BACHELOR OF ECONOMICS
THAMMASAT UNIVERSITY

Course Outline

Course ID: COURSE TITLE

Semester 1/2021 (August 9 – November 27, 2021)

Number of Credit: 3 credits (3-0-6)

Prerequisite: 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 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 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)

Class Time and Logistic

Class day: Tuesday and Thursday

Class time: 11:00 – 12.30 hours

Section 046401:

Teaching Materials Platform: [BE Moodle]

Enrollment key for BE Moodle: 6781 (http://bemoodle.econ.tu.ac.th/)

Meeting Platform: [Zoom]

Topic: EE325 Section 1

Time: Aug 10, 2021, 11:00 AM Bangkok

Every week on Tue, Thu, until Nov 25, 2021, 30 occurrence(s)

Join Zoom Meeting

https://us02web.zoom.us/j/86060475966?pwd=cExrNFhuT2REbUVZTmJUaUdJczl6dz09

Section 046402:

Teaching Materials Platform: [BE Moodle]

Meeting Platform: [Zoom]

Topic: EE325 Section 2

Time: Aug 10, 2021, 11:00 AM Bangkok

Every week on Tue, Thu, until Nov 25, 2021, 30 occurrence(s)

Join Zoom Meeting

https://zoom.us/j/98473601914

Instructor:

Section 046401:

Name: Asst. Prof. Dr. Kaewkwan Tangtipongkul

Office Hours: TR, 10:00 – 11.00 hours or by appointment

Email: kaewkwan@econ.tu.ac.th

Group Line:

Section 046402:

Name: Ajarn Weerawat Phattarasukkumjorn

Office Hours: Appointment by email

Email: weerawat@econ.tu.ac.th

Group Line:

Main Text:

1. ** Gujarati, D.N., and D.C. Porter, Basic Econometrics. 5th ed., N.Y., McGraw-Hill, 2009.

2. **Wooldridge, J. M. Introductory Econometrics: A Modern Approach. 6th ed. Thompson: South-Western, 2016.

**Main Text

Recommended Texts & Materials

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.

Grading Criteria:

Homework Assignments and Quizzes	20 points
Class Attendances and participations	10 points
Midterm Exam	30 points
Final Exam	40 points

Expected Learning Outcomes:

1. Morality and Ethics

Applicability	Learning Goals
●	1.1 Students demonstrate integrity.
O	1.2 Students prioritize social and public benefits over personal ones.
●	1.3 Students are punctual and comply with the code of conduct of the institution and society at large.
O	1.4 Students are responsible and accountable to society, the nation, and the subject of economics.
O	1.5 Students realize the cultural and environmental value of the sustenainable society.

2. Knowledge

Applicability	Learning Goals
●	2.1 Students know and understand modern economics principles and theories, and are up to date with new developments.
●	2.2 Students know and understand Thai and global economic structure, and the importance of major international economic events.
●	2.3 Students know and understand instruments of economic analysis.
●	2.4 Students know and understand applied fields in economics, including monetary, public, international, business, natural resource and environmental, industrial, agricultural, cooperative, political, developmental, and entrepreneurial economics as well as agribusiness.
O	2.5 Students are informed about related fields including sociology, business administration, education, law policy, and science.

3. Intellectual Development

Applicability	Learning Goals
●	3.1 Students have developed individual critical thinking.
●	3.2 Students are sufficiently trained in research skills.
●	3.3 Students demonstrate an ability to analyze and synthesize data, as well as appropriately integrate economics concepts to understand causes of current economic problems in Thailand. Based on analsyis and synthesis, students demonstrate an ability to propose policy guidelines to resolve problems.

4. Interpersonal Skills and Responsibilities

Applicability	Learning Goals
●	4.1 Students are responsible for assigned tasks and work in groups effectively.
●	4.2 Students have problem-solving skills.
○	4.3 Students show leadership skills and team spirit.
●	4.4 Students are always improving themselves.
○	4.5 Students have good interpersonal skills, adapting and working under different conditions.

5. Quantitative Analysis, Communication and Information Technology

Applicability	Learning Goals
●	5.1 Students select and apply appropriate statistical and mathematical methods for data processing, interpretation, conclusions, and recommendations to resolve problems.
○	5.2 Students communicate effectively and select appropriate presentation methods.
●	5.3 Students use information and communication technologies appropriately to gather data as well as process, interpret, and present results.

Tentative Class Schedule:

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
- Test on individual regression coefficients
- Regression Through the Origin
- Data scaling on OLS statistics
- More on functional forms

(Wooldridge, ch. 2, ch. 6 (6.1 and 6.2)) or Gujarati, chs. 2 – 6)

==========MIDTERM EXAM: September 29, 2021, 15:00-17:00hrs.==========

Multiple Regression Analysis (Estimation)

- Motivation
- Model and assumptions
- Estimation of parameters and properties of estimators
- Meaning of partial regression coefficients
- Measuring goodness of fit: R2 and adjusted R2
- 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)

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)

Multicollinearity Problem

- Nature and Consequences of Multicollinearity
- Detecting Multicollinearity

(Wooldridge, ch. 3 (3.4) or Gujarati, ch. 10)

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)

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)

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)

==========FINAL EXAM: December 13, 2021 (9:00-11:30 hrs.) ==========

Remarks:

- Mid-Term Examination: Wednesday, September 29, 2021 (15:00-17:00 hrs.)
- Final Examination: Monday, December 13, 2021 (9:00-11:30 hrs.)