University of Wyoming
College of Business
Department of Economics and Finance

ECON 5350
Advanced Econometric Theory I
TTh 1:15-2:30
Ross Hall 14
Fall 2009

Instructor: Dr. David Aadland
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Office Hours: Tuesday & Thursday, 11:30 a.m. – 1:00 p.m. or by appointment
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Class Homepage: www.uwyo.edu/aadland/classes/econ5350/

Course Description:
The course begins with a review of probability and statistics. I then present the general linear regression models and the finite- and large-sample properties of various estimators. The course will also cover topics such as nonlinear regressions, nonlinear optimization, maximum likelihood estimation, statistical inference and nonspherical disturbances. This course is designed to be taken as a two-semester sequence with ECON 5360.

Course Prerequisites: ECON 5340 or an equivalent course.

Primary Text:
Econometric Analysis by William H. Greene (6^{th} edition)

Supplementary Texts:
An Introduction to the Theory and Practice of Econometrics by George Judge et al.
Basic Econometrics by Damodar Gujarati
Introduction to Mathematical Statistics by Robert Hogg and Allen Craig
Econometric Methods by Jack Johnston and John DiNardo
A Guide to Econometrics by Peter Kennedy

Course Objectives:
The primary objective of this sequence is to offer an advanced introduction to econometric theory and practice. Upon completion of this sequence you should be able to (i) comprehend most of the applied econometrics found in scholarly journals and (ii) initiate applied econometric analysis within your own research program.

Course Requirements:

- Computer Software Package. We will be using GAUSS extensively throughout the course. GAUSS is a matrix-based language that is extremely flexible and allows the user to directly program routines that are often unobserved in "black-box" software packages.

- Examinations. There will be two in-class exams: a midterm and a final.

- Problem Sets. There will be a total of 10 problem sets, which will be made available on our class webpage. The due date will be clearly printed at the top of each assignment. No late assignments will be accepted. Collaborative work is encouraged; however, each student is required to turn in an independently composed set of answers.

Grading:
Examinations and problem sets will be weighted as follows:

10 Problem Sets	(100 pts)	33.3%
Midterm Exam	(100 pts)	33.3%
Final Exam	(100 pts)	33.3%
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	(300 pts)	100%

Attendance Policy: Attendance is voluntary but figures into the grading as follows. The binary variable ATTEND = 1 if you attend each class, ATTEND = 0 otherwise. SCORE is the total points earned on problem sets and exams.

Your final score in the class is then given by …. FINAL SCORE = ATTEND × SCORE.

Academic Dishonesty:
Also known as "cheating," academic dishonesty will not be tolerated in this class. Cases of academic dishonesty will be prosecuted in accordance with UNIREG 802 Rev. 2. Cheating in this course can result in an "F" in the course. In this course, academic dishonesty includes (but is not limited to) unapproved assistance on examinations, copying the homework of others, plagiarism or other use of published materials without complete citations, or fabrication of referenced information.)

Disclaimer:
Subsequent changes may be made to any aspect or detail of this Syllabus if and when necessary. Any changes will be announced in class as soon as practical.

Course Outline (tentative):

Review of Probability and Distribution Theory
Review of Statistical Inference
Chapter 2. The Classical Linear Regression Model
Chapter 3. Least Squares
Chapter 4. Finite-Sample Properties of Least Squares Estimators
Chapter 5. Large-Sample Properties of Least Squares Estimators
Chapter 6. Inference and Prediction

Midterm Exam

Chapter 7. Functional Form and Structural Change
Chapter 8. Specification Analysis and Model Selection
Chapter 9. Nonlinear Regression Models
Chapter 10. Nonspherical Disturbances
Chapter 11. Heteroscedasticity
Chapter 12. Serial Correlation

Final Exam