

# **Econ 220B Course Syllabus, Winter 2012**

## **University of California, San Diego**

### **Course web page:**

<http://dss.ucsd.edu/~jhamilto/Econ220B.html>

### **Instructor:**

- James Hamilton (jhamilton@ucsd.edu)
- Lectures: Tu-Th 8:00-9:20 a.m. in Econ 300
- Office hours: W 2-3 in Econ 307 (except for Feb 29)

### **Teaching assistant:**

- Jong-Myun Moon
- Review session: Fridays 2-3 in Econ 300
- Office hours: Tuesdays 10-11 in Econ 119

### **Books available at UCSD bookstore:**

Fumio Hayashi, Econometrics, [Princeton University Press](#), 2001. This is the main text for the course. [Click here](#) for the home page for Hayashi's text.

James D. Hamilton, Time Series Analysis, [Princeton University Press](#), 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", [Journal of the American Statistical Association](#), 71, June 1976, pp. 400-405.

M.L. King, "Robust tests for spherical symmetry and their application to least squares regression", [Annals of Statistics](#) 1980, pp. 1265-1271.

N. Gregory Mankiw, David Romer, and David Weil, "A Contribution to the Empirics of Economic Growth", [Quarterly Journal of Economics](#), 107, May 1992, pp. 407-437.

Howard J. Wall, "Using the Gravity Model to Estimate the Costs of Protection," [Federal Reserve Bank of St. Louis Review](#), 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 and Jorn-Steffen Pischke, "The Credibility Revolution in Empirical Economics: How Better Research Design is Taking the Con out of Econometrics," [Journal of Economic Perspectives](#), 24, Spring 2010, pp. 3-30.

Douglas Staiger and James H. Stock, "Instrumental Variables Regression with Weak Instruments," [Econometrica](#) 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 [http://dss.ucsd.edu/~jhamilto/Econ220B\\_syllabus.html](http://dss.ucsd.edu/~jhamilto/Econ220B_syllabus.html). 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 Thursday, Feb 9. No books or notes allowed.
- 50%: Final Exam. This will be on Thursday, March 22, from 8:00 to 11:00. No books or notes allowed.

### **Course Outline**

Tues Jan 10	Review of linear algebra (Hamilton, Section A.4, pp. 721-739)
Thurs Jan 12	The algebra of least squares (Hayashi, Section 1.2)
Tues Jan 17	The classical regression model (Hayashi, Sections 1.1 and 1.3; Hamilton, Section 8.1)
Thurs Jan 19	Hypothesis testing (Hayashi, Sections 1.4, 1.5, and 1.7; references: Zellner, 1976 and King, 1980)
Tues Jan 24	Generalized least squares (Hayashi, Section 1.6)
Thurs Jan 26	Asymptotic distribution theory (Hayashi, Sections 2.1-2.2; Hamilton, Section 7.1)
Tues Jan 31	Large sample properties of OLS (Hayashi, Sections 2.3 and 2.9; Hamilton, Section 8.2)
Thurs Feb 2	Hypothesis testing-- asymptotic results (Hayashi, Sections 2.4-2.6; Hamilton, Section 8.2)
Tues Feb 7	Maximum likelihood estimation (Hayashi, Section 1.5; Hamilton, Section 5.7)
Thurs Feb 9	<b>Midterm exam</b>
Tues Feb 14	Heteroskedasticity and serial correlation (Hayashi, Sections 2.7, 2.8, 2.10, 2.11; Hamilton, Section 8.3)
Thurs Feb 16	Simultaneous equations bias (Hayashi, Sections 3.1-3.2; Hamilton, Section 9.1)
Tues Feb 21	Applied econometrics (Mankiw, Romer, and Weil; Wall)
Thurs Feb 23	Applied econometrics (Cameron and Heckman; Angrist and Pischke)

Tues Feb 28	General formulation (Hayashi, Section 3.3; Hamilton, Section 9.2)
Thurs Mar 1	<b>No scheduled class</b>
Tues Mar 6	Weak instruments (Staiger and Stock)
Thurs Mar 8	Generalized method of moments (Hayashi, Sections 3.4-3.6; Hamilton, Section 14.1)
Tues Mar 13	Uses of GMM (Hayashi, Sections 3.8-3.9; Hamilton, Section 14.2)
Thurs Mar 15	GMM and Maximum likelihood estimation (Hamilton, Section 14.4)
Thurs Mar 22	<b>Final exam (8-11 a.m.)</b>