical models that can be used instead of linear regression. You'll learn how to estimate these models on real datasets using Stata, a statistical package that you were introduced to in 120b, and we'll discuss the mathematical theory behind these models so that you will know when they are appropriate.

Textbook and Software

The required text for this class is Stock and Watson's *Introduction to Econometrics.* Many of the homework exercises will be assigned from the textbook, and I expect you to do the assigned reading throughout the quarter. This book is the only book that you are expected to purchase for the class.

We are also going to cover Stata. Stata is installed on some of the computer labs on campus: ECON 100, ERC 116/117 and CLICS 263. You can also purchase the student version of Stata to install on your own computer from the website http://www.stata.com/order/schoollist.html. There is an online Stata Tutorial that was written for our textbook: you can find it at http://wps.aw.com/wps/media/objects/3833/3925976/tutorials/stata_tutorial.pdf (or search on Google for the textbook's website).

If you are interested in learning how to write about Statistics, Economics, and Econometrics or learning more about representing data graphically, you should read the books *The Chicago Guide to Writing about Numbers* and *The Chicago Guide to Writing about Multivariate Analysis* by Jane Miller, *Visualizing Data* by William Cleveland, and *The Visual Display of Quantitative Information* and *Envisioning Information* by Edward Tufte. I've put these books on reserve at the library in case you're interested in reading them, but these books are not required for the course, and you will not be responsible for their material on any exam.

Material and Exams

We'll have one quiz that counts for 10% of your grade, four homework assignments that together count for 10% of your grade, and two midterms and one final exam that collectively account for 80% of your grade. The tests will be weighted as follows:

Exam	Option A	Option B	Option C
Midterm #1	1/3	0	1/3
Midterm #2	1/3	1/3	0
Final Exam	1/3	2/3	2/3

The option that gives you the highest final score will be automatically selected for you (you don't have to declare a preference). The second and third options are intended as a second chance if you needed more time to master the concepts, or had a bad day, or even missed one midterm entirely. The first option is meant to lessen the weight of the final if you perform consistently well over the quarter. The course letter grades will be assigned on a curve based on the distribution of total scores of everyone in the class. There will be no make-up exams for missing midterms or the final exam, and you cannot take an exam outside of scheduled times. All exams and this entire course are subject to the UCSD Policy on Integrity of Scholarship[1], and any violation of this policy will lead to an automatic failing grade (F). In addition, the Council of Deans of Student Affairs will impose a disciplinary penalty.

Exams and Quizzes

The dates of the tests are:

Quiz April 8th

Midterm #1 April 29th

Midterm #2 May 20th

Final Exam June 12th at 8:00 am.

The quiz is early and covers material from 120a and 120b. Everything that we are going to study this quarter builds on and generalizes the OLS model, so it is important that you review it. In particular, I'm going to ask you questions about chapters 1 – 7 of the textbook on the quiz.

The midterms will not be cumulative. The material that we're covering breaks into nice, somewhat independent sections. But I want you to review each test when you get it back and want you to make sure that you understand where you made errors. So I will ask one question on each midterm that is related to a question on the previous midterm that the class struggled with. I will announce which question this is when I hand back the exams so that it's not a surprise.

Midterm #1 will cover material from chapters 9, 10, 12, and 13 of the textbook.

[1] Available at http://www-senate.ucsd.edu/manual/Appendices/app2.htm

Midterm #2 will cover material from chapters 8 and 11 of the textbook (and their appendices).

The final is cumulative and will cover all of the above material, plus parts of chapters 14 and 15 (14.1 – 14.4 and 15.1 – 15.5) of the textbook.

If you require a regrade, you must contact the appropriate TA within a week of the day we return the exams in class. If you pick up your exam after the week is over, you are not eligible for a regrade. If you use pencil on your exam, this rule doesn't apply – you must ask for the regrade immediately on collecting your exam.

Homework

The homework will collectively count for 10% of your grade. I'm going to assign homework assignments out of the book and give you a few Stata assignments as well. The homework is supposed to help you learn the material and study for exams, so it's going to be due on the day of the test, except for the last assignment which is due on the last Wednesday of class. Each homework assignment is worth 2 points and the grading is as follows: 2 points if all of the problems have been attempted AND if all work has been shown, 1 point if only some of the problems have been attempted OR if work has not been shown OR if the work is of very poor quality, and 0 points if the assignment is not handed in or is late. Note that your homework grade does not depend on whether you get the correct answer, but rather on whether you have made a good faith effort to complete the assignment.

The homework assignments are due on April 8th, April 29th, May 20th, and June 3rd. I will hand out the next homework assignment the Friday after each test.

Discussion Session and Extra Credit

One of the TAs will lead discussion session every Tuesday at 6pm in room 119 at Center Hall. You can get extra credit if you attend and do the reading assigned from the textbook for that week. To get extra credit at the discussion sessions, you need to do the reading in advance and prepare two questions on that reading. You can get up to two points each week. The questions must be written down beforehand and you must hand them in to the TA before the discussion session starts. If you arrive late, hand in your questions before sitting down.

- If you attend a discussion session and bring two specific questions for that week's reading, you'll get two extra credit points that week. Each question is worth one point, so bringing only one question will still get you one point of extra credit.

- If you skip the discussion session, or attend and bring vague questions that are not specific to the reading, you'll get no extra credit. An example of a vague question is, "when would a person use the 'logit' model?" because you can ask the same question about any chapter in the book.

- Obviously, you do not get credit for copying a question out of the textbook.

These extra credit points will be added to your score on the next exam. For example, if your score on the exam is 75 and you have 5 extra credit points, you will get an 80 on the exam. The questions must

be about the reading, not about the homework. Of course, the TA leading the discussion session will be happy to talk about the homework and about any upcoming exams as well.

Plan and Deadlines

This is an outline of what we're going to cover this quarter. I'll give more detail about each section as we get to it.

Review

Discussion session on April 7th covering chapters 1-7

Homework #1 and quiz on April 8th

Panel Data and Instrumental Variables

Discussion session on April 14th covering chapter 9 and sections 13.1 and 13.2

Discussion session on April 21st covering chapter 10 and section 13.3

Discussion session on April 28th covering chapter 12 and sections 13.5 – 13.7

Homework #2 and Midterm #1 on April 29th

Nonlinear Regression

Discussion session on May 5th covering chapter 8 and appendix 8.1

Discussion session on May 12th covering sections 11.1, 11.2, and 11.4 and appendix 11.3

Discussion session on May 19th covering section 11.3 and appendix 11.2

Homework #3 and Midterm #2 on May 20th

Time Series

Discussion Session on May 26th covering Sections 14.1 – 14.4

Discussion Session on June 2nd covering 15.1 – 15.5

Homework #4 due on June 3rd

Final Exam

Final Exam at 8 am on June 12th.