Syllabus for AREC 661  
Department of Agricultural Economics  
Texas A&M University  

Course Description: This course covers topics in the theory of econometrics and their applications to empirical problems. Emphasis is on the specification and estimation of econometric models relevant to agricultural and applied economics. Data issues and software packages also are noteworthy topics.

website: http://agecon2.tamu.edu/people/faculty/wu-ximing/public/agec661/agec661.htm

Day & Time: Tuesday & Thursday, 9:35am – 10:50pm  
Place: AGLS 110

Instructor: Ximing Wu  
Email: xwu@tamu.edu  
Office Hour: Open door policy  
Office: AGLS 379


References:  

Practical Assignments:  
Each student will be responsible for a number of homework problem sets. These homework problem sets will give the student the needed experience and familiarity with the concepts and theory discussed in the classroom. Although no research paper is required, each student will be responsible for handing in well-written homework solutions. Emphasis is placed not only on econometric techniques but also communication of results. To successfully apply econometric techniques, a systematic framework for model design, hypothesis testing, and estimator choice is necessary. Importantly, the applied researcher must be able to interpret and communicate research results in an intelligible manner. Problem sets will be handed out on a more or less regular basis. At the time problem sets are assigned, due dates will be set. The assignments are to be done in two-student groups.

Examinations and Grading:  
Grades in this course will be based on two semester exams (one at mid-term and one at the end of the course during finals week,) as well as the various homework problem sets. The semester exams will count 35 percent (each) of the grade, the aggregate practical assignments for the remaining 30 percent.
Software: Because some of the homework questions will be empirical, each student should have access to some econometric or statistical software package. Students are allowed to use whatever software suitable for the homework. For my instruction, I will give examples in R, which is an open-sourced statistical software (http://www.r-project.org/).

Make-up Policy: There is no make-up policy regarding tests or homework assignments. No homework assignment will be accepted late.

Miscellaneous: Class discussion is encouraged and desired. Please do not hesitate to volunteer information, ask questions, and so on.

Students with Disabilities: The Americans with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities in Room 126 of the Koldus Building so your professor can best accommodate your needs. The phone number is 845-1637.

Scholastic Dishonesty Statement: As commonly defined, plagiarism consists of passing off as one’s own ideas, work, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you should have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research cannot be safely communicated. If you have questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules, under the section, “Scholastic Dishonesty.”

Topical Outline

1. Introduction and background
   a. Causal relationships and ceteris paribus analysis
   b. Conditional expectations and related concepts in econometrics
   c. Basic asymptotic theory

2. Linear models
   a. Single-equation linear model
   b. Instrumental variables
   c. Specification tests
   d. Non-iid sampling schemes
   e. System of equations
   f. Simultaneous equations
   g. Linear unobserved effects panel data models
3. Nonlinear Estimation
   a. M-estimation
   b. Maximum likelihood methods
   c. GMM and minimum distance estimation
   d. Hypothesis testing
   e. Discrete response models
   f. Censored regression models