Syllabus: Econ 438 A, Econometric Applications

<u>PLEAE READ VERY CAREFULLY</u> for grading policy. No exceptions will be made later AFTER damage is already done.

Also read carefully:
https://econ.washington.edu/policy-academic-conduct

Instructor   : Dong-Jae Eun (djeun@uw.edu)

Schedule

Lecture   : TTH, 1:30 – 3:20

<u>For student presentation sessions</u>: it will be <u>synchronous</u>. Everyone is required to attend via zoom and ask questions and give comments to presenters.

<u>For all other sessions,</u> it will be <u>asynchronous</u>. You can check the "Announcements" section and see the recorded lecture there.

See the tentative schedule at the end. I'll announce the student presentation session schedules on Canvas, once it's finalized.

OH   : F 11:00–12:00pm

Both for <u>synchronous</u> lectures (presentations) and office hours:
Use the zoom links on Canvas website (check the "Zoom" section)
Currently, only the office hour zoom links have been created. Presentation zoom links will be posted later.

<p align="center">**<Read carefully.>**</p>

In ECON 483, except when students present, lectures will be provided remotely and asynchronously by pre-recorded material posted on Canvas due to my health problems. Lecture note pdf files will be posted on Canvas, too.

For student presentation sessions: it will be synchronous. Everyone is required to attend and ask questions and give comments to presenters. You will be asked to conduct an empirical analysis of your own and present twice: one for 'proposal', one for 'final results'. Read "final_paper_guideline.pdf" for more information.

 I will be available to answer questions during the Zoom office hour (Zoom link will be given on the Canvas website, check the zoom section).

Assignments must be submitted remotely. Scan/type and post on Canvas.

Description

The goal of the course is putting econometric theory in practice. Students will be asked to independently think about an economic question, develop econometric methodologies to tackle the question, discuss limitation of such methodologies, and finally present and write up findings.

Prerequisite
- Minimum grade of 2.0 in ECON 301; either ECON 311/STAT 311, STAT 341, MATH 390/STAT 390, or Q SCI 381.
- If you haven't used Stata, you might have to spend hours to learn by yourself. If you are familiar with coding in general, don't worry. Stata is very easy to learn.
- STATA:
  For statistical analyses, students should use STATA. One reasonably good introduction is http://data.princeton.edu/stata/. It is readily available on the computers in Savery Hall, but some students elect to purchase it anyway for the convenience. You can purchase STATA by following the instructions at https://www.washington.edu/uware/stata/. Choose Intercooled STATA (Stata/IC), not Small STATA. Small STATA is not adequate

for many of the applications we will consider. STATA contains an extensive on-line and embedded help facility.

Textbook
There is no required textbook, but you will benefit from having as reference:
Wooldridge, Jeffrey M., Introductory Econometrics: A Modern Approach, South- Western College Publishing

Using Stata

1. You can buy Stata here (https://itconnect.uw.edu/wares/uware/) You can buy "Stata/IC" (the cheapest version.) Of course you can buy more expensive version but not necessary for this course.

2. If you are familiar with 'remote access', there is a way to use Stata free of charge. Go to this link (https://csde.washington.edu/computing/resources/#TS_Connecting) and follow the instructions under "Remote Access Windows Computing (Terminal Servers)" carefully for setting up the remote desktop. If it doesn't work for you, you may have to use the first option (buying the Stata program)

Note: You can use other statistical packages (like R, Python) ONLY IF you are comfortable using these languages and doing basic statistical analyses. Otherwise I do recommend using Stata as 1) I'll explain Stata in class, but not R/Python and 2) it's a bit more econometrics-friendly than R and Python. (Don't get me wrong. R and Python are also very convenient to use.)

Class Requirements

The grade will be mostly based on individual project (proposal, final paper, and two presentations), participation in discussion (asking questions, giving comments, any form of participation will be appreciated; Remember: there is no stupid question!) during your classmate's presentation, and a problem set.

Attendance check on presentation dates: 10%
- "Zoom" allows instructors to do an easy attendance check. I'll use this feature to grade.

In-class participation (questions/suggestion during classmates' presentation): 15%
(NOTE: absence during classmates' presentations will lead to point deduction BOTH in Attendance and Participation parts.) "Zoom" is extremely helpful for grading this one, too!

Problem sets using Stata: 25%
(This is as important as doing your project, in terms of learning. Use the problem set as a guideline for your project. It's like doing a guided project, with given dataset.) You may want to use "Discussions" board and ask questions there.

Proposal: 5%
Proposal in-class presentation: 5%
Final in-class presentation: 10%
Final paper: 30%

For detailed description of the project, refer to the pdf file ("final paper guideline.pdf") on Canvas. Note that **NO LATE SUBMISSION IS ALLOWED without asking for permission 2 WEEKS PRIOR TO DEADLINE.** My suggestion: To prevent any "accidents", be ready to submit your homework at least one day before the deadline. That way, you won't miss the *actual* deadlines.

Topics/schedule (tentative)

(class 1) Introduction and Class survey

(class 2) Econometrics and causality

(class 3, 4) Simple regression

(class 4, 5) Introduction to Stata

(class 6, 7) <u>Students' proposal presentation</u>

(class 8) Multiple regression

(class 9) Heteroskedasticity

(class 10, 11) Endogeneity and Instrumental variable

(class 12) Difference in difference

(class 13) Limited dependent variable

(class 14-18) <u>Student' final presentation</u>

(class 19) Panel data – basics, wrap-up

<u>Remark</u>

This course is NOT a "writing-intensive" ("W") course. Final paper is more about quantitative analysis and related discussion. Indeed, this course is not designed to be writing intensive.