# Introductory Econometrics I
Spring, 2024 (Week 1-16)

**Time and location:**
1. Mondays, 9:50–12:15, Teaching Building #2, 401
2. Mondays,19:20–21:45, Teaching Building #2, 401

*You only need to attend one of the two parallel sessions.

**Instructors:**
LIU Chenyuan (before the Midterm)
Office: Lihua Building B629
Phone: (010) 62781005
E-mails: liuchy3@sem.tsinghua.edu.cn
Office hours: Thursday 4-5 pm

FENG Yingjie (after the Midterm)
Office: Lihua Building B628
Phone: (010) 62789957
E-mails: fengyj@sem.tsinghua.edu.cn
Office hours: Thursday 4-5pm

**Teaching Assistants: (listed in the order of problem sets grading)**
LIN Pengsheng, lps22@mails.tsinghua.edu.cn
LIU Jiayue, jy-liu21@mails.tsinghua.edu.cn
LOU Jing, louj21@mails.tsinghua.edu.cn
PENG Lu, pengl.18@sem.tsinghua.edu.cn
TA office hours: Thursday before the homework due date, 2-3 pm, Lihua Building B109

**Course Description**:
This course is designed for undergraduate students in economics, finance, management, and related fields who want to take an introductory-level course in econometrics. The course lays down the foundation for quantitative analysis in economics, finance and other social sciences. It offers a systematic training in modern econometrics techniques, including estimation and inference in the classical regression framework, estimation and inference when the classical assumptions are violated (heteroskedasticity, serial correlation, endogeneity, etc.), and nonlinear models (probit and logit). Topics on stationary and non-stationary time series analysis will be covered in a subsequent course (Introductory Econometrics II). This course also provides an introduction to the statistical software Stata.

**Prerequisite**: Undergraduate-level probability theory and mathematical statistics

**Textbooks and Suggested Reading**:
1. Lecture notes, available online.
2. *Introductory Econometrics: A Modern Approach*, by Jeffrey M. Wooldridge, 6th or 7th edition.
3. *Mostly Harmless Econometrics: An Empiricist's Companion* (**optional**), by Josh D. Angrist and Jörn-Steffen Pischke.

**Statistical Software:** STATA (**recommended but not required**)
References: 1. *STATA Base Reference Manual* (available on the Stata website)
2. *A Gentle Introduction to Stata*, by Alan C. Acock.

**Course Website:** Web-Learning System on Info
Please check the Web-Learning (网络学堂) on a regular basis. All course-related information and materials, including lecture notes, assignments, and references, are available there. Please make sure your personal information there is updated and you enable course notification.

**Assessment:**
1. Homework (4 problem sets): 20%
   a. Late submission policy:

| Submitted after the deadline: | Final mark |
| --- | --- |
| Up to 24 hours late | 60% × the mark awarded |
| Over 24 hours late and up to June 10 | 20% × the mark awarded |
| After June 10 | 0 |

   b. The coursework contains some empirical analysis. You can use whatever language you prefer (e.g., Stata, R, etc.). Original codes and complete results must be provided.
   c. We encourage you to discuss the homework with classmates and TAs. However, please hand in your own work.
2. Midterm exam: 40% (in class). Date and time: April 14 (Sunday) at 7 pm.
3. Final exam: 40%. Date and time: June 20 (Thursday), 14:30-16:30.

**Content Outline\*:**

| Week | Date | Content | Reading (Wooldridge) |
| --- | --- | --- | --- |
| 1 | Feb 26 | Introduction | Chapter 1 |
| 2 | Mar 4 | Simple Regression | Chapter 2 |
| 3 | Mar 11 | Simple Regression | Chapter 2 |

| Week | Date | Content | Reading (Wooldridge) |
|---|---|---|---|
| | Mar 14 | TA office hours | |
| | Mar 17 | Problem Set 1 due at 11:59pm | |
| 4 | Mar 18 | Multiple Regression: Finite Sample Property I | Chapter 3 |
| 5 | Mar 25 | Multiple Regression: Finite Sample Property I | Chapter 3 |
| 6 | Apr 1 | Multiple Regression: Finite Sample Property II | Chapter 4 |
| | Apr 4 | TA office hours | |
| | Apr 7 | Problem Set 2 due at 11:59pm | |
| 7 | Apr 8 | Multiple Regression: Large Sample Property | Chapter 5 |
| 8 | Apr 14 | Midterm Exam | |
| | Apr 15 | No Class | |
| 9 | Apr 22 | OLS: Further Issues | Chapter 6 |
| 10 | Apr 29 | OLS: Dummy Variables | Chapter 7 |
| 11 | May 6 | OLS and Program Evaluation | Chapter 2.7, 3.7e, 7.6 |
| | May 9 | TA office hours | |
| | May 12 | Problem Set 3 due at 11:59pm | |
| 12 | May 13 | OLS Inference: Heteroskedasticity, Intra-cluster Correlation, Serial Correlation | Chapter 8, 12 |
| 13 | May 20 | Proxy Variables, Measurement Error | Chapter 9 |
| 14 | May 27 | Instrumental Variables | Chapter 15 |
| | May 30 | TA office hours | |
| | Jun 2 | Problem Set 4 due at 11:59pm | |
| 15 | Jun 3 | Limited Dependent Variables | Chapter 17 |
| 16 | Jun 10 | Holiday, no class | |

* Subject to changes.