

ECON 5150
Applied Econometrics

This is a graduate level course in applied econometrics. This course is for students who finished ECON 5121 (or equivalent course) satisfactorily. This course is intended to deal with model estimation, specification, and inference with various econometric models. Modelling and estimating appropriate econometric models using given data sets are major characteristic of our class, so we will emphasize the interplay between econometric theory and applications. This course will consider model selection problems, data transformations, heteroskedasticity, serial and spatial dependence, endogeneity, panel data model, binary response model, sample selection, survival analysis, and quantile regression. There will be empirical problem sets with brief student presentations. Cooperation among students on problems is strongly encouraged.

Students will learn how to use appropriate econometric models for their research. Students will also have some knowledge about the linkage between theory and its applications in the field of applied economics. The main purpose of this course is to help students to have a broad knowledge of econometric models which can be appropriately used in their research area.

Course Information:

LECTURE: W 9:30 AM - 12:15 PM, William M W Mong Eng Bldg 406.

OFFICE HOURS: W 2:30-4:00 pm, 903 ELB.

COURSE WEB PAGE: http://www.sungpark.net/Econ_5150.html

Textbook:

WOOLDRIDGE, JEFFREY (2002), *Econometric Analysis of Cross Section and Panel Data*, MIT Press.

GREENE, W. (2004) *Econometric Analysis*, Prentice-Hall.

I will also draw materials from

- AMEMIYA, T. (1985) *Advanced Econometrics*, Harvard University Press.
- DAVIDSON, R. AND MACKINNON, J.G. (1993) *Estimation and Inference in Econometrics*, Oxford University Press.
- HAYASHI, F. (2000) *Econometrics*, Princeton University Press.
- MITTELHAMMER, R.C., JUDGE, G.G AND MILLER, D.J. (2000) *Econometric Foundations*, Cambridge University Press.

I will not, however, follow any particular books. Useful papers or notes will be distributed in class.

Course Evaluations.

1. **Participation.** Students are encouraged to actively participate in the class instead of just listening to the lecture. I will ask many questions to students, and expect them to answer properly. If you have any question about course materials or topics we discuss, you are encouraged to ask those questions, particularly during class.
2. **Examinations.** There will be a midterm and one final examinations. The final examination that covers the whole material in order to check whether you understand the material properly. There will be also several problem sets. All students are expected to take examinations at the same time except for a special circumstance in which I may offer a make-up examination. If there is any conflict between the exam date and your special activity, you are required to inform me of the conflict as soon as possible but no later than two weeks before the date of examinations, and must have a proper document from a dean or other authorities to prove that you have a compelling reason. It is the responsibility of the student to supply the necessary documents in time. The rule will be strictly enforced. The dean or doctor's statement should explain why your particular concern prevents you from taking the test.
3. **Homework.** Problem sets have multiple empirical questions. You can use any econometric package to do your homework. However, I strongly encourage you to work with R packages. Simply, in this class, our language is R. R can be downloaded from <http://www.r-project.org>. There will not be any class for teaching econometric packages.
4. **Empirical project.** Students need to write a paper in this course. You can use any econometric package to do your project. Report your results in a neatly prepared report

(no longer than 10 pages: 12 point size and double-spaced). You are required to submit your short report individually. The report is due on the last class. No report will be accepted after the deadline.

5. **Grade.** Your grade will be determined based on your total scores which will be a weighted average of the followings: Homework (20%); Midterm (30%); Final (30%); Project (20%). The final examination that covers the whole material in order to check whether you understand the material properly. If you are not satisfied with grading of an examination or homework, you should submit your complaints in writing. After reviewing a written complaint, your entire examination or homework will be re-graded, and the result will be final.
6. **Make-Up** All students are expected to take examinations at the same time except for a special circumstance in which I may offer a make-up examination. If there is any conflict between the exam date and your special activity, you are required to inform me of the conflict as soon as possible but no later than two weeks before the date of examinations, and must have a proper document from a dean or other authorities to prove that you have a compelling reason. It is the responsibility of the student to supply the necessary documents in time. The rule will be strictly enforced. The dean or doctor's statement should explain why your particular concern prevents you from taking the test.
7. **Some comments.** Students are expected to attend the entire class. You should turn off your cell phone so that the other students can focus. It is your responsibility to make up for a missed class. Ask your classmates what you have missed. But do not expect me to be your private tutor. Do the readings before class. This will allow you to get more from the class and to more actively contribute to the class. Keep in mind that all the examinations, homework and term paper should be your own works. Otherwise, you will not have any point in this course. You will find some reminders or announcement in course website.
8. **Office hour.** My office hour is from 14:30 to 16:00 on Wednesday. If you want to see me sometime other than the regular office hour, simply stop by my office. It might be more convenient to make an appointment before you come. No questions through electronic mail or phone will be answered.

Tentative Course Schedule:

Week	Topic
1	Household Demand Models
2	Single Equation Dynamic Models
3	Model Selection
4	Delta Method and Bootstrap
5	Errors in Variables and Instrumental Variable
6	Simultaneous Equations
7	VAR, Causality & Cointegration
8	ARCH and Stochastic Volatility
9	Spatial Dependence
10	Panel Data
11	Binary Response & Count Data
12	Sample Selection & Censoring
13	Survival Analysis Models
14	Quantile Regression
15	Non-Parametric Regression

Honesty in Academic Work: Visit the following websites for details of the university policy on Honesty in Academic Work: www.cuhk.edu.hk/policy/academichonesty/