Economics 491G
Applied Econometrics

Fall 2015
MW 3:30-4:45 Room BE 127

Professor: Christopher R. Bollinger
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Course Description: The course catalog says "To provide the student with a firm foundation in the design and estimation of economic models, empirical analysis of economic relationships, and forecasting. Emphasizes the structure and utilization of economic models." This course will begin with a rigorous treatment of the classic linear regression model (CLRM). The student is assumed to have familiarity with linear regression from ECO 391 and basic statistics from STA 291. We will then examine estimation problems, motivated by economic research questions, where the assumptions of the CLRM fail. Alternative estimators will be presented. Students will be graded on regular homework problems (both mathematical and empirical) and a research project using the tools of the class.

Textbook: Wooldridge, Jeffrey M. *Introductory Econometrics: A Modern Approach*, Southwest Publishing, 5th edition.

Evaluation:

Regular Homework Problems	Regular Through the Semester	40%
Project Meeting 1	September 25	5%
Project Proposal/Introduction	September 30	5%
Project Data Section	October 28	10%
Project Meeting 2	November 13	5%
Project Preliminary Results	December 2	5%
Project Final Paper	December 17, 8AM	20%
Project Presentations	December 7, 9, & Dec 17, 8AM	10%

Teaching Philosophy: This class can be an exciting and valuable class if you take it seriously and put the work into the project. Much of the syllabus below, unfortunately, constitutes rules and regulations you as the student must follow. Rather than set an adversarial tone, these rules are meant to establish a common approach that is applied equally to all students: fair and equitable treatment is important to me. I don't want to be a policeman. Testing and grading are also viewed as adversarial. I wish it weren't so. I view teaching as joint process: All of us working together to gain an understanding of important material. I am available for help if you are struggling. I want you to ask questions in class. I want you to answer my questions in class because thinking and participating are very important to understanding this material.

Common Courtesy: Please be courteous to me and the other students in class.

Arrive before class begins, so as not to disrupt class.

Stay through the whole class.

Turn your cell phones and tablets and such to silent.

Don't text during class.

Don't talk to your neighbor when I or other students are talking. If you have a question, raise your hand.

If you make an appointment to see me: show up or let me know ahead of time if something important comes up.

Assignments:

There will be homework assigned approximately every week. The homework problems will be a mix of both mathematical problems related to the models we are studying and empirical work using STATA or another statistical program. Most of these will be front loaded at the beginning of the course. The later part of the course I expect that your project will be taking your time. Homework will be graded on a 10 point scale (the average will then be converted to a 40 point scale).

All assignments (including paper) are due **at the beginning of class** on the date specified when the assignment is given. I am a stickler about the deadline: you need to be on time for class and turn it in at the beginning. Any homework turned in after I collect it will be considered late. Assignments that are less than 3 business days late will be penalized by 10%. Homework over 3 business days late will not be accepted for credit.

We will be doing presentations during the **last week of class and the final examination period**. To receive credit for your presentation, **you must attend all other presentations** (or have an excused absence).

G Option:

For those students who are taking this with a G-option, I will be requiring your paper to meet a higher standard. In particular, a more comprehensive literature review is required, and you must establish how your paper adds to the body of knowledge in your field. If you are enrolled as a graduate student, you are taking the G option. If you are an undergraduate, you are not.

Attendance Policies and Excused Absences: I don't take attendance. You are all adults who can decide whether you wish to attend class or not. However, I am also not required to repeat material from previous lecture or give you private lectures on material you choose to miss. You are responsible for obtaining lecture notes from a classmate.

The following are acceptable reasons for excused absences from exams or late assignments: 1) serious illness; 2) illness or death of family member; 3) University-related trips; 4) major religious holidays (from Faculty Senate Rules 5.2.4.2.C). It is the student's responsibility to inform me of the absence, preferably in advance, or as soon as reasonably possible (Faculty Senate Rule 5.2.4.2.D). The burden of proof is on the student to provide sufficient documentation regarding the nature of the absence, and I retain the right to ask for such proof. It is your responsibility to make proof easily and completely available to me. For class

assignments, you are responsible for turning them in on time, unless the illness or other excused absence prevented you from being able to attend class and work on the assignment for a majority of the duration of the assignment.

Cheating: I don't like cheating. I really abhor plagiarism. The Faculty Senate has decided that the minimum penalty for cheating is an E for the course. What constitutes cheating? Many cases are obvious: copying answers off another person's exam, for example. Let me clarify other areas of cheating for this class.

Homework: I do not mind, in fact I encourage students to work together. Copying someone's answers is not working together. To this end, I require that all written explanation be in YOUR OWN words and output be time and date stamped from the computer.

Project: the project write up should be entirely in your own words unless you are specifically quoting a source (unlikely in this case). I will run your write up through safe assign. Please don't plagiarize. I recognize that this is likely the first time you have written this kind of paper. Do your best, you will get more out of it that way.

Accessibility and Accommodation: In order to meet the requirements of federal legislation, the University has enacted campus policies and procedures to ensure each qualified person shall receive the reasonable accommodations needed to ensure equal access to employment, educational opportunities, programs, and activities on campus. Students with a disability requiring some accommodation should contact the Disability Resource Center (2 Alumni Gym) and obtain a Letter of Accommodation. I will be pleased to work with any student providing this documentation to ensure that they have all the resources needed to succeed in my class

Tentative Outline

Review and Extension of CLRM	Ch. 2-9
Heteroskedasticity and Serial Correlation	Ch. 8 & 12
Endogeneity & IV	Ch.15 &1 6
Panel Data Topics: Fixed and Random Effects	Ch. 13 & 14
Limited Dependent Variables Models	Ch. 17
Sample Censoring, and Sample Selection	Ch. 17

This is only tentative and meant to provide some guideline as to topics likely to be covered. It is ambitious and I seldom get through all of this material. The first part of the course is more technical and mathematical, building a deeper understanding of the Classical Linear Regression Model you were introduced to in ECO 391. This is material in Chapters 2-9. Much of that material, you have already been exposed to, and I won't belabor it. However, the link between the assumptions and the properties is crucial and we will highlight that. Beginning with Chapter 8, we will examine the failure of these assumptions, both noting the impact on the CLRM and proposing and investigating alternative approaches.