B.E. International Program

Faculty of Economics, Thammasat University

Course Syllabus

EE 325 Introductory Econometrics

Semester: 1/2018 (August 14 – December 3, 2018)

Instructor: **Asst. Prof. Dr. Wanwiphang Manachotphong (Section 046401)**

Office: Room 525, 5th Floor (Prachan Campus)

E-mail: wanwiphang@econ.tu.ac.th

Office Hours: by appointment

Class Schedule: Tuesday and Thursday 09:30 – 11:00 hrs.

Class Room: Room 203, Faculty of Economics

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)

Aims and 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 2-3 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. There will be both online- and paper-based homework. 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)

Assessment:

Homework Assignments and Quizzes	20 points
Midterm Exam	35 points
Final Exam	45 points

Academic Honesty

You are expected to be honest in all of your academic work. Copying is plagiarism and will be treated as an honor code violation. Potential sanctions include failure in the course and suspension from the university.

Required Textbooks:

1. ** Wooldridge, J. M. ***Introductory Econometrics: A Modern Approach***. 3rd ed. Thompson: South-Western, 2006.
2. Gujarati, D.N., and D.C. Porter**,** ***Basic Econometrics***. 5th ed., N.Y., McGraw-Hill, 2009.

**Main Text – you should be supplied with both a hard copy and an online account.

Recommended Texts for Further Study

Jame H. Stock and Mark W. Watson, ***Introduction to Econometrics***, 2nd Edition, Boston: Pearson Addison Wesley (2007)

William E. Griffiths, R. Carter Hill and George G. Judge, ***Learning and Practicing Econometrics***, John Willey & Sons (1993 or latest edition)

Joshua D. Angrist and Jörn-Steffen Pischke, ***Mostly Harmless Econometrics: An Empiricist's Companion***, Princton University Press (2009)
ISBN-13: 978-0-691-12035-5

Other teaching materials:

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

Course Outline

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)

===========**MIDTERM EXAM: October 4, 2018, 09.00 - 11.00 hrs.**=============

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)

=============FINAL EXAM: December 18, 2018, 09:00-12:00 hrs. ============

Remarks:

- **Mid-Term Examination (Thursday, October 4, 2018, 09.00 - 11.00 hrs.)**

- **Final Examination** **(Tuesday, December 18, 2018, 09.00 – 12.00 hrs.)**

ACADEMIC CALENDAR SEMESTER 1/2018

Event	Semester 1 (August - December 2018)
Pre-Registration period (BE Portal)	June 27 - 29, 2018
Course Registration (Reg TU)	July 16 - 19, 2018
Payment	July 16 - 20, 2018
Classes Begin	August 14, 2018
Adding and Dropping Courses W/O Record	August 14 - 27, 2018
Payment	August 14 - 28, 2018
Mid-term Examination Period	October 1 - 6, 2018
*His Majesty the late King Bhumibol Adulyadej Memorial Day**	*October 13, 2018*
*Substitution for His Majesty the late King Bhumibol Adulyadej Memorial Day**	*October 15, 2018*
Course Withdrawal With "W"	October 17 - 22, 2018
*King Chulalongkorn Memorial Day**	*October 23, 2018*
Last Day of Classes	December 3, 2018
Final Examination Period	December 4, 6 - 9,11 - 20 , 2018
*The birthday of His Majesty the late King Bhumibol Adulyadej**	*December 5, 2018*
*Constitution Day**	*December 10, 2018*

Remark:

* Holiday, No classes during this period