

**Econ 623 - Econometrics I
Part I**

Instructor:

John C. Chao	Office:	Tydings Hall, Room 3141
	Office Hours:	Wed. 10:00am-12:00 noon (and by appointment)
	Telephone:	(301) 405-1579
	E-mail:	chao@econ.umd.edu

TA:

Pablo Salinas Macario	Office:	Tydings Hall, Room 3115A
	Office Hours:	by appointment ¹
	Telephone:	(301) 405-3534
	E-mail:	Salinas@econ.umd.edu

Discussion Section:

Thurs. 5:30 - 7:15 pm, Tydings Hall, Room 1108

Lecture:

Tues./ Thurs. 12:30 - 1:45 pm, Tydings Hall Room 2110

Prerequisite:

Students are presumed to have had at least a one-semester course in mathematical statistics at the level of R.V. Hogg, A. Craig, and J.W. McKean, *Introduction to Mathematical Statistics* (6th ed.). Linear algebra and elementary calculus will be used freely. Requisite linear algebra will be reviewed in section.

¹Pablo will be available on most days, but please give him 24-hour notice.

Academic Integrity:

Academic integrity is a foundation for learning. The University has approved a Code of Academic Integrity available on the web at <http://www.studenthonorcouncil.umd.edu/code.html>. The Code prohibits students from cheating on exams, plagiarizing, submitting the same paper for credit in two courses without authorization, buying papers, submitting fraudulent documents, and forging signatures.

Students with Disability

A student, who has a documented disability and who wishes to receive accommodation or services from the University's Disabilities Support Service (DSS), must first complete a registration process which involves meeting with one of the senior staff members at DSS and providing the appropriate documentation. An appointment with DSS can be scheduled by calling (301) 314-7682.

Principle Text:

W. H. Greene, *Econometric Analysis*, 6th Edition. Prentice Hall, 2007. (G)
(ISBN-10: 0135132452).

Other Econometric Texts:

The following is a nonexhaustive list of other econometrics textbooks.

T. Amemiya, *Advanced Econometrics*. Harvard University Press, 1985.

E.R. Berndt, *The Practice of Econometrics: Classic and Contemporary*. Addison-Wesley, 1991. (B)

R. J. Bowden and D. Turkington, *Instrumental Variables*. Cambridge University Press, 1984.

G. C. Chow, *Econometrics*. McGraw Hill, 1983.

R. Davidson and J. MacKinnon, *Estimation and Inference in Econometrics*. Oxford University Press, 1993. (DM)

A. S. Goldberger, *A Course in Econometrics*. Harvard University Press, 1991.

E. Greenberg and C. E. Webster, *Advanced Econometrics: A Bridge to the Literature*. Wiley, 1983.

Hayashi, F. (2000). *Econometrics*. Princeton: Princeton University Press.

D. F. Hendry and K. F. Wallis, *Econometrics and Quantitative Economics*. Blackwell, 1986.

- J. Johnston and J. DiNardo, *Econometric Methods*, 4th Edition. McGraw Hill, 1997.
(JD)
- G. G. Judge, et al., *The Theory and Practice of Econometrics*, 2nd Edition. Wiley, 1985.
(JGHLL)
- J. Kmenta, *Elements of Econometrics*, 2nd Edition. MacMillan, 1986.
- G. Maddala, *Econometrics*. McGraw Hill, 1977.
- E. Malinvaud, *Statistical Methods of Econometrics*, 3rd Edition. North-Holland, 1980.
- P. A. Ruud, *An Introduction to Classical Econometric Theory*, Oxford University Press, 2001. (PR)
- J. D. Sargan, *Lectures on Advanced Econometric Theory*. Basil Blackwell, 1988.
- A. Spanos, *Statistical Foundation of Econometric Modeling*. Cambridge University Press, 1986.
- P. Schmidt, *Econometrics*. Marcel Dekker, 1976. (S)
- H. White, *Asymptotic Theory for Econometrician*, Revised Edition. Academic Press, 2000. (W)
- J. Wooldridge, *Econometric Analysis of Cross Section and Panel Data*. MIT Press, 2002.
- H. Theil, *Principles of Econometrics*. Wiley, 1971.

Statistics Texts:

These are especially useful for students who desire a more complete treatment of a topic in statistical theory or who plan further work in econometrics.

- D. Cox and D. Hinkley, *Theoretical Statistics*. Chapman and Hall, 1974.
- E. L. Lehmann and G. Casella, *Theory of Point Estimation*, 2nd Edition Springer, 1983/1998.
- E. L. Lehmann and J.P. Romano, *Testing Statistical Hypotheses*, 3rd Edition. Springer, 2005.
- C. R. Rao, *Linear Statistical Inference and Its Application*. Wiley, 1973.
- R. J. Serfling, *Approximation Theorems of Mathematical Statistics*. Wiley, 1980.
- S. D. Silvey, *Statistical Inference*. Chapman and Hall, 1975.

Handbooks:

Z. Griliches and M. Intriligator, eds., *Handbook of Econometrics*, Vol. 1. North-Holland, 1983.

Z. Griliches and M. Intriligator, eds., *Handbook of Econometrics*, Vol. 2. North-Holland, 1984.

Z. Griliches and M. Intriligator, eds., *Handbook of Econometrics*, Vol. 3. North-Holland, 1986.

R. Engle and D. McFadden, eds., *Handbook of Econometrics*, Vol 4. Elsevier, 1994.

J. Heckman and E. Leamer, eds., *Handbook of Econometrics*, Vol 5, Elsevier, 2001.

Exercise Collections:

P. C. B. Phillips and M. R. Wickens, *Exercises in Econometrics*, Vol. I & II. Allen/Ballinger, 1978.

K. Abadir and J. Magnus, *Econometric Exercises Vol 1: Matrix Algebra*. Cambridge University Press, 2005.

Course Outline and Reading List
(R - required reading; S - suggested reading)

0. Linear Algebra Review (covered in Section)

- (R) G: Appendix A
- (S) JD: Appendix A

1. Linear Regression - Basic Results

- Model Specification and Assumptions
- Properties of Ordinary Least Squares (OLS) Estimators
- Gauss-Markov Theorem
- Partitioned Regression
- Goodness of Fit and ANOVA
- Normal Model and Maximum Likelihood
- Stochastic Regressors

- (R) G: Chapters 2-3 and Chapter 4, Sec. 4.1-4.7
- (S) PR: Chapter 1, Sec. 2.1-2.4, 2.6, Chapter 3, and Chapters 6-10
Hogg and Craig: pages 405-419

2. Linear Regression - Hypothesis Testing

- Tests of Linear Restrictions and Restricted Least Squares
- Tests of Structural Change

- (R) G: Chapter 5; Chapter 6, Sec. 6.1-6.4; and Chapter 7, Sec. 7.3-7.4
- (S) PR: Chapter 4 and Chapter 11

3. Asymptotics for the Linear Regression Model

- Review of Some Preliminary Asymptotic Results
- Asymptotic Theory for the Linear Regression Model
- Tests of Nonlinear Restrictions
- Asymptotic Efficiency and Maximum Likelihood Estimation

- (R) G: Appendix D; Chapter 4, Sec. 4.9; Chapter 5, Sec 5.3-5.4
W: Chapters 2, 3.1, 4.1, and 5.1
- (S) Serfling: Chapter 1

Grading Policy for Part I for Econ 623:

- Half of your final grade in Econ 623 will be based on your performance in Part I of this course. There are two requirements for Part I, and they are weighted as follows:

Homework	15%
Midterm Exam	35%

(Note that the weights are given as a percentage of your final course grade, so that the total weight for Part I adds up to 50% and not 100%.)

- Homework problems will consist of theoretical problems and of empirical (computer) problems. Homework problems are handed out on Tuesdays and are due two Mondays after they are handed out. No credit will be given for homework that is late. (Problem sets should be handed in to the TA in person if at all possible. Problem sets that are slipped under the door or placed in mail boxes are not considered handed in until they are found!) The computer may be down for certain periods. Therefore, it is essential that computer assignments are started early. No extension of the deadlines for the assignments will be granted, unless the computer was down for at least 100 hours in the two-week assignment period.
- No make-up midterm exam will be given except in cases of illness (supported by documentation of the illness, signed by a health care professional), religious observance, participation in University activities at the request of the University authorities, or compelling circumstances beyond the student's control. If possible, the student should inform me (or the Economics Department) of his or her situation before the exam.

Midterm Exam

The midterm exam is scheduled for Thursday, October 20, during the discussion section.

Cancellation of Classes Due to an Emergency:

In case classes have to be cancelled due to inclement weather or other emergencies, they will be rescheduled at a time that is mutually convenient for the instructor and the students.