



# B.E. International Program

## Faculty of Economics, Thammasat University



### COURSE OUTLINE

#### EE325 INTRODUCTORY ECONOMETRICS

**Semester:** 2/2011 (January 9 – May 20, 2012)

**Instructor** Ajarn Kaewkwan Tangtipongkul

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**Office hours:** Tuesdays and Thursdays, 9:00 am- 10:30 am

**Lectures:** Tuesdays and Thursdays, 11:00 - 12:30 hrs.

**Room:** 304, 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.

**COURSE OBJECTIVE:** To provide a good start and understanding on applying econometric tools for economic analysis.

#### TEXTBOOKS:

\*\*\*Gujarati, D.N. (2009) *Basic Econometrics*. 5<sup>th</sup> ed. Singapore, McGraw-Hill. (G)

Wooldridge, J.M. (2006) *Introductory Econometrics: A Modern Approach*. 3<sup>rd</sup> ed. Thomson South-Western. (W)

\*\*\* **Main Textbook**

**PREREQUISITES:** Principles of Microeconomics (EE211), Principles of Macroeconomics (EE212), Calculus for Social Sciences (MA216 or MA211) and Statistics for Social Sciences (ST216 or ST211) Credits will not be awarded to

students who are taking or have completed EE 425. No prior knowledge of STATA is required.

### **IMPORTANT DATES**

**Class Begin**                    January 9<sup>th</sup>, 2012

**Classes End**                    April 26<sup>th</sup>, 2012

### **Examinations**

**Mid-term Exam: Tuesday, February 28<sup>th</sup>, 2012; 11.00-12.30 hrs.**

*(No lectures will be given during the mid-term week: February 27 – March 3, 2012)*

**Final Exam: Friday, May 10<sup>th</sup>, 2012; 09.00-12.00 hrs.**

**GRADING** The final grade of the course will be based on the following items:

1. Mid-Term Exam (35% )
2. Homework Assignments (10%)
3. Quizzes (10%)
4. Final Exam (45%)

**Note:** The mid-term and final exams are closed books and closed notes. Midterm and final exam dates are not changed due to the official schedule from BE program. Only physical condition with approval medical document is allowed for postponing the exam.

**Quizzes:** There will be 6 random equally weighted quizzes. The lowest quizzes score will be dropped. There are no make-up quizzes.

**Homework Assignments:** There will be equally weighted homework assignments. Late homework will be graded based on 50% of full credit. More than two-day late homework will not be accepted.

### **TENTATIVE COURSE OUTLINE**

1. **The Nature of Econometrics and Economic Data**                    (1 session)
  - What is Econometrics?
  - Methodology of Econometrics
  - The Structure of Economic Data

Reference: G: intro & ch. 1; W: ch. 1

**2. A Review of Some Statistical Concepts** (4 sessions)

- Summation and Product Operators
- Sample Space, Sample Points, and Events
- Probability and Random Variables
- Probability Density Function (PDF)
- Some Important Theoretical Probability Distributions
- Statistical Inference: Estimation
- Statistical Inference: Hypothesis Testing

Reference: G: Appendix A; W: Appendix A, B, and C

**3. The Simple Regression Model** (8 sessions)

- Two-Variable Regression Analysis
  - Concept of Population Regression Function (PRF) & The Sample Regression Function (SRF)
  - Method of Ordinary Least Squares
  - The Classical Linear Regression Model: The Assumptions Underlying the Method of Least Squares
  - Precision or Standard Errors of Least-Squares Estimates
  - The Coefficient of Determination

Reference: G: Ch. 1-3; W: Ch.2

- Two-Variable Regression: Interval Estimation and Hypothesis Testing
  - Classical Normal Linear Regression Model (CNLRM)
  - Interval Estimation and Hypothesis Testing

Reference: G: Ch. 4&5; W: Ch.3&4

**4. Multiple Regression Analysis** (5 sessions)

- Multiple Regression Analysis

Reference: G: Ch. 7; W: Ch.3

- Multiple Regression Analysis: The Problem of Inference

Reference: G: Ch. 8; W: Ch.4 &6

- Extensions of the Two-Variable Linear Regression Model

- Regression through the origin
- Scaling and units of measurement
- Functional Forms of Regression Models

Reference: G: Ch. 6; W: Ch. 6

**5. Dummy Variable** (2 sessions)

Reference: G: Ch. 9; W: Ch. 7

**6. Relaxing the Assumptions of the Classical Model** (8 sessions)

- Multicollinearity
- Heteroscedasticity
- Autocorrelation
- Specification Errors

Reference: ch 10 – 13; W: Ch 3, 4, 8 & 12