B.E. International Program

Faculty of Economics, Thammasat University

Course Outline

EE325 Introductory Econometrics

Semester 2/2016 (January 16 – May 13, 2017)

Number of credits: 3 credits

Lecture Time: Tuesdays and Thursdays, 9.30 - 11.00 PM

Lecture Venue: Room 201, Faculty of Economics

Instructor: Asst. Prof. Dr. Wanwiphang Manachotphong

Office: Room 525, Faculty of Economics

Email: wanwiphang@econ.tu.ac.th
Office hours: Tuesdays, 11.00 – 12.00 PM (or by appointment)

Course Description:

Application of statistical and economic theories in analyzing economic data, with emphases on parameter estimation techniques and applications of simple and multiple regression models to economic analyses. Use of computer application in practice is also covered.

Prerequisites: EE211, EE212, MA216 (or MA211), and ST216 (or ST211).
(Credits will not be awarded to students who are taking or have completed EE 425)

Course Objectives:

This course provides an introduction to basic results and techniques of econometric theory. The emphasis will be on principles of econometrics and the application of econometric techniques rather than the derivation of theoretical statements. It is expected that at the completion of the course, students will be able to employ econometric investigation in their preparation for writing a seminar paper and to read critically empirical literature.

Instructor's Note:

This is an introductory course for econometric analysis. To understand and be able to apply it effectively, you need to learn some basic theories and the reasoning underlying an estimated equation. Some applied examples will be discussed in class but exercises in homework will provide various examples of econometric application for students. Students are expected to use an econometrics computer package to do the homework. **We will primarily use Stata statistical and econometrics software package for computer work in this course. There will be three Stata workshops in the student computer lab. Each of these workshops will last 1.5 hours. The dates and times will be announced in class accordingly.**

Homework will be assigned on a regular schedule. An assortment of assignments based on theory and some computer applications that involve programming. Homework assignments are expected to be handed on time. Late submission will be graded on the basis of 50% of the total scores of that assignment. More-than two-day late homework will not be accepted. There will be occasional, possibly unannounced, quizzes during the semester. Missed quizzes may not be made up (unless this is the result of an officially excused absence)

Recommended Textbooks:

1. ** Wooldridge, J. M. ***Introductory Econometrics: A Modern Approach***. 3rd ed. Thompson: South-Western, 2006.
   ****** used as the main text.

2. Gujarati, D.N., and D.C. Porter***, Econometrics by Example***., N.Y., Palgrave Macmillan, 2011.
3. Gujarati, D.N., and D.C. Porter***, Basic Econometrics***. 5th ed., N.Y., McGraw-Hill, 2009.

Other teaching materials:

Teaching notes will be uploaded on Moodle at least 1 days prior to class.

Teaching Plan:

Introduction

- What is econometrics?
- Methodology of econometrics
- Types of economic data
  (Wooldridge, ch.1 or Gujarati, ch. 1)

Review of Some Statistical Concepts

- Random variables and distributions
- Expectation, variance, covariance and correlation
- Estimators and desirable properties of estimators
  (Wooldridge, Appendix B or Gujarati, Appendix A, pp.869-912)

Simple Regression Models

- Principle, assumptions and derivation of ordinary least squares (OLS) estimators
- Properties of OLS estimators
- Statistical inference
- Prediction
- Regression Through the Origin
  (Wooldridge, ch. 2 or Gujarati, chs. 2 – 6)

Multiple Regression Analysis (Estimation)

- Motivation
- Model and assumptions
- Estimation of parameters and properties of estimators
- Meaning of partial regression coefficients
- Measuring goodness of fit: R^2 and adjusted R^2
- The matrix approach to linear regression model
  (Wooldridge, ch. 3 or Gujarati: ch. 7, Appendix B, C)

Multiple Regression Analysis (Inference)

- Sampling Distribution of the OLS estimators
- Test on individual regression coefficients
- Testing the multiple linear restrictions
- Testing the equality of two regression coefficients
- Testing for equality or stability of parameters (Chow test)
- Prediction with general linear model
  (Wooldridge, ch. 4 or Gujarati: ch. 8)

Multiple Regression Analysis (Extensions)

- Data scaling on OLS statistics
- More on functional forms
  (Wooldridge, ch. 6, (6.1 and 6.2))

Dummy Variable Regression Models

- Describing Qualitative Information
- Models with a single dummy independent variable
- Using dummy variables for multiple categories
- Interactions involving dummy variables
  (Wooldridge, ch. 7 or Gujarati: ch. 15)

Heteroscedasticity Problem

- Nature and Consequences of heteroscedasticity for OLS

- Testing for heteroscedasticity
- Remedial measures (weighted least squares estimation)
  (Wooldridge, ch. 8 or Gujarati, ch. 11)

Specification Errors and Data Problems

- Type of specification errors
- Consequences of specification error
- Tests of specification error
- Errors of measurement
  (Wooldridge ch. 9 or Gujarati: ch. 13)

Multicollinearity Problem

- Nature and Consequences of Multicollinearity
- Detecting Multicollinearity
  (Wooldridge, ch. 3 (3.4) or Gujarati, ch. 10)

Autocorrelation Problem

- Nature and Consequences of Autocorrelation, Serial Correlation
- Testing for Autocorrelation
- Remedial measures
  (Wooldridge, ch. 12 (12.1-12.3) or Gujarati, ch. 12)

Grading:

Homework and Pop Quizzes	20%	
Midterm Exam	35%	**(Thursday March 9, 2017, 9.30 – 11.00 AM)**
Final Exam	45%	**(Monday, May 15, 2017, 9.00 AM – 12.00 Noon)**

***Late homeworks count as 50% of your actual marks.**

*If there is any handout or additional reading, it will be posted on Moodle prior to class. Students are responsible to review the topic ahead of the class for more effective learning.

Important Dates:

Classes Begins	January 16, 2017
Adding and Dropping Courses	January 16 – 30, 2017
Midterm Exam Period	March 6 –11, 2017 (No Lectures)
Course Withdrawal with "W"	March 22 – 27, 2017
Class Ends	May 13, 2017