Instructor: Tae-Hwy Lee
LEC: MW 10:00 am – 11:20 am, SPR 2206
office hours: MW 01:00 pm - 01:50 pm or by appointment, SPR 3103

TA: Pedro Isaac Chavez Lopez
DIS: T 02:00 pm - 03:20 pm, SPR 2206
office hours: T 09:30 am - 10:30 am and R 10:30 am - 11:30 am or by appointment, SPR 4101

Goal: This course covers the econometric methods for the analysis of economic data. It provides a foundation for applied research. The goal is to acquire knowledge necessary to understand the applied and theoretical econometrics literature as exposed in the leading journals.

Course Outline: Lecture notes will be posted at Canvas as we progress.

1. Loss functions
2. Conditional expectations
3. Algebra of least squares
4. Least squares regression
5. Regression under normality
6. A review of large sample asymptotics
7. Asymptotic theory for least squares
8. Restricted estimation
9. Hypothesis testing
10. Bootstrap
11. Specification issues: omitted variables, nonlinearity, heteroskedasticity, autocorrelations
12. Endogeneity and instrumental variables

References:

- Hansen, Bruce (2022), *Econometrics*, Princeton University Press. Chapters 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13.

References for prerequisites (econ 205a)

References for undergraduate textbooks (econ 107)
Grading:

Attendance in all LEC/DIS is required. All exams are mandatory and no make-up exams will be given. The final exam is comprehensive but will have more emphasis on the second half. Students are responsible for any announcement and information provided during LEC/DIS. The following schedule may be subject to change with a short notice.

<table>
<thead>
<tr>
<th>Homework Assignments</th>
<th>30% weekly</th>
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<tr>
<td>Midterm Exam</td>
<td>30% 02/15/2023, 10:00-11:50 am, Wednesday (week 6), SPR 2206</td>
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<tr>
<td>Final Exam (take home)</td>
<td>40% 03/21/2023, 12:00 noon, Tuesday – 03/22/2023, 11:59 pm, Wednesday</td>
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Homework problem sets will consist of analytical exercises as well as computer exercises. Late homework will not be considered. Questions regarding programming should be directed to the TA.

The homework assignments will be graded by the TA and reviewed by the instructor. The exams will be graded by the instructor and reviewed by the TA. Grading will be strict for correctness and completeness and also for quality in writing that is expected for graduate students.

Each homework assignment will be posted on Canvas with due date specified. You will submit each homework through Canvas as a single PDF. You must write your own solutions but collaboration with other classmates is permitted. Just make sure you submit your own work with your handwriting at the end. This applies to programming (codes and computer outputs, both of which you should create and produce individually). In case of collaboration, include the names of your collaborators at the first page and indicate roles and contributions of each person. Late submission of the assignment will not be accepted.

Homework assignments aim to help you understand the materials better. It might also reflect what you should expect in the exams. You are allowed to discuss with other students or TA, but every student must submit her/his own assignments individually. Any academic misconduct will be reported. It is your responsibility to make sure that you learn by doing the assignments.

The final exam is cumulative. Both exams are mandatory. There will be no make-up exams.

**Academic Integrity:** Academic integrity violations involving graduate students are reviewed and processed by the Graduate Division. Examples of academic integrity violations include plagiarism, cheating, unauthorized collaboration, etc. Information, policies and procedures regarding academic integrity for graduate students and the form required to report a violation can be found at the Graduate Division website.

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