



National Taiwan University of Science and Technology

2019 Summer Program

ECON 400 Elementary Econometrics

Course Outline

Term: July 01-August 02,2019

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

Course Code: ECON 400

Instructor: TBA

Home Institution: TBA

Office Hours: TBA

Email: TBA

Credit: 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 extra class hours.

Pre-requisites: Any college level statistics course

Course Description

This course is designed to teach students how to quantify and test economic theories. We cover the basic ideas of linear regression, first with the two-variable regression model and then with the multivariate model, using both quantitative and qualitative variables. Then we deal with the practical consequences of relaxing various assumptions of the classical linear regression model. At the end of the semester, students will be able to set up an econometric model, estimate the model, perform appropriate diagnostic and hypothesis

tests, and interpret the results.

Course Objectives:

At the end of this course, students should have an operational knowledge of econometrics. They should be able to do the following:

- Formulate an economic problem.
- Build a simple economic model and the corresponding statistical model.
- Generate or collect data.
- Estimate the model parameters using a statistical software package and a computer.
- Perform hypothesis tests, make numerical forecasts, and analyze the statistical and economic consequences and the implications of the empirical results.

Textbooks and Resources:

A. H. Studenmund. 2011. *Using Econometrics: A Practical Guide*. Sixth Edition. Prentice Hall Publishers.

Assignments/Exams

- **Exams:** There will be two Midterm exams and one comprehensive Final Exam during the class time. Each midterm exam will make 20% of your grade. Midterm exams will not be cumulative. However, final exam will be cumulative and it will make 30% of your grade.
- **Problem Sets:** I will post 2 homework assignments. I will not accept late submissions. The problem sets will make 20% of your grade.
- **Class Participation:** Few times during a week, you will have to complete in-class quizzes, which will be announced in advance. Quizzes will add up to 10% of your grade.
- **Attendance:** As a courtesy to your fellow students and me please be on time for class. Attendance is rewarded as 5% **bonus** added to your final grade.

List of discussion/lecture topics:

Chapter 1: An Overview of Regression Analysis

Chapter 2: Ordinary Least Squares

Chapter 3: Learning to Use Regression Analysis

Chapter 4: The Classical Model

Chapter 5: Hypothesis Testing



Chapter 6: Specification: Choosing the Independent Variables

Chapter 7: Specification: Choosing a Functional Form

Chapter 8: Multicollinearity

Chapter 9: Serial Correlation

Chapter 10: Heteroskedasticity

Chapter 12: Time-Series Models

Chapter 13: Dummy Dependent Variable Techniques

Chapter 17: Statistical Principles

