# Econ 220B Course Syllabus, Winter 2015 University of California, San Diego

#### Course web page:

## http://dss.ucsd.edu/~jhamilto/Econ220B.html

## **Instructor:**

- James Hamilton (jhamilton@ucsd.edu)
- Lectures: M-W 8:00-9:20 a.m. in Econ 300
- Office hours: Tu 2-3 in Econ 307

## **Teaching assistant:**

- Shihan Xie (s7xie@ucsd.edu)
- Review session: Fridays 8:00-8:50 a.m. in Econ 300-- note Friday Jan 16 8:00-9:20 will be used for make-up lecture
- Office hours: Th 2-3 in Sequoyah 233

#### Books available at UCSD bookstore:

Fumio Hayashi, Econometrics, <u>Princeton University Press</u>, 2001. This is the main text for the course. <u>Click here</u> for the home page for Hayashi's text.

James D. Hamilton, Time Series Analysis, <u>Princeton University Press</u>, 1994. This book is used as an optional supplementary text for the course and is also used in other courses at UCSD.

## Journal articles:

Arnold Zellner, "Bayesian and non-Bayesian analysis of the regression model with multivariate Student-t error terms", <u>Journal of the American Statistical Association</u>, 71, June 1976, pp. 400-405.

M.L. King, "Robust tests for spherical symmetry and their application to least squares regression", <u>Annals of Statistics</u>1980, pp. 1265-1271.

N. Gregory Mankiw, David Romer, and David Weil, "A Contribution to the Empirics of Economic Growth," <u>Quarterly Journal of Economics</u>,107, May 1992, pp. 407-437.

Howard J. Wall, "Using the Gravity Model to Estimate the Costs of Protection," <u>Federal</u> <u>Reserve Bank of St. Louis Review</u>, Jan/Feb 1999, pp. 33-40.

Stephen V. Cameron and James J. Heckman, "The Nonequivalence of High School Equivalents," Journal of Labor Economics, Vol. 11, part 1, Jan 1993, pp. 1-47.

Joshua D. Angrist, "Lifetime Earnings and the Vietnam Era Draft Lottery: Evidence from Social Security Administrative Records," <u>American Economic Review</u>, 80, June 1990, pp. 313-336; <u>Errata</u>, December 1990, pp. 1284-1286.

James D. Hamilton, "The Supply and Demand for Federal Reserve Deposits," Carnegie-

Rochester Conference Series on Public Policy, 49, December 1998, pp. 1-44.

Joshua D. Angrist and Victor Lavy, "Using Maimonides' Rule to Estimate the Effect of Class Size on Scholastic Achievement," <u>Quarterly Journal of Economics</u>, 114, May 1999, pp. 533-575.

Joshua D. Angrist and Jorn-Steffen Pischke, "The Credibility Revolution in Empirical Economics: How Better Research Design is Taking the Con out of Econometrics," <u>Journal of Economic Perspectives</u>, 24, Spring 2010, pp. 3-30.

Douglas Staiger and James H. Stock, "Instrumental Variables Regression with Weak Instruments," <u>Econometrica</u> 65, May 1997, pp. 557-586.

The articles above can be downloaded online. The syllabus you are now reading can also be viewed as an HTML document at <u>http://dss.ucsd.edu/~jhamilto/Econ220B\_syllabus.html</u>. If you are viewing this as an HTML document, clicking on any active link above will take you immediately to the source where the article can be viewed online or downloaded.

#### Grades for Econ 220B will be determined as follows:

- 20%: Problem Sets. You may work together on these, but must hand in your own write-up of the answers. These are used as a study guide and supplement to the reading and lectures.
- 30%: Midterm Exam. This will be on Wednesday, Feb 4. No books or notes allowed.
- 50%: Final Exam. This will be on Wednesday, March 18, from 8:00 to 11:00. No books or notes allowed.

## **Course Outline**

Mon Jan 5	Review of linear algebra (Hamilton, Section A.4, pp. 721-739)
Wed Jan 7	The algebra of least squares (Hayashi, Section 1.2)
Mon Jan 12	The classical regression model (Hayashi, Sections 1.1 and 1.3; Hamilton, Section 8.1)
Wed Jan 14	Hypothesis testing (Hayashi, Sections 1.4, 1.5, and 1.7; references: Zellner, 1976 and King, 1980)
Fri Jan 16	Generalized least squares (Hayashi, Section 1.6) (note this is a special Friday section held in Room 300)
Mon Jan 19	University holiday (no scheduled class)
Wed Jan 21	Asymptotic distribution theory (Hayashi, Sections 2.1-2.2; Hamilton, Section 7.1)
Mon Jan 26	Large sample properties of OLS (Hayashi, Sections 2.3 and 2.9; Hamilton, Section 8.2)
Wed Jan 28	Hypothesis testing asymptotic results (Hayashi, Sections 2.4-2.6; Hamilton, Section 8.2)
Mon Feb 2	Maximum likelihood estimation (Hayashi, Section 1.5; Hamilton, Section 5.7)
Wed Feb 4	Midterm exam
Mon Feb 9	Heteroskedasticity and serial correlation (Hayashi, Sections 2.7, 2.8, 2.10, 2.11; Hamilton, Section 8.3)
Wed Feb 11	Simultaneous equations bias (Hayashi, Sections 3.1-3.2; Hamilton, Section 9.1)
Mon Feb 16	University holiday (no scheduled class)
Wed Feb 18	Applied econometrics (Mankiw, Romer, and Weil; Wall)
Mon Feb 23	Applied econometrics (Cameron and Heckman; Angrist; Hamilton 1998; Angrist and Pischke)

Wed Feb 25 General formulation (Hayashi, Section 3.3; Hamilton, Section 9.2)
Mon Mar 2 Weak instruments (Staiger and Stock)
Wed Mar 4 Generalized method of moments (Hayashi, Sections 3.4-3.6; Hamilton, Section 14.1)
Mon Mar 9 Uses of GMM (Hayashi, Sections 3.8-3.9; Hamilton, Section 14.2)
Wed Mar 11 GMM and Maximum likelihood estimation (Hamilton, Section 14.4)
Wed Mar 18 Final exam (8-11 a.m.)