暨南大學
JINAN UNIVERSITY

0201E301
Introduction to Econometrics

Instructor: TBA

Email: TBA

Time: December 14, 2026 - January 15, 2027

Office Hours: By Appointment

Contact Hours: 60 (50 minutes each)

Credits: 4

Course Description

This course is an introduction to applied methods for analyzing economic and financial data. Areas of focus will include cross section data, time series data, regression analysis, hypothesis testing, and applied topics in economics with an emphasis on applications.

Prerequisites

0201E101 Microeconomics, 0201E102 Macroeconomics, 0701S201 Introduction to Statistics and 0701M110 Calculus I

Course Outline

Please note that the outline is meant to give an overview of the major concepts of this course. Changes may occur in this outline as needed to aid in the student's development.

Module 1: Foundations of Econometrics and Review of Statistics

- **Topic:** Introduction to causal inference; Review of probability spaces, random variables, and distributions; Properties of estimators (unbiasedness, consistency); Hypothesis testing (t-tests, p-values) for the population mean; Confidence intervals.
- **Quiz 1**

Module 2: Linear Regression with One Regressor: Estimation and Inference

- **Topic:** Intuition and derivation of OLS; Interpretation of coefficients; Measures of fit (R^2 and SER); The Least Squares Assumptions; The Gauss-Markov Theorem and the **BLUE** property.
- **Quiz 2**
- **Assignment 1**

Module 3: Multiple Regression: Basics, Inference, and Hypothesis Testing

- **Topic:** Causes and consequences of Omitted Variable Bias (OVB); OLS estimation of the multiple regression model; Adjusted R^2; Hypothesis testing for single coefficients; Joint hypothesis testing (the F-statistic); Perfect and imperfect multicollinearity
- **Quiz 3**

Module 4: Nonlinear Regression Functions

- **Topic:** Polynomial models; Logarithmic transformations (Log-Log, Log-Level, Level-Log); Models with interaction terms (Continuous-Binary, Binary-Binary).
- **Quiz 4**
- **Assignment 2**
- **Midterm Exam**

Module 5: Assessing Studies and Regression with Panel Data

- **Topic:** Internal and external validity; Five major threats to internal validity (e.g., simultaneous causality, measurement error); Introduction to Panel Data: Fixed effects, entity and time effects, and "before and after" comparisons.
- **Quiz 5**
- **Assignment 3**

Module 6: Binary Dependent Variables

- **Topic:** Limitations of the Linear Probability Model (LPM); Intuition and estimation of Probit and Logit models; Maximum Likelihood Estimation (MLE).
- **Quiz 6**

Module 7: Instrumental Variables (IV) Regression

- **Topic:** Endogeneity and the IV solution; Identification; Two-Stage Least Squares (TSLS) estimation; Instrument relevance and exogeneity.
- **Quiz 7**

Module 8: Time Series Regression and Forecasting

- **Topic:** Characteristics of time series data; Stationarity; Autoregressive (AR) and Autoregressive Distributed Lag (ADL) models; Lag selection.
- **Quiz 8**

Module 9: Advanced Topics in Time Series and Macro-Econometrics

- **Topic:** Dynamic Causal Effects; Vector Autoregressions (VARs); Cointegration and Non-stationarity in macro data.
- **Quiz 9**

Module 10: Final Assessment and Empirical Project

- **Topic:** Comprehensive course review; Best practices in empirical research; Interpreting complex regression tables.
- **Quiz 10**
- **Assignment 4 (Final Project)**
- **Final Exam**

Grading Policy

Quizzes	20%
Assignments	40%
Exams	40%
Total	**100%**

Grading Scale

The instructor will use the grading system as applied by JNU:

Definition	Letter Grade	Score
Excellent	A	90~100
Good	B	80~89
Satisfactory	C	70~79
Poor	D	60~69
Failed	E	Below 60

Academic Integrity

As members of the Jinan University academic community, students are expected to be honest in all of their academic coursework and activities. Academic dishonesty, includes (but is not limited to) cheating on assignments or examinations; plagiarizing, i.e., misrepresenting as one's own work any work done by another; submitting the same paper, or a substantially similar paper, to meet the requirements of more than

one course without the approval and consent of the instructors concerned; or sabotaging other students' work within these general definitions. Instructors, however, determine what constitutes academic misconduct in the courses they teach. Students found guilty of academic misconduct in any portion of the academic work face penalties that range from the lowering of their course grade to awarding a grade of E for the entire course.