BACHELOR OF ECONOMICS
THAMMASAT UNIVERSITY

Course Outline

EE325 Introductory Econometrics (Sec.046401)

Semester 2/2022 (January 9th – May 6th, 2023)

Number of Credit: 3 credits

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 the simple and multiple regression. Topics also include dummy variable, 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 softwares.

Course Objectives:

Class Time and Logistic

Class day: Tuesday & Thursday

Class time: 11.00 – 12.30 hrs.

Venue: Room 201, Faculty of Economics

Teaching Materials Platform: Google Classroom (class code uejo5sp)

Invitation link: https://classroom.google.com/c/NTgxMjYyMTE1OTc4?cjc=uejo5sp

Instructor:

Name: Asst. Prof. Dr. Wanwiphang Manachotphong

Office Hours: By appointment

Email: wanwiphang@econ.tu.ac.th

Expected Learning Outcomes

1. Morality and Ethics EE325

Applicability	Expected Learning Outcomes	Evaluation Method
●	1. Students demonstrate integrity.	Class participation and exam
○	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
○	4. Students are responsible and accountable to society, the nation, and the subject of economics.	Class participation and exam
○	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
○	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 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.	Class participation and exam

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
○	3. Students show leadership skills and team spirit.	Class participation and exam
●	4. Students are always improving themselves.	Class participation and exam
○	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
○	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 ○ 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	20%	
Midterm Exam	35%	**(Tuesday, February 28, 2023; 12.00 - 14.00 hrs.)**
Final Exam	45%	**(Saturday, May 13, 2023; 09.00 - 12.00 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
- 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)

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ACADEMIC CALENDAR & HOLIDAY
SEMESTER 2/2022

Semester 2/2022 (January 9 - May 6, 2023)	
Registration at REG TU (*ID.62-65)	November 22 – 25, 2022
Tuition Fee Payment Period (Via TU Greats App)	November 27, 2022 – January 7, 2023
Classes Begin	January 9, 2023
Add-drop period	January 9 - 22, 2023 *(from 9.00 AM of January 9 to 10.30 PM of January 22)*
Tuition Fee Payment Period (Via TU Greats App)	January 9 - 23, 2023 *(9 AM - 10.30 PM)*
Mid-term Examination Period	February 27 - 28 to March 4, 2023
*Makha Bucha Day**	*March 6, 2023*
Withdrawal period with "W" on record	January 25 – March 19, 2023 *(from 9.00 AM of* January 25 *to 10.30 PM of* March 19*)*
*Chakri Memorial Day**	*April 6, 2023*
*Songkran Festival Day**	*April 10 - 16, 2023*
*Coronation Day**	*May 4, 2023*
Last day of class for Semester 2/2022	May 6, 2023
Final exam period	May 8 – 22, 2023
*Royal Ploughing Ceremony Day**	*To be announced*
Submitting Forms for Degree Conferral	January 9 - 22, 2023

Remark * Holiday, No classes during this period