ECO 5720
Applied Econometrics
Fall 2023

Instructor: Jayjit Roy
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Student Office Hours: Monday, Wednesday 11:00 a.m.-2:00 p.m. (in-person or via Zoom); and by appointment.
Communication Expectations: Please do not hesitate to email me with questions. I should be able to respond within 24 hours.

Course Description: The goal of this course is to equip students with the basic skills required to (i) ask empirical questions, (ii) conduct associated regression analyses, and (iii) interpret findings accurately. In addition to the basic concepts of linear regression, topics covered will include non-linear specifications, binary variables, heteroskedasticity, panel data, instrumental variables, and limited dependent variables. The statistical software *Stata* will be used, but no prior knowledge of the software is required.

Required E-Textbook and Software: *Introductory Econometrics: A Modern Approach-7th ed.*, by Jeffrey M. Wooldridge. The e-book is provided by Cengage Unlimited.

Other useful books include:
- *Causal Inference: The Mixtape*, by Scott Cunningham. The free online version is available at: https://mixtape.scunning.com/.
- *The Effect: An Introduction to Research Design and Causality*, by Nick Huntington-Klein. The free online version is available at: https://www.theeffectbook.net/.

Grading: Grades will be based on exams, assignments, and presentations:
- Assignments will count for 20% of the course grade.
    - They must be submitted by specific due dates.
- Exams will count for 50%.
    - Two exams will count for 25% each.
    - Make-up exams will typically not be offered. If you are likely to miss an exam due to participation in a university-sponsored activity or religious observance, you should notify me in advance. In case of an emergency, see http://academicaffairs.appstate.edu/syllabi. For an excused missed exam, the make-up test should be taken before the next class meeting.
- Presentations will count for 30%.
    - Three presentations will count for 10% each.
    - For the presentations, please form groups of four and notify me by September 6. Depending on the number of students, some groups may have three or five members.
    - The first presentation will be based on papers published in economics journals. Groups can choose topics on a first-come, first-served basis. The presentation should address: (1) why the topic is interesting, (2) what analysis is performed, (3) what data are used, (4) what conclusions are drawn, and (5) what could be one specific direction of future research. You are expected to choose your topics by September 13.
    - For the second presentation, please discuss an empirical relationship that you wish to estimate. The presentation should address: (1) why the topic is interesting, (2) what data are available to conduct the analysis, (3) the specific empirical relationship to be estimated, and (4) the estimation strategy you consider most appropriate.

- For the third presentation, you will be given a dataset to estimate an empirical relationship. The presentation should address: (1) the choice of your estimation strategy, (2) the strengths of your empirical approach, and (3) the drawbacks of your chosen method.
- The presentation dates will be announced in class at least a week in advance.
- For any presentation, if a student does not participate adequately such that the individual's group members complain to me, the student will be assigned a zero for that presentation's grade.
- You are expected to be present for all presentations.

At the end of the semester, the final percentage mark will be converted into a letter grade based approximately on the following scale:

Percentage: Grade	Percentage: Grade	Percentage: Grade
93-100: A	80-82: B-	67-69: D+
90-92: A-	77-79: C+	63-66: D
87-89: B+	73-76: C	60-62: D-
83-86: B	70-72: C-	0-59: F

Please visit http://academicaffairs.appstate.edu/syllabi for university policies pertaining to academic integrity, disability accommodations, religious observance, and student engagement.

It is your responsibility to make sure that you are officially registered for this course. If you are not officially registered, please do not expect to be added late.

Statistical Software:
- http://www.stata.com/order/new/edu/gradplans/student-pricing/
- https://stats.idre.ucla.edu/stata/
- https://www.youtube.com/user/statacorp

Class Schedule:

Material	Date
Course Introduction	August 21
Chapter 1: Random Variables, Econometrics and Economic Data	August 23
Chapter 2: The Simple Regression Model	August 28 and 30
Chapter 3: Multiple Regression Analysis – Estimation	September 6 and 11
Chapter 4: Multiple Regression Analysis – Inference	September 13 and 18
Chapter 5: Multiple Regression Analysis – OLS Asymptotics	September 20
Chapter 6: Multiple Regression Analysis – Further Issues	September 25

Chapter 7: Multiple Regression Analysis with Qualitative Information	September 27 and October 2
Presentation 1	October 4
Exam 1 (on all topics covered so far)	October 9
Chapter 8: Heteroskedasticity	October 11
Chapter 17: Limited Dependent Variable Models	October 18 and 23
Matching	October 25 and 30
Chapters 13 and 14: Pooled Cross Sections and Panel Data	November 1, 6, and 8
Presentation 2	November 13
Chapter 15: Instrumental Variables	November 15 and 20
Other Methods	November 27 and 29
Presentation 3	December 4
Exam 2 (on all topics covered since Exam 1)	December 8

Note: The schedule above may have to be modified as the semester progresses.