Eco 601/BA330: Econometrics Syllabus
Spring 2012

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Office Hours: 3:15-4:15 MTWF. No office hour on Wednesday.
Text: James Stock and Mark Watson, Introduction to Econometrics, 3rd Edition, Addison Wesley, 2011.

ECO 601 (Econometrics) Mission Statement

The mission of the capstone course in econometrics is to integrate students' knowledge of economics with statistics in a manner that enables students to formulate testable hypotheses about economics. Students should be able to come up with quantitative conclusions of interest that they can communicate to professionals in the field.

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ECO 601 Outcomes

Students will understand how to formulate econometric models to assess a hypothesis of interest. They will understand single and multiple regression equation estimation techniques. This involves variable selection, functional form, assumptions that must hold for valid results, and technique to deal with data problems. They will be able to interpret the estimates and their economic and statistical significance, and be able to create clear written reports. As an example, a student could be asked by the department of education of the state of Pennsylvania whether and how much of an effect there would be if the average student teacher ratio in Pennsylvania schools were reduced by 2 students. Using data and economic analysis, the student should be able to answer this question as a consequence of taking this course.

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ECO 601 Assessment

Tests and homework are used, as well as a class project. As a part of grade determination for the course, student work will be evaluated by fellow students and by professionals who are alumni of the college.

Tentative Course Outline:

Chapter	Topics	Assessment Outcomes - Demonstrate in tests, homework and presentations, the following:
1	Econometric Questions, Causation, Data Types	Understand the difficulty of determining causation in non-experimental settings. Understand the role of random sampling in defining causation.
Collect data from public sources and enter in software. Begin process of summarizing and modeling.		
2 (emphasize 2.3) and 3	Review of probability and Statistics	Understand conditional expectation and statistical tests
4	Linear Regression Model, Estimating coefficients, Assumptions	Formulate econometric models that can test for a causal relationship, Understand the problems that arise when statistical assumptions are violated.
Exam 1		
5 (skip 5.5)	Hypothesis Tests and Confidence Intervals for Regression Coefficients, Binary Variables, heteroskedasticity	Ability to deal with different types of independent variables and determine economic and statistical significance.
6	Multiple Regression, Assumptions, Omitted Variable Bias, Adjusted R^2 , Multicollinearity, Dummy Variable Trap	Ability to deal with multiple sources of causation and the problems that it creates
7	Hypothesis Tests and Confidence Intervals, Control Variables	Test statistical and economic significance
8	Nonlinear Regression Functions, Interaction Models	Ability to deal with non-linear causal relationships
Exam 2		
9	Internal and External Validity	Critically evaluate whether the model actually demonstrates the hypothesis and whether the results are valid beyond the scope of the study.
Analyze results from data. Critically evaluate results and compare to prior studies. Draw conclusions from research and suggest further avenues of investigation.		
10	Panel Data, Fixed Effects Regression	Understand how combining time series with cross sectional data can help sort out causal effects
11	Probit and Logit Regression	Understand models whose dependent variable is binary.
12	Instrumental Variable Estimators	Ability to deal with independent variables that are correlated with the error term
Present results at URAC and to professionals		
Final Exam		

Grading Policies
Final Grades are a weighted average of exams and other work as detailed below. The components of the final grade are weighted as follows:

Three Exams	75%
Group Project, Homework, Quizzes, Participation, Demeanor*	25%

*Text messaging and constant chattering during class is both rude and unacceptable. I will **lower your grade** if you engage in this behavior.

Assignment of final grades: Based on the average of the above components, grades will be assigned according to the following schedule.

Final Average	Final Grade
93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
60-69	D
59 and below	F

Other Course Policies:

1) Academic integrity: Except for assignments that specifically call for collaboration with classmates, I expect all of your work to be the exclusive product of your own efforts. You may consult with me regarding homework or exams, but you may not collaborate with anyone else. Should you submit any work that is not your own, I will give you a grade of F for the course and report your behavior to the Vice President for Academic Affairs.
2) Acceptable excuses for missing exams are limited to the following:
   Serious medical condition verified by a doctor's letter.
   Verified, serious family emergency.
3) I will keep all exams. You may see your exams during class on the day I return them. If you are not in attendance on that day, you cannot see your exam.
4) Assignments:
   1) Individual parts must be in order and clearly identified. The entire assignment must be stapled, not paper clipped or crimped.
   2) Must be your own work. See the policy on academic integrity below.
   3) Must be neat and legible.
   4) Must be submitted punctually.