Econ 305- Econometrics I
Course Syllabus
Fall 2018

"Statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write"
– H.G. Wells

Professor: Pierre Mouganie
Email: pm10@aub.edu.lb
Office : Room 239 Economics department

Course Number: Econ 305
Class Time : Wednesday from 3:00 – 5:30
Office hours: Monday from 2:00-4:00 and Wednesday from 11:00– 12:00 or by appointment

COURSE DESCRIPTION

This is a masters course in econometrics. Econometrics is the basis of all empirical economic analysis and as a result this course will be vital for you---specifically when it comes time for you to write your theses or conduct original research of your own.

The course will be divided into two parts: The first part will cover basic econometric theory in matrix form that all graduate students should be exposed to. The second part of the course will focus on popular identification strategies in modern day economics (Selection on observables and matching, RCTs, Instrumental variable estimation, Differences in differences as well as regression discontinuity designs). At the end of this course, you will put your new found skills to the test by presenting and critiquing academic published papers that use these techniques.

LEARNING OBJECTIVES

After taking this course, students should be able to:
1. Have basic and advanced knowledge of statistical applications in economics.
2. Be able to conduct preliminary research papers on their own.
3. Understand the theoretical foundations of econometrics.
4. Critically read and critique empirical economic papers on their own.
5. Understand the problem of endogeneity in economics in both an intuitive and theoretical manner

COURSE REQUIREMENTS

H.W.s, in-Class quizzes, and participation: 10%

Midterm exam: 50%

Final: [in class presentation of an academic paper (25%) + written critique of selected academic paper (15%)]

Studying on a weekly basis is essential to master this class. We will be covering a lot of in depth topics which are interrelated and as a result weekly studying will be extremely beneficial.

LECTURE NOTES

Taking notes in class will be sufficient for this course. Students are expected to take their own notes during lectures. I will not be posting any lecture notes online. Also, as an extra guide for the course, it is suggested you refer to the below textbooks:

SUGGESTED TEXTBOOKS

Econometrics. Princeton University Press.
Author: Fumio Hayashi

Mostly Harmless Econometrics: An Empiricists Companion. Princeton University Press.
Authors: Joshua Angrist, Jorn-Steffen Pischke

Bruce Hansen's online Econometrics course available at:
https://www.ssc.wisc.edu/~bhansen/econometrics/

COURSE OUTLINE (TENTATIVE SCHEDULE)

TOPIC	Week
Introduction to the course and review of linear algebra	Sept 5
Ordinary Least Squares (Review + Matrix Form)	Sept 12
Ordinary Least Squares continued	Sept 19
Assumption of normality and Hypothesis testing	Sept 26
Maximum likelihood (MLE) and methods of moments estimation (MME)	Oct 3
Instrumental Variables (IV) and Generalized methods of moments (GMM)	Oct 10
Instrumental Variables (IV) and Generalized methods of moments (GMM)	Oct 17
Qualitative Response models (Probit + Logit + Tobit)	Oct 24

Midterm exam (Friday November 2? 5:00 pm Nicely 316?)

Selection on observables	Oct 31
Randomization (the golden rule)	Nov 7
IV estimation in practice	Nov 14
Differences in Differences/ Fixed Effects estimation	Nov 21
Regression Discontinuity Designs	Nov 28
Final Presentations	Dec 5 and Dec 12

NOTE: FINAL REPORT (WRITTEN CRITQUE) DUE BY EMAIL ON DECEMBER 12

SOME FRIENDLY ADVICE

First, econometrics is a cumulative process, each step building on the previous foundation. Do not fall behind! If there is something you do not understand in the lectures, do not procrastinate, get some help (come to office hours, ask questions in class).
Finally, class participation has been statistically linked with better grades on tests. Above all else, remember that the only dumb question is the one you want to ask but don't. So please, **ASK!** Asking questions helps you to learn and helps me to teach.

COURSE POLICY

1. Attendance policy: Students are expected to attend all lectures. Absences should be kept to a minimum.

2. Makeup policy: If a student misses an exam, the student should present a valid medical excuse from AUH or the AUB infirmary. Any other excuse is NOT valid. If no valid excuse is presented, the student will receive a grade of zero on the missed exam.

3. Discipline policy: Students are expected to come to class on time and leave the class on time. Students are expected to behave well in class by not disturbing the instructor or other students. Students are expected not to eat, not to drink, not to talk, not to use their mobile phones, not to let their mobile phones ring during class, etc…If a student misbehaves, the student will be asked to leave the room. If the student continues to misbehave, his (her) name will be given to the Disciplinary Committee for action.

4. Cheating policy: **Students are expected NOT to cheat during exams**. If a student cheats according to the cheating criteria set by AUB, the name of the student will be given to the Disciplinary Committee for action. Students should be aware of cheating criteria at AUB. Students are strongly encouraged to read the Student Code of Conduct: http://pnp.aub.edu.lb/general/conductcode/.

5. Students with Disabilities: AUB strives to make learning experiences as accessible as possible. If you anticipate or experience academic barriers due to a disability (including mental health, chronic or temporary medical conditions), please inform me immediately so that we can privately discuss options. In order to help establish reasonable accommodations and facilitate a smooth accommodations process, you are encouraged to contact the Accessible Education Office:accessibility@aub.edu.lb; +961-1-350000, x3246; West Hall, 314'.