National Taiwan University of Science and Technology

2021 Summer Program

ECON 400 Econometrics

Course Outline

Course Code: ECON 400

Instructor: Dr. Yunshan (Victor) Lian

Home Institution: University of Wisconsin

Office Hours: TBA

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Credit: 4

Course Description:

ECON 400 is an introduction course to econometrics, and you are expected to have the knowledge of introductory statistics before taking this course.

The purpose of this course is to help students learn how the core econometric methods are used in practical applications; what kinds of problems we can solve, and what are the limitations of our methods. This course is oriented towards the applications of economic theory with econometric methods rather than the theoretical development of these subjects.

Course Objectives:

- Learn methods for estimating causal effects using observational data
- Learn some tools that can be used for other purposes; for example, forecasting using time series data;
- Focus on applications - theory is used only as needed to understand the whys of the methods;
- Learn to evaluate the regression analysis of others – this means you will be able to read/understand empirical economics papers in other econ courses;
- Get some hands-on experience with regression analysis in your problem sets.

Prerequisites:

1. Principles of Microeconomics or equivalent
2. Introductory Statistics, Statistics for Economics, or equivalent

Required Textbooks:

Introduction to Econometrics (3e) by James Stock and Mark Watson. Publisher: Pearson.
ISBN-13: 978-0133486872
ISBN-10: 0133486877

Recommended Book:

Mastering 'Metrics by Joshua Angrist & Jorn-Steffen Pischke (not required, but recommended as a supplementary material)

Statistical Software

STATA (purchase from here: STATA for student) or XLSTAT

Evaluation:

20% Attendance & discussion

20% Exercise

30% Midterm exam

30% Final exam

Attendance & Discussion:

You are expected to actively participate the class time and TA led discussion.

Exercise:

This course is arranged in a way of intensive and challenging. Thus, it's highly important for you to complete the assigned exercise after each class. Late submission is not accepted.

Midterm and Final Exam

Midterm and final exam will be in the format of problem solving and concept discussion. Final exam is non-cumulative, which means only covers the rest chapters after the midterm exam.

Grading:

A+:4.3——95-100

A :4.0——87-94

A-:3.7——82-86

B+:3.3——78-81

B :3.0——75-77

B -:2.7——71-74

C+:2.3——68-70

C :2.0——65-67

C -:1.7——61-64

D :1.0——55-60

E :0.0——49-54

X :0.0——0

Academic Integrity

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Students must recognize that failure to follow rules and guidelines may constitute academic misconduct.

Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and/or possession of unauthorized materials during an examination.

If I suspect that a student has committed academic misconduct in this course, I am obligated to report it. If it is determined that you have committed academic misconduct, the sanctions could include a failing grade in this course and suspension or dismissal from the University.

Course Schedule (may subject to change for the purpose of learning effectiveness)

Week	Topic	Chapter	Assignment
1	Review of probability	Ch 2	Exercise
	Review of statistics	Ch 3	Exercise
	Review session		Review & discussion
2	Linear regression with one regressor	Ch 4	Exercise
	Regression with a Single Regressor: Hypothesis Tests and Confidence Intervals	Ch 5	Exercise
	Review session		Review &discussion
	Mid-term Exam	Ch 1~5	
3	Linear regression with multiple regressors	Ch 6	Exercise
	Multiple regression	Ch 7	Exercise
	Non-linear regression functions	Ch 8	Exercise
	Review session		Review & discussion
4	Regression with panel data	Ch 10	Exercise
	Regression with a binary dependent variable	Ch 11	Exercise
	Introduction to time series regression and forecasting	Ch 15	Exercise
	Review session		Review & discussion
	Final Exam (non-accumulative)		Ch 6-8, 10,11,15