

ECON 205B: Winter Quarter 2023

Econometric Methods II

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
13. Generalized method of moments

References:

- Hansen, Bruce (2022), *Econometrics*, Princeton University Press. Chapters 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13.
- White, Halbert (1984, 2001), *Asymptotic Theory for Econometricians*, Academic Press.

References for prerequisites (econ 205a)

- Casella, George and Roger Berger (2002), *Statistical Inference*, 2ed., Cengage.
- Hansen, Bruce (2022), *Probability and Statistics for Economists*, Princeton University Press.

References for undergraduate textbooks (econ 107)

- Stock, James and Mark Watson (2020 4ed. or 2015 3ed.), *Introduction to Econometrics*, Pearson.
- Wooldridge, Jeffrey (2020, 7ed.), *Introductory Econometrics: A Modern Approach*, Cengage.

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.

Homework Assignments	30%	weekly
Midterm Exam	30%	02/15/2023, 10:00-11:50 am, Wednesday (week 6), SPR 2206
Final Exam (take home)	40%	03/21/2023, 12:00 noon, Tuesday – 03/22/2023, 11:59 pm, Wednesday

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.

Copyrights of Course Contents: All the documents on the course site at iLearn is confidential, privileged, and only for the use of the intended recipient and may not be used, published, or redistributed without the prior written consent of Tae-Hwy Lee. This course is a work of original authorship. All course materials (including, but not limited to, class lectures and discussions, handouts, examinations, study guides and web materials) and the intellectual content of the course itself are protected by United States Federal Copyright Law, the California Civil Code, and the California Education Code. Students are permitted to make notes solely for their own private educational use. Students and all other persons are expressly forbidden from distributing or selling lectures notes and all other course materials without the prior written permission of the instructor. Because the instructor owns the copyright to the presentations and all course materials, any notes taken during those presentations and subsequently sold or distributed to others would constitute an unauthorized derivative work and expose the person or persons involved to individual copyright infringement actions by the instructor. The California Education Code (Part 40, Chapter 6.5) states that “no business, agency, or person, including, but not necessarily limited to, an enrolled student, shall prepare, cause to be prepared, give, sell, transfer, or otherwise distribute or publish, for any commercial purpose, any contemporaneous recording of an academic presentation in a classroom or equivalent site of instruction by an instructor of record. This prohibition applies to a recording made in any medium, including, but not necessarily limited to, handwritten or typewritten class notes.” California law forbids anyone from making use of class lecture notes for commercial purposes, and such activity is expressly forbidden without the instructor’s written permission.