Course Outline

EE325 Introductory Econometrics (Section 046401)

Semester 2/2025 (January 5 – May 2, 2026)

Lecture Time: Tuessday, 09.00-12.00

Lecture Venue: Faculty of Economics, **Room 304**

Teaching Materials Platform: Google classroom class code: **TBA**

Instructor: **Assoc. Prof. Phatta Kirdruang, PhD.**

Office: Room 15, 4th Floor, 60th Anniversary Building

Office Hours: By appointment.

Email: phatta@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 variable, multicollinearity, heteroscedasticity, autocorrelation, and specification error. This course focuses on how to choose the appropriate tool for empirical study, with the emphasis placed on using some econometric software.

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.

Expected Learning Outcomes

1. Morality and Ethics EE325

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

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.	Assignments, Quizzes, Class exercises, Group Project, and Exams.
✎	2. Students know and understand Thai and global economic structure and the importance of major international economic events.	Assignments, Class exercises, Group Project, and Exams.
✎	3. Students know and understand the instruments of economic analysis.	Assignments, Quizzes, Group Project, and Exams.
✎	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.	Assignments, Group Project, and Exams.
□	5. Students are informed about related fields including sociology, business administration, education, law policy, and science.	Assignments and Exams.

3. Intellectual Development

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

	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.	Assignments, Class exercises and Exams.
✎	2. Students have problem-solving skills.	Assignments
▯	3. Students show leadership skills and team spirit.	Assignments
✎	4. Students are always improving themselves.	Assignments, Quizzes, Class exercises, and Exams.
▯	5. Students have good interpersonal skills, adapt, and work under different conditions.	Assignments

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.	Assignments, Class exercises, and Exams.
▯	2. Students communicate effectively and select appropriate presentation methods.	Assignments
✎	3. Students use information and communication technologies appropriately to gather data as well as process, interpret, and present results.	Assignments

Remark: ✎ Primary expected outcome ▯ Secondary expected

Main Text:

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

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

Recommended Texts & Materials:

Greene, W.H. (2012). ***Econometric Analysis***. 7th ed., Upper Saddle River, NJ: Prentice Hall.

Griffiths, W.E., Hill, R.C., and Judge, G.G. (2011). ***Principles of Econometrics***, John Willey & Sons.

Angrist, J.D. and Pischke, J-S. (2009). ***Mostly Harmless Econometrics: An Empiricist's Companion***, Princton University Press.

Stock, J.H., & Watson, M.W. (2007). ***Introduction to Econometrics***, 2nd ed., Boston: Pearson Addison Wesley.

Johnston, J., & DiNardo, J. (1997). ***Econometric Methods***. 4th ed. Singapore: McGraw-Hill.

Grading Criteria:

Homework and Assignments	10%
Class Attendances, Quizzes & Participation	15%
Midterm Exam	35%
Final Exam	40%

Tentative Class Schedule:

Session	Lecture	Topic	Reading
Introduction	**1 lecture (Jan 6)**	• What is econometrics? • Methodology of econometrics • Types of economic data	Wooldridge, Ch.1 *or* Gujarati, Ch. 1
Review of Some Statistical Concepts	**1 lecture (Jan 13)**	• 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	**5 lectures (Jan 20, 27, Feb 3, 10, 17)**	• Principle, assumptions and derivation of ordinary least squares (OLS) estimators • Properties of OLS estimators • Statistical inference • Prediction • Regression Through the Origin • Data scaling on OLS statistics • More on functional forms	Wooldridge, Ch. 2 *or* Gujarati, Ch. 2 – 6 Wooldridge, ch. 6 (6.1 & 6.2)
MIDTERM EXAM (Thursday February 26, 2026: 12-14 hrs.)			
Multiple Regression Analysis (Estimation)	**1 lecture (Mar 3)**	• 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 (Optional)	Wooldridge, Ch. 3 *or* Gujarati, Ch. 7, Appendix B, C Note: Make-up class for March 3 (Makha Bucha Day) via Zoom

Multiple Regression Analysis (Inference)	**2 lectures (Mar 10, 17)**	• 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	**0.5 Lecture (Mar 24)**	• 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	**0.5 Lecture (Mar 24)**	• Nature and Consequences of Multicollinearity • Detecting Multicollinearity •	Wooldridge, Ch. 3 (3.4) *or* Gujarati, Ch. 10
Heteroscedasticity Problem	**1 Lecture (March 31)**	• Nature and Consequences of heteroscedasticity for OLS • Testing for heteroscedasticity • Remedial measures (weighted least squares estimation)	Wooldridge, Ch. 8; Gujarati, Ch. 11
Autocorrelation Problem	**1 Lecture (April 7)**	• Nature and Consequences of Autocorrelation, Serial Correlation • Testing for Autocorrelation • Remedial measures	Wooldridge, Ch. 12 (12.1-12.3); Gujarati, Ch. 12
Specification Errors and Data Problems	**1 Lecture (April 21)**	• Type of specification errors • Consequences of specification error • Tests of specification error • Errors of measurement • IV (If time permits)	Wooldridge Ch. 9; Gujarati, Ch. 13
Extension: Logit Model	**1 lecture (April 28)**	• Linear Probability Model • Maximum likelihood estimation	
Final Exam (Thursday May 14, 2026: 9-12 hrs.)			

*Remark: Class schedule may be adjusted during the course as needed.

BACHELOR OF ECONOMICS
THAMMASAT UNIVERSITY

ACADEMIC CALENDAR & HOLIDAY
SEMESTER 2/2025

Semester 2/2025 (January 5 - May 2, 2026)	
Enrollment by import quota (Confirm quota Via REG TU) (*ID.65 – 68)	December 1 – 4, 2025
Tuition Fee Payment Period (Via TU Greats App) (*ID.65 – 67)	December 1, 2025 – January 2, 2026
Classes Begin	January 5, 2026
Add-drop period (Via REG TU) *(All *ID)*	January 5 – 18, 2026 *(from 9.00 AM of January 5 to 10.30 PM of January 18)*
Tuition Fee Payment Period (Via TU Greats App) (For Students who add-drop courses) *(All *ID)*	January 5 – 19, 2026 *(from 9.00 AM of January 5 to 10.30 PM of January 19)*
Withdrawal period with "W" on record	January 19 – March 15, 2026 *(from 9.00 AM of* January 19 *to 10.30 PM of* March 15*)*
Mid-term Examination Period	February 22 – 28, 2026
*Makha Bucha Day **	*March 3, 2026*
Special Withdrawal with "W" on record	March 16 – April 20, 2026
*King Rama I Memorial and Chakri Day**	April 6, 2026
*Songkran Festival Day**	April 13 – 18, 2026
Last day of class for Semester 2/2025	May 2, 2026
*Royal Ploughing Ceremony**	May 11, 2026
Final exam period	May 5 – 19, 2026
Submitting Forms for Degree Conferral (ID.64-65)	January 5 – 18, 2026

Remark * Holiday, No classes during this period
Updated: October 22, 2025