



Course Outline

EE325 Introductory Econometrics (Section 04640)

Semester 2/2024 (January 20 – May 14, 2025)

Lecture Time: Tuesday, 09.00-12.00

Lecture Venue: Room 101

Teaching Materials Platform:

Google Classroom: <https://classroom.google.com/c/NzQ0MDg1NDk0NzE5?cjc=7p4h5yn>

Instructor: Assist. Prof. Theepakorn Jithitikulchai, PhD.

Office Hours: By appointment, preferably Tuesday 13:00 – 15:00

Email: theepakorn@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, Workshops, and Exams.
○	2. Students prioritize social and public benefits over personal ones.	Assignments, Workshops, and Group Project.
●	3. Students are punctual and comply with the code of conduct of the institution and society at large.	Assignments, Class Attendances.
○	4. Students are responsible and accountable to society, the nation, and the subject of economics.	Assignments, Workshops, and Group Project.
○	5. Students realize the cultural and environmental value of a sustainable society.	Assignments and Group Project.

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

3. Intellectual Development

Applicability	Expected Learning Outcomes	Evaluation Method
●	1. Students have developed individual critical thinking.	Assignments and Group Project.
●	2. Students are sufficiently trained in research skills.	Assignments, Workshops, Group Project, and Exams.
●	3. Students demonstrate an ability to analyze and synthesize data, as well as	Assignments, Workshops, Group Project, 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.	
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4. Interpersonal Skills and Responsibilities

Applicability	Expected Learning Outcomes	Evaluation Method
●	1. Students are responsible for assigned tasks and work in groups effectively.	Assignments, Workshops, Group Project, and Exams.
●	2. Students have problem-solving skills.	Group Project
○	3. Students show leadership skills and team spirit.	Group Project
●	4. Students are always improving themselves.	Assignments, Workshops, Group Project, and Exams.
○	5. Students have good interpersonal skills, adapt, and work under different conditions.	Group Project

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, Workshops, Group Project, and Exams.
○	2. Students communicate effectively and select appropriate presentation methods.	Group Project
●	3. Students use information and communication technologies appropriately to gather data as well as process, interpret, and present results.	Group Project

Remark: ● Primary expected outcome ○ Secondary expected

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

Recommended Texts & Materials:

Berndt, E.R. (1991). *The Practice of Econometrics: Classic and Contemporary*. New York: Addison-Wesley Publishing. (Chapter 2)

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

Heij, C., de Boer, P., Franses, H.P., Kloek, T., & van Dijk, K.H. (2004). *Econometric Methods with Applications in Business and Economics*. New York, NY: Oxford 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.

Ruud, P.A. (2000). An Introduction to Classical Econometric Theory. New York: Oxford University Press.

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

Other teaching materials:

Teaching materials will be uploaded on Google Classroom prior to the class.

Grading Criteria:

Homework Assignments	15 points
Class Attendances & In-class Workshop	15 points
Group Projects	10 points
Midterm Exam	25 points
Final Exam	35 points

Academic Honesty

You are expected to be honest in all your academic work. Copying is plagiarism and will be treated as an honor code violation. Potential sanctions include failure in the course and suspension from the university.

Tentative Class Schedule:

Introduction

- What is econometrics?
- Methodology of econometrics
- Types of economic data (Gujarati, Ch. 1)

Review of Some Statistical Concepts

- Random variables and distributions
- Expectation, variance, covariance and correlation
- Estimators and desirable properties of estimators (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
- Data scaling on OLS statistics
- More on functional forms (Gujarati, Ch. 2 – 6)

=====MIDTERM EXAM: **Thursday, March 13, 2025, 12.00-14.00** =====

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
(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
(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
(Gujarati, Ch. 15)

Multicollinearity Problem

- Nature and Consequences of Multicollinearity
- Detecting Multicollinearity
(Gujarati, Ch. 10)

Heteroscedasticity Problem

- Nature and Consequences of heteroscedasticity for OLS
- Testing for heteroscedasticity
- Remedial measures (weighted least squares estimation)
(Gujarati, Ch. 11)

Autocorrelation Problem

- Nature and Consequences of Autocorrelation, Serial Correlation
- Testing for Autocorrelation
- Remedial measures
(Gujarati, Ch. 12)

Specification Errors and Data Problems

- Type of specification errors
- Consequences of specification error
- Tests of specification error
- Errors of measurement
(Gujarati, Ch. 13)

Remarks:

- ◆ **Mid-Term Examination: Thursday, March 13, 2025, 12.00-14.00**
- ◆ **Final Examination: Thursday, May 28, 2025, 13.30-16.30**

ACADEMIC CALENDAR & HOLIDAY SEMESTER 2/2024

Semester 2/2024 (January 20 – May 14, 2025)	
Create Plan from Quota via TU Greats App <i>(*ID.64 – 67)</i>	December 13 – 20, 2024
Registration via TU Greats App <i>(*ID.64 – 67)</i>	December 16 – 20, 2024
Tuition Fee Payment Period (Via TU Greats App) <i>(*ID.64 – 67)</i>	December 16, 2024 – January 17, 2025
Classes Begin	January 20, 2025
Add-drop period	January 20 – February 2, 2025 <i>(from 9.00 AM of January 20 to 10.30 PM of February 2).</i>
Tuition Fee Payment Period (Via TU Greats App)	January 20 – February 3, 2025 <i>(9 AM - 10.30 PM)</i>
<i>Makha Bucha Day *</i>	<i>February 12, 2025</i>
Mid-term Examination Period	March 9 – 16, 2025
Withdrawal period with “W” on record	February 3 – March 30, 2025 <i>(from 9.00 AM of February 3 to 10.30 PM of March 30).</i>
Special Withdrawal with “w” on record	March 31 – 2 May, 2025
<i>Substitution for Chakri Memorial Day*</i>	<i>April 7, 2025</i>
<i>Songkran Festival Day*</i>	<i>April 13 – 16, 2025</i>
Last day of class for Semester 2/2024	May 14, 2025
<i>Substitution for Visakha Bucha Day*</i>	<i>May 12, 2025</i>
Final exam period	May 16 - 30, 2025
Submitting Forms for Degree Conferral	January 20 – February 2, 2025

Remark * Holiday, No classes during this period

Updated: October 17, 2024