Syllabus

Econ 312: Introduction to Econometrics
TTH 2:10PM-4:00, HSS 147
TH:6:10PM-10:00, HSS380
Spring 2010

Instructor: Sang-Yeob Lee
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Course web: http://bss.sfsu.edu/sylee/econ312.htm
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Office: HSS 144
Office Hours: TTH 1:00-2:00 PM or by appointment
(Supplementary office hours will be announced in class)

Course Objectives:
This course provides an introduction to basic econometric methodology with the purpose of statistically testing relationships from economic theories and forecasting future values of economic variables. In the process, data analysis methods through the use of STATA (econometric software) will also be introduced. Some of the economic questions we will be trying to examine using econometric techniques are: Is there a positive return to education? Does reducing class size improve elementary school education? Is there any racial discrimination in the market for home loan? How much do cigarette taxes reduce smoking? What will be the rate of inflation be next year? Does current consumption depend on current, or lifetime income?

Prerequisites:
Math 226 (Calculus I) and Econ 311. You must be willing to come to class regularly as this will affect your grade in the course.

Textbook:
The text for this course is *Statistics for Business and Economics*, 6th edition, by Paul Newbold, William L.Carlson, and Betty Thorne. An optional book which provides a complementary treatment that some students might find helpful, is Stock and Watson, *Introduction to Econometrics*, Pearson.

Computer Software:
Students will be required to use and become familiar with **STATA** (statistical/econometric package) during the course. You may purchase STATA at an academic price.

Grading:
Your grade for this course will be based on six problem sets, two midterm exams, and a final exam. The fraction of the points allocated to each is shown below. Thus, your score on the problem set will be calculated from your five best problem sets. An alternative grade breakdown is provided for students who do poorly on the midterms but who do better on the final. Your score will be calculated using both point allocations, and the highest score will be chosen automatically.

	Grade Breakdown	Alternative Grade Breakdown
Best 5 Problem sets (6% each)	30%	30%
2 Midterms (20% each)	40%	30%
Final Exam	30%	40%
Extra Credit (5%) TBA		

As is common, your final letter grades will be assigned based on a relative scale.

Making up Policy:
No make up exam will be provided for the midterm. Students missing the midterm for unavoidable and formally verifiable reasons will be graded on the alternative grade breakdown (out of a total of 85 points). Students missing the final for unavoidable and formally verifiable reasons will be given a make up exam. Exams missed for avoidable or for unverifiable reasons will be assigned a grade of 0.

Problem Sets:
Problem sets will be handed out in class roughly a week before they are due. The due dates are subject to modification depending on the progress of the course. Problem sets are due at the beginning of the class. No credit will given for the late problem sets. As indicated above, your lowest scored problem set will be dropped.

You are encouraged to work with your classmates on the problem sets. You must hand in your own set of answers with explanations in your own words. If a problem requires calculations or math, you must show your work. Identical copies of joint work are not acceptable.
Problem sets will be posted on the course web page after they are handed out in class. Problem set answers will be posted on the course web page. If you miss class, please visit the web page for any announcement you may have missed.

Academic Misconduct:
Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University's Code of Student Conduct is never considered an "excuse" for academic misconduct, so I recommend that you review the Code of Student Conduct and, specifically, the sections dealing with plagiarism.

If I determine that you have violated the University's Code of Student Conduct (i.e., committed academic misconduct), the sanction for the misconduct could be a failing grade in this course. If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

STUDENTS WITH DISABILITIES
Students with disabilities that have been certified by the Disability Programs and Resource Center Services (338-2472) will be appropriately accommodated, and should inform the instructor as soon as possible of their needs.

Class Schedule

Note that dates (other than Exams) are tentative and may change, depending on the progress of the course.

Part 1: Statistics Review

Week 1 (26 January- 28 January)
Introduction/Course Description
(Review of Probability)
Random Variables and Probability Distributions, Expected Values, Mean, and Variance. (Ch.5. and 6)

Week 2 (2 Feburary-4 February)
Joint and Marginal Distributions, Conditional Distributions, Independence, Covariance, Correlation, The Mean and Variance of Sums of Random Variables.
(Ch.5 and 6)
Normal, Chi-squared, Student t, and F-distributions, Random Sampling and the Distribution of the Sample Average, The Central Limit Theorem (Ch.7)

Week 3 (9 Feburary-11 February)
(Review of Statistics)
Estimation of Population Mean, Hypothesis Tests Concerning the Population Mean, Confidence intervals for the Population Mean (Ch.8 and 10)
Scatter plot, the Sample Covariance, and the Sample Correlation (STATA)
Problem Set 1 Due

Part 2: Basic Econometrics (Linear Regression)

Week 4 (16 Feburary-18 February)
The Linear Regression Model, Estimate the Coefficient of Linear Regression Model (Ch.12)

Week 5 (23 Feburary-25 February)
Measure of Fit R^2, The Least square Assumptions, Sampling Distribution of the OLS Estimator (Ch. 12)

Week 6 (2 March-4 March)
Hypothesis Testing and Confidence Interval, Prediction (Ch.12)
Problem Set 2 Due

Week 7 (9 March-11 March)
Catch up or Review
Midterm 1

Week 8 (16 March-18 March)
Omitted Variable Bias, The Multiple Regression Model (Ch.13)

Week 9 (23 March-25 March)
25 March (no class, Furlough Day)
The OLS estimator in Multiple Regression, Measures of Fit in Multiple Regression (Ch.13)

Week 10 (30 March-1 April)
Spring Break

Week 11 (6 April- 8 April)
6 April (no class, Furlough Day)
The Least Assumptions, The Distribution of the OLS estimator in Multiple Regression
The hypothesis Tests and Confidence Interval (Ch.13)
Problem Set 3 Due

Week 12 (13 April- 15 April)
Nonlinear Regression Models, Dummy Variables (Ch.13)
Problem Set 4 Due

Week 13 (20 April- 22 April)
Catch up or Review
Midterm 2

Week 14 (27 April- 29 April)
Multicollinearity, Heteroskedasticity (Ch.14)
Problem Set 5 Due

Week 15 (4 May-6 May)
4 May (no class, Furlough Day)
Serial Correlation, Time Series Data (Ch.14)
Problem Set 6 Due

Week 16 (11 May-13 May)
Catch up or Review

Final Exam
Econ 312.01 : Tuesday, May 18 (2:10-4:00 PM)
Econ 312.02 : Thursday, May 20 (6:10-8:00 PM)