Course Outline

EE325 Introductory Econometrics (Section 046401)

Semester 1/2023 (August 15 - December 4, 2023)

Lecture Time: Tuesday, 09.00-12.00 hours

Lecture Venue: Room 303

Teaching Materials Platform: Google Classroom (Class code: **lmqm7dh**)

Instructor:

Name: Asst. Prof. Dr. Wanwiphang Manachotphong

Office Hours: By appointment

Email: wanwiphang@econ.tu.ac.th

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

Prerequisite: EE211 (or EE213), EE212 (or EE214), MA216 (or MA211) and ST216 (or ST211) (Credit will not be awarded to students who are taking or have completed EE425)

Course Description:

Applying statistical methods and economic theories to analyze economic data using simple and multiple regression. Topics also include dummy variables, multicollinearity, heteroscedasticity, autocorrelation, and specification error. This course focuses on how to choose the appropriate tool for an empirical study, with the emphasis placed on using some econometric software.

Course Objectives:

This class aims to equip students with a comprehensive understanding of useful econometrics concepts and methods. Through practical applications, students will develop statistical reasoning skills and gain proficiency in analyzing economic data using STATA. They will learn to interpret and evaluate regression results, and recognize the assumptions and limitations of econometrics models. Through in-class and take-home assignments, this class seeks to promote students' collaborative and independent learning skills.

Expected Learning Outcomes

1. Morality and Ethics EE325

Applicability	Expected Learning Outcomes	Evaluation Method
●	1. Students demonstrate integrity.	Class participation and exam
O	2. Students prioritize social and public benefits over personal ones.	Class participation
●	3. Students are punctual and comply with the code of conduct of the institution and society at large.	Class participation and exam
O	4. Students are responsible and accountable to society, the nation, and the subject of economics.	Class participation and exam
O	5. Students realize the cultural and environmental value of a sustainable society.	Class participation and exam

2. Knowledge

Applicability	Expected Learning Outcomes	**Evaluation Method**
●	1. Students know and understand modern economics principles and theories, and are up to date with new developments.	Class participation and exam
●	2. Students know and understand Thai and global economic structure and the importance of major international economic events.	Class participation and exam
●	3. Students know and understand the instruments of economic analysis.	Class participation and exam
●	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.	Class participation and exam
O	5. Students are informed about related fields including sociology, business administration, education, law policy, and science.	Class participation and exam

3. Intellectual Development

Applicability	Expected Learning Outcomes	**Evaluation Method**
●	1. Students have developed individual critical thinking.	Class participation and exam
●	2. Students are sufficiently trained in research skills.	Class participation and exam
●	3. Students demonstrate an ability to analyze and synthesize data, as well as	Class participation and exam

	appropriately integrate economics concepts to understand the causes of current economic problems in Thailand. Based on analysis and synthesis, students demonstrate an ability to propose policy guidelines to resolve problems.	

4. Interpersonal Skills and Responsibilities

Applicability	Expected Learning Outcomes	**Evaluation Method**
●	1. Students are responsible for assigned tasks and work in groups effectively.	Class participation and exam
●	2. Students have problem-solving skills.	Class participation and exam
O	3. Students show leadership skills and team spirit.	Class participation and exam
●	4. Students are always improving themselves.	Class participation and exam
O	5. Students have good interpersonal skills, adapt, and work under different conditions.	Class participation and exam

5. Quantitative Analysis, communication, and information technology

Applicability	Expected Learning Outcomes	**Evaluation Method**
●	1. Students select and apply appropriate statistical and mathematical methods for data processing, interpretation, conclusions, and recommendations to resolve problems.	Class participation and exam
O	2. Students communicate effectively and select appropriate presentation methods.	Class participation and exam
●	3. Students use information and communication technologies appropriately to gather data as well as process, interpret, and present results.	Class participation and exam

Remark: ● Primary expected outcome O Secondary expected

Main Text:

Wooldridge, J. M. ***Introductory Econometrics: A Modern Approach***. Thompson: South-Western.

Recommended Texts & Materials:

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

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

Grading Criteria:

Homework and Pop Quizzes	25%	
Midterm Exam	35%	**(Thursday, October 5, 2023; 12.00-14.00 hrs.)**
Final Exam	40%	**(Tuesday, December 19, 2023; 13.30-16.30 hrs.)**

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

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
- 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
  (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

<<<<<<<<< Midterm Exam >>>>>>>>>

- 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)

BACHELOR OF ECONOMICS
THAMMASAT UNIVERSITY

ACADEMIC CALENDAR & HOLIDAY
SEMESTER 1/2023

Semester 1/2023 (August 15 – December 4, 2023)	
the TU Office of the Registrar (TU REG) will process the registration (semester 1/2023) for all BE students who have completed the pre-registration via BE Portal.	July 17 – 20, 2023
Tuition Fee Payment Period (Via TU Greats App)	July 21 – August 11, 2023
Create Plan from Quota via TU Greats App (*ID.66)	August 1 - 9, 2023
Registration via TU Greats App (*ID.66)	August 10, 2023
Classes Begin	August 15, 2023
Add-drop period	August 15 – 28, 2023 *(from 9.00 AM of August 15 to 10.30 PM of August 28)*
Tuition Fee Payment Period (Via TU Greats App)	August 15 – 29, 2023 *(9 AM - 10.30 PM)*
Mid-term Examination Period	October 1 – 7, 2023
*H.M. King Bhumibol Adulyadej The Great Memorial Day**	*October 13, 2023*
*King Chulalongkorn's Day**	*October 23, 2023*
Withdrawal period with "W" on record	September 4 – October 22, 2023 *(from 9.00 AM of September 4 to 10.30 PM of October 22)*
Special Withdrawal with "w" on record	October 24 – November 20, 2023
Last day of class for Semester 1/2023	December 4, 2023
Final exam period	December 12 – 23, 2023
*H.M. King Bhumibol Adulyadej The Great's Birthday**	*December 5, 2023*
*Constitution Day**	*December 10, 2023*
*Substitution for Constitution Day**	*December 11, 2023*
Submitting Forms for Degree Conferral	August 15 – 28, 2023

Remark * Holiday, No classes during this period
Updated: July 24, 2023