

Econ 120C: Econometrics

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Goals

Econ 120C is a sequel to Econ 120A and Econ 120B. The objective of the course is to provide you with knowledge of econometrics in theory and applications. By the end of the course, you should be skilled users of basic econometric methods and critical interpreters of empirical studies. In other words, you should have acquired a variety of applied skills that are not only useful for doing economic research (e.g. a senior essay), but also bring rewards in the labor market.

This course requires a quarter-long commitment. You should spend at least 5 hours per week on this course. Econometrics is best learned by doing, and I will require you to do a fair amount of hands-on work. Successful completion of prior courses in statistics/econometrics, preferably Econ 120A and Econ 120B, is required. The mathematical prerequisites for Economics 120C are: Mathematics 10ABC or 20ABC, or their equivalence. Prior experience with computers or statistical software such as Eviews will be very helpful, though I will go over the fundamentals.

Throughout the course, you will be asked to use the econometric software *EViews* for numerous computer assignments. You can use it in the econ PC lab. If you want to buy a copy, you can find the student version, which is about \$40, at the following address <http://www.eviews.com/eviews3/eviews31s/evstud31.html>.

If you coordinate and buy ten or more copies, you can get 20% discount from the company.

Participation in this course implies the student acknowledges and agrees with all policies and notifications stated in the syllabus and announced on the course web site.

Web Page

http://www.econ.ucsd.edu/~yisun/econ120c_2004w/

It is your responsibility to access the course web site regularly in order to keep abreast of changes. If you have any question regarding the grading policy, exam formats or any other issues, read the course web page first. Chances are that you can find the answer there. If you can't, email me or the TA's.

Textbooks

Required:

The required text for this class is *Introduction to Econometrics*, James Stock and Mark Watson (Addison Wesley 2002). I have asked that copies of the book be placed on reserve at SSH.

Recommended:

Introductory Econometrics with Applications, Fifth Edition (2002), by Ramu Ramanathan. This book has been used on Econ 120B and this course in the past. I have asked that copies of the book be placed on reserve at SSH.

Alternative Econometrics Text (for your reference):

Introductory Econometrics, Jeffrey M. Wooldridge (Southwestern: 2002). This is another widely used textbook. This book is more difficult than the one by Stock and Watson, and is recommended for students who are not afraid of challenges.

Problem Sets

There will be four assignments, each of which will carry a weight of 5% towards the final grade. The assignments will involve both theoretical and empirical work.

Group study and free discussion are encouraged. But you should submit your own answers. If any part of your answers is photocopied or identical to others, you will get zero for the whole problem set. You do not need to turn in the data sheet and all Eviews outputs. Problem set answers are to be turned in on time to TAs. Do not email assignments. Late solution will not be accepted! If you have a good excuse, email to the TA who is assigned to grade the particular problem set.

If you have any question on the problem sets, please ask me or TA's during the office hours. I prefer to talk to you in person. Email is not a very efficient way to ask econometric questions. However, if all you need is some clarification, feel free to drop us a line. The TA's or I will bring your problem sets to class. If you could not pick up your problem set in class, you can pick it up in our offices.

Examinations

There will be two mid-term exams, each carrying a weight of 15%. The cumulative final exam will have a 50% weight. All exams will be closed book, but you can bring ONE page (one-sided, no larger than 8.5in by 11in) of note. It must be hand-written; photo reducing and pasting is not permitted. Sometimes students ask whether they can bring two pages of notes for the final exam. The answer is no. Bring a calculator (just a simple one will do, no need for scientific or business calculator). You do not need a blue book.

There will be no make-up exams. If for some reason you miss an exam, then the next exam will carry its weight but 10% of the score will be deducted as penalty. If at all possible, the reason must be cleared with me in advance. The penalty applies to almost all cases. The only exception is medical absence, in which case a doctor's certificate is required. Please hand in the doctor's certificate in class or stop by my office.

Grading

All grading problems must be rectified within a week from the time an exam or assignment is returned. Re-grading of exams may not be allowed if they were written in pencil. If you write in pencil, however, you can pick up the exam from my office, check the grading immediately, and take care of complaints before leaving the office. To be fair, re-grading is possible only if there is an obvious mistake in the grading (for example, if the points were added up incorrectly or if a portion of your midterm was not graded). Otherwise, you have almost no chance of receiving extra credit for your responses. If you request a re-grading, we reserve the right to re-grade the whole assignment or exam and adjust your score either up or down.

The course grade will be assigned as follows. First, if the mean score of an exam (including the two mid-terms and the final) is below 75 points, points will be added to all scores to bring the mean score to 75 points. Second, a weighted average of numerical scores will be obtained. Suppose your scores on the PS are 90, 90, 90 and 90. Your midterms and final exam scores are 85, 80 and 85 (after possible adjustment), respectively. Then the weighted average is $90*5\%+90*5\%+90*5\%+90*5\%+85*15\%+80*15\%+85*50\%=85.25=85$ (the integer closest to

85.25). The weights on the problem sets, midterm and final exams cannot be changed. Finally, letter grades will be assigned using the following scale:

≥ 95 A+	[80,85) B+	[65, 70) C+	[50 55) D
[90,95) A	[75,80) B	[60, 65) C	< 50 F
[85,90) A-	[70,75) B-	[55, 60) C-	

Note that the scale is exact. So if your score is 84.45, you will get a B+. In this case, students may ask whether they can get an A- as the score is so close to 85, the cut off point. The answer is no, because to do so will push the cutoff point to 84, which can be pushed further down. Sometimes students who are disappointed with their final grades ask whether they can do additional work to increase their grades. The answer is no, because to do so would be completely unfair to other students in the class.

I will not assign letter grades on the two midterms. However, you can refer to the above table to see where you stand.

Office Hours and Other Contact

My office hours are 3:30-5:00pm on Thursdays. If you want to stop by my office (Econ 219) at other times, please email me and make an appointment in advance. I check my email frequently.

The TAs' office hours will be announced at the beginning of the class.

Tentative Schedule:

<u>Basic Topics</u>	<u>Class Date</u>	<u>Text Chapters</u>
Introduction: Asymptotics & Eviews	Jan 6,8	Ch 1, 2,3,4,5,6
Regression with Dummy Regressors	Jan 13,15	Ch 6.3
Heteroskedasticity	Jan 15,20	Ch 4.9
Instrumental Variable Regression and 2SLS	Jan 22,27,29	Ch 10
First Midterm	Feb 3	
Experiments and Quasi-Experiments	Feb 5,10	Ch 11
Binary Dependent Variable Regression: Introduction	Feb 10,12	Ch 9
Binary Dependent Variable Regression: MLE	Feb 17	Ch 9
Binary Dependent Variable Regression: Application	Feb 19	Ch 9
Second Midterm	Feb 24	
Time Series Model: Introduction	Feb 26	Ch 12
Time Series Model: Stationarity	March 2	Ch 12
Time Series Model: Forecasting	March 4	Ch 12
Regression with Heteroscedastic and Auto-Correlated Errors (HAC)	March 9	Ch 12
Overview	March 11	
Final Exam		