



**University of International Business and Economics
International Summer School**

Econ 303 Econometrics

Term: May 24 -June 24, 2021

Instructor: Professor Neal Rappaport

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Class Hours: Monday through Thursday, 120 minutes each day (2,400 minutes in total)

Office Hours: TBD

Discussion Session: 2 hours each week

TA: TBD

Total Contact Hours: 64 contact hours (45 minutes each, 48 hours in total)

Credit: 4 units

→ Please note on pages 4/6 alternative arrangements which may become necessary if the health situation does not permit in-person classes.

Course Description:

Econometrics provides a link between theoretical economic models and “real world” data. Econometrics is a required part of the “toolbox” of an undergraduate economics education and for understanding applied economics courses and research. To learn econometrics, you must actually do econometrics. So, the focus on this course will be provide a theoretical foundation that allows you to do econometric analysis and to understand econometric analysis published in a variety of journals.

Course Goals:

There are several goals in this course. The first is gain an understanding of the statistical theory that underlies econometrics. The second is to be able to learn to use data analytical tools that allow you to formulate and then estimate an econometric model. The third goal is to gain the ability to interpret econometric results and draw statistical inference from these results.

Course Prerequisites:

Microeconomics at the Intermediate level (typically a 200 or 300 course designation).
Macroeconomics at the principles level (100 level). Differential Calculus and a Probability and Statistics course.

Required Textbook:

Jeffrey M. Wooldridge, *Introductory Econometrics, A Modern Approach, 7th Edition*; copyright 2020, Cengage, ISBN: 978-1-33-755886-0. Note: The 6th Edition is acceptable but if you use the older version, you are responsible for ensuring that you have access to any material or problems that have changed across editions.

Required Software Package:

Excel has functions to allow for basic econometric analysis and that is what we will be using for this course. As you move into more advanced courses, you will need access to more powerful dedicated econometrics packages like Stata.

Grading Policy:

Grades will be based on the following (1000 points—i.e. 25% is 250 points):

- Exams: Two Exams, each worth **25% of final grade**; Exam 1 on Monday, 7 June, Exam 2 on Tuesday, 22 June; **(total 50% of course; 500 points)**
- Homework, **10% of the grade**.
 - Homework grading: If you try to answer—hopefully successfully—the assigned problem or problems—you will receive credit for that assignment. Trying and turning in all the homework assignments (on time) will earn you the full 10%.
 - Late homework and missing assignments will decrease your homework grade.
 - Homework is to be turned in individually. You are encouraged to work problems with classmates, but you must turn in your own assignment.
- Project/Paper: **40% of the grade. Project/Paper due at the start of class on Monday, 21 June. No late papers accepted unless there are extenuating circumstances.**
 - For this project, you are to formulate an econometric model, find the data, estimate the model, and interpret the results. The paper should be no more than 3 pages including your results, but not including your cover page. (You should be prepared to provide your actual computer results should I ask for them as backup to your paper.)
 - Paper format is
 - Cover page with name, title and certification of individual work
 - One paragraph introduction
 - One or two paragraphs about your model and why it is important
 - One paragraph about the source of your data
 - One paragraph detailing your testable hypotheses
 - Two or three paragraphs interpreting your results
 - Your results need to be presented in a table or tables at the end of the paper
 - One or two paragraph as a conclusion
 - Paper is to be written in Word, Pages, et cetera and printed out. Paper is due at the start of the 21 June class.

- The model must be more complex than simple linear regression and must include testable hypothesis or hypotheses.
- Please tell me your proposed topic in a one paragraph submission (printed out) at the start of the 26 May class. The paragraph should clearly state the subject of the project and your reason for choosing this topic.
- The project is individual work. You can consult with the TA or with me.
- Preliminary presentation of paper—in-progress review using slides (e.g. PowerPoint; 5-10 minutes); 9 June.
- Final presentation of paper results—using slides (e.g. PowerPoint; 10-15 minutes); Wednesday, 23 June.

Grading Scale:

Assignments and examinations will be graded according to the following grade scale:

A	90-100	C+	72-74
A-	85-89	C	68-71
B+	82-84	C-	64-67
B	78-81	D	60-63
B-	75-77	F	below 60

Class Expectations:

Students are expected to:

- ✧ Attend all classes and be responsible for all material covered in class and otherwise assigned. Any unexcused absence may impact a student's grade.
- ✧ Adhere to standards of academic integrity appropriate for UIBE and your home university.
- ✧ Not text, phone, play games nor engage in computer activities unrelated to class during class time.
- ✧ Complete the day's required reading before class and turn in assignments on time.
- ✧ Review the previous day's notes before class; make notes about questions you have about the previous class or the day's reading.
- ✧ Participate in class discussions.

Econometrics is a difficult and important aspect of the undergraduate economics curriculum and requires your dedication to learning the material.

Attendance Policy:

Summer school is very intense and to be successful, students need to attend every class. Attendance will be recorded. Occasionally, due to illness or other unavoidable circumstance, a student may need to miss a class. Any unexcused absence may impact on the student's grade. Moreover, UIBE policy is that a student who has missed more than one-third of a course will fail the course.

➤ **Covid-19 Flexibility:**

While we intend to have classes in person, the primary concern of the University is for the health of the students, faculty, and staff. Thus, depending on the health conditions, there is a possibility that in-person courses will change to online ones. UIBE ISS will notify the students once the decision has been made.

If the in-person courses are to be changed to online courses, we will make a few adjustments:

1. **Lecture:** Each lecture will be uploaded on UIBE's online learning platform on daily basis. Students are required to watch them according to the course schedule.
2. **Discussion:** There will be an open session on ZOOM every Tuesday. The attendance of the discussion is important as it is part of your final score.
3. **Office hours:** I will release the office hours once the course starts. You are very welcome to send me emails to book my time. We will have video or audio calls through ZOOM. Please be noted that book them at least 3 days in advance.
4. **Exams:** I will set a time and the format for the exams if our course is online.
5. **Presentations:** The presentations will be done on ZOOM and all will need to be online to participate.

Course Schedule:

The planned schedule below may be modified to suit the interests or abilities of the enrolled students or to take advantage of special opportunities or events that may arise during the term.

Day and Date	Topic(s)	Wooldridge Text Readings	Problems (note: additions and/or changes may be made in class; denoted by "P") Problems are due at the start of the next class period.
Day 1, Monday, 24 May	Introduction to Econometrics and Economic Data and Introduction to Excel (data analysis) Stata	Chapter 1	Text Problem 1; Computer Exercises (to be assigned)
Day 2, Tuesday, 25 May	Stata Hands-On		Stata Quiz to be worked in class.
Day 3, Wednesday, 26 May	The Simple Regression Model and Introduction to Empirical Projects Paragraph on paper topic due	Chapter 2 and Chapter 19	Chapter 2; P: 1, 4, 8, 10
Day 4, Thursday, 27 May	Multiple Regression Analysis: Estimation	Chapter 3	P: 1, 2, 3, 10, 15

Day 5, Monday, 31 May	Multiple Regression Analysis: Inference	Chapter 4	
Day 6, Tuesday, 1 June	Inference and Hypothesis Testing and “catch up” day	Chapter 4	P: 1, 2,3, 5, 11
Day 7, Wednesday, 2 June	A bit of theory and choosing functional forms	Chapter 5 (skim); Chapter 6	Chapter 6; P: 1, 2, 3, 7
Day 8, Thursday, 3 June	Multiple Regression Analysis with Qualitative Information (dummy variables and interaction terms)	Chapter 7	P: 1, 2, 5, 11
Day 9, Monday, 7 June	Exam 1		
Day 10, Tuesday, 8 June	Heteroskedasticity	Chapter 8	P: 1, 2, 5, 6
Day 11, Wednesday, 9 June	Exam Review; Preliminary Presentation of Paper Specification and Data Problems; Autocorrelation	Chapter 9	P: 1, 3, 8, 9
Day 12, Thursday, 10 June	Simple Panel Data Methods Advanced Panel Data Methods	Chapter 13 Chapter 14	Chapter 13 P: 2, 6 Chapter 14 P: 1, 4
Day 13, Monday, 14 June	Basic Time Series, Serial Correlation Issues	Chapter 10 Chapter 12 (12.1, 12.4)	Chapter 10 P: 1, 2, 3 Chapter 12 P: 1
Day 14, Tuesday, 15 June	Limited Dependent Variables	Chapter 17	P: 1, 2
Day 15, Wednesday, 16 June	Instrumental Variables and Two-Stage Least Squares	Chapter 15	
Day 16, Thursday, 17 June	Instrumental Variables and Two-Stage Least Squares (continued)	Chapter 15	P: 1, 2, 3, 5
Day 17, Monday 21 June	Review and Catch Up		Paper Due



Day 18, Tuesday, 22 June	Exam 2		
Day 19, Wednesday, 23 June	Paper Presentations		
Day 20, Thursday, 24 June	Course Review and Summary		