*Syllabus*      **Agricultural & Resource Economics / Economics 635**      *Spring 2008*
**Econometric Theory I**

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Secretary:   Denise Davis                                          Office:  B-321 Clark Building
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Class Meeting Time and Location: C360 Clark Building from 11:00-12:15 a.m. TR.

Office Hours: 2:00-3:00 p.m. MWF.  The instructor maintains an open door office policy.  However, it is efficient to make an appointment.  I am also willing to meet informally outside of class hours to discuss readings, home works, and the methodology of econometrics, research, and science.

Course Objective:

Theory of mathematical statistics and classical linear regression model in context of economic application.

This is a course in econometric theory and the modern econometric approach.  Both require knowledge and application of statistical and probability theory.  The classical linear model and general linear model will be developed.  Maximum likelihood methods and issues will also be developed.  And the software programs that are necessary to implement all three will be emphasized.  Modern econometric topics will also be explored.

Prerequisites:

Students need familiarity in statistical methods, statistical theory, and differential calculus.  The formal course requirement is the following: AREC-ECON 535 (Applied Econometrics).

Course Material:

Assignments will be made from the required texts.  Supporting and related reading will also be provided.

Required: Arthur S. Goldberger.  A Course in Econometrics.  Harvard University Press, 1991.

Required: William H. Green.  *Econometric Analysis*, Sixth Edition.  Prentice Hall, 2007.

Recommended: Peter Kennedy.  *A Guide to Econometrics*, Fifth Edition.  MIT Press, 2003.

Lecture overheads and class handouts will be posted at http://dare.colostate.edu/skoontz.  Students should make sure the email address tied to their eID is up-to-date and a campus email is preferred.

<u>Grading</u>:

Examinations and assignments for the course will total approximately 600 points. The approximate distribution of these points is as follows.

| | |
|---|---|
| First Examination | 100 points |
| Second Examination | 100 points |
| Problem Sets | 250 points |
| Final Examination | 150 points |

The instructor reserves the right to change the percentage of points in the course requirements. The most likely change will be to problem sets. Quizzes and additional out-of-class assignments may be added. It is most likely that the points allocated to out-of-class assignments will be increased. But, any changes will be communicated.

Final grades for the course will be determined on the standard modification to the 90-80-70-60 scale that accompanies Graduate School courses. Any student receiving less than 80% on the graded course material will receive an "C." There are no exceptions and no negotiation. (In addition, any student receiving less than 60% on the graded course material will receive an "F.") If a student shows strong improvement in exam scores over the semester, the instructor reserves the right to weigh the end-of-semester exams more heavily when calculating that student's final grade. The instructor will make minimal use of the +/- grading system.

<u>Assignments</u>:

There will be three in-class examinations. There will be two 100-point exams given during the semester. Make-up exams will be the option of the instructor. If any student must miss an exam due to an emergency, or due to a scheduling conflict, which is communicated to the instructor prior to the exam then the student's final grade may be based on the other exams taken. There will be a 150-point final exam at the end of the semester.

Students will be assigned approximately five problem sets. This work will expose the student to a variety of problems. The instructor will provide any data and ask a variety of questions related to modeling and economic interpretation. Students will perform the analysis and write a short report describing the results of the analysis and answering the questions. The work must be an independent effort on the part of each student. Students will need to become familiar with at least one spreadsheet and statistical regression software package.

<u>Academic Integrity Policy</u>:

University academic integrity policies will be strictly enforced and enforced with maximum penalty. Students should read and know these policies. The policies are published in the General Catalog.

<u>Final Exam:</u>

The final exam is scheduled for May 15, from 1:30 p.m. to 3:30 p.m. Any exceptions to this must be cleared with the instructor by May 1. The exam will be comprehensive or with a slightly heavier influence on the last portion of the course.

**Course Outline**

| Topics | Readings |
| --- | --- |
| I.  Review of Matrix Algebra<br>(Not covered in class.  Students review independently.) | Greene Appendix A<br>Goldberger 14.2 |
| II.  Statistics Review | |
|     Probability and Distribution Theory | Greene Appendix B<br>Goldberger Chapters 1-8 |
|     Statistical Inference | Greene Appendix C<br>Goldberger Chapters 8-11 |
| III.  Classical Regression Model | Goldberger Chapters 13-21, 24-25<br>Greene Chapters 2-6 |
| IV.  Generalized Classical Regression Model | |
|     Principles | Goldberger Chapter 27<br>Greene Chapter 10 |
|     Heteroskedasticity | Goldberger Chapter 28<br>Greene Chapter 11 |
|     Autocorrelation | Goldberger Chapter 28<br>Greene Chapter 13 |
|     Seemingly Unrelated Regressions | Goldberger Chapter 30<br>Greene Chapter 14 |
| V.  Maximum Likelihood Estimation | |
|     Theory | Goldberger Chapter 12<br>Greene Chapter 17 |
|     Examples | Goldberger Chapters 19, 13<br>Greene Chapters 17, 21, 22 |
| VI.  Topics | J-STOR Papers |

**COLORADO STATE UNIVERSITY**
**DEPARTMENT OF AGRICULTURAL & RESOURCE ECONOMICS**

*Survey*　　　　　**Agricultural & Resource Economics / Economics 635**　　　*Spring 2008*
**Econometric Theory I**


Name: _____


Department and Degree Sought: _____


Time in Program: _____


Previous Course Work (List graduate or highest level undergraduate courses):

Agricultural Economics: _____

Economics: _____

Statistics: _____

Mathematics: _____


List statistical and spreadsheet software with which you are familiar:


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