National Taiwan University of Science and Technology

2020 Summer Program

ECON 400 Introduction to Econometrics

Course Outline

Term: July 06-August 07,2020

Class Hours: 12:00-13:50 (Monday through Friday)

Course Code: ECON 400

Instructor: Mahmud Yesuf

Home Institution: American University, Washington D.C. 20016, U.S.A.

Office Hours: By Appointment

Email: yesuf@american.edu

Credits: 4

Class Hours: According to the regulations of Minister of Education, R.O.C, 18 class hours could be counted as 1 academic credit in all universities in Taiwan. This course will have 72 class hours, including 40 lecture hours, professor 10 office hours, 10-hour TA discussion sessions, 2-hour review sessions, 10-hour extra classes.

Course Descriptions and Objectives:

This is an undergraduate course on Applied Econometrics, with the objective of providing a thorough introduction on theory and application of contemporary econometric tools. It is aimed at students from different disciplines and background who are interested in applying econometric tools to data and problems in their respective disciplines. The major focus of this course would be to introduce students on the fundamentals of estimation and statistical inferences of a cross-sectional, panel and time series data. Emphasis will be placed on understanding theory through applications and problem solving, rather than mathematical theorems and complex proofs. Thus, both paper and pencil and computer-based exercises would be application-oriented. We will use Stata to work on empirical analysis of data. This course will enhance students' skill for today's job market and prepare them better for graduate schools. This course is comprised of 4 sessions of 120 minutes per week for 5 weeks. This course is very intensive and covers course content equivalent to one regular semester class in U.S. colleges.

Prerequisites:

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

Required Textbook:

Stock and Watson (SW), 4th Ed. "Introduction to Econometrics" (2019).

Computer Program:

We will use Stata for our class. Stata is relatively inexpensive but comprehensive statistical and econometrics program, and very easy to learn. Stata is widely used in academic research area and becomes increasingly popular in business area too. Stata runs on both Windows and Mac OS. You need to purchase and install Stata program in your computer. To avoid any possible delays, I strongly recommend you do this while you are in your U.S. school before you come to AUIA summer program. You CANNOT take this course without Stata.
• Go to www.stata.com → Purchase → Order Stata → select Country (United States) → select Students and New Purchase → select Stata product: Stata/IC 6-month license

Student Responsibilities:
The major responsibilities of students for this course are to attend class, complete and submit paper-and-pencil, and computer-lab homework assignments, and take the midterm and final exams. Late assignments will not be accepted without advance request for an extension. All students are expected to arrive on time and attendance will be taken at the beginning of the class. Missing many classes might result in loss of some points.

Grading & Evaluation:

Midterm 40%
Final Exam 40%
Homework 20%

Assignments and exams may be curved but the curve will not in any way reduce the grade of any student. All students are expected to attend and participate in all class sessions. Regular attendance will decide borderline grading

Your overall score will be translated to letter grades as follows:

90-100: A	88-89: A-	85-87: B+	80-84: B
75-79: C+	70-74: C	65-69: D	Below 65: fail

Academic Integrity Code

Standards of academic conduct are set forth in the University's Academic Integrity Code, which is available online at XXXXXXX. By registering, you have acknowledged your awareness of the Code, and you are obliged to become familiar with your rights and responsibilities as defined by the Code. Violations of the Code will not be treated lightly, and disciplinary actions will be taken should such violations occur.

Course Schedule

(*This schedule is tentative and subject to change depending on the pace of the class but I will notify all students of any changes).

Week 1: Econometrics and OLS (S&W, Chapters 4-5)

Session 1: The Nature of Econometrics and Economic Data
Session 2: The Simple Regression Model
Session 3: Introduction to Stata
Session 4: TA Review Session

Week 2: Multiple Regression Analysis(S&W, Chapters 6-8)

Session 5: Multiple Regression Analysis: Estimation
Session 6: Multiple Regression Analysis: Inference
Session 7: Multiple Regression Analysis: Different Functional Forms
Session 8: TA Review Session

Week 3: Regression with Binary Dependent Variable (S&W, Chapter 11)

Session 9: Midterm Exam
Session 10: Multiple Regression Analysis with Binary Dependent variable
Session 11: Extensions to Binary Dependent Variable Model
Session 12: TA Review Session

Week 4: Regression Analysis with Time Series Data (S&W, Chapters 14-16)

Session 13: More on Specification and Data Problems
Session 14: Basic Regression Analysis with Time Series Data
Session 15: Advanced Time Series Regression Models
Session 16: TA Review Session

Week 5: Panel Data Regression Analysis (S&W, Chapter 10)

Session 17: Panel Data Regression Method: Pooling Cross Sections Across Time
Session 18: Semester Review
Session 19: Final Exam