

**ECO375: Introduction to Econometrics**  
**Fall, 2020 Online Class**  
**(Class Starts on Sep 9, 2020)**  
updated: 08/15/2020

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**INSTRUCTOR:** Jin Man Lee

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**COMMUNICATION:** The best way to reach me is to send email. Please use ECO375 as a prefix on the subject line, and that will get my attention immediately. If you don't receive my reply within 24 hours, please remind me again. Due to many email filters and mass email, your email might be lost. All office hours and appointment will be available via Zoom meeting. Make sure you have appropriate computer with internet connection.

**ZOOM OPEN OFFICE HOURS:** Every Thursday 3:30-4:30 PM. All Zoom meetings will be recorded and available for anyone who is not able to make to the office hour. Any suggested topics are welcome via email prior to the meeting. If anyone wants to have a personal office hour, please send me email to make a Zoom appointment.

### **COURSE OBJECTIVES**

This class is designed to concentrate the quantitative analysis using mathematics, statistics, and regression analysis. First, we will briefly discuss about statistical concepts related with population and samples, descriptive statistics, distributions, and inference and hypothesis tests. We will spend most of the quarter on regression analysis; identify when regression analysis is the appropriate tool, what regressions reveal (and what they don't), how regression analysis can be adapted to problems that initially looked impossible, and how to tell if regression analysis is misused. We will examine the assumptions underlying regression analysis and the consequences when these assumptions are violated. There will be two exams in class, homework on computer exercises using STATA. We will use current and historical data to analyze various economic and business situations. After midterm exam, we will use the Current Population Data by the Bureau of Labor and Statistics (BLS). You are required to use BLS data to work on your final project.

### **REQUIRED TEXTBOOK**

Jeffery Wooldridge, Introductory Econometrics: A Modern Approach, 5th or later Edition, South-Western, Cengage Learning.

### **SUPPLEMENTARY MATERIAL**

My lecture notes and videos will be available on D2L Wednesday at 10:00AM for each week. I will assign mandatory readings of academic articles or manuals. Most of the reading material will be available to download in PDF format from D2L.

### **SOFTWARE USED in CLASS (required for homework)**

This course will also use the statistical package, STATA. You have two options to use STATA for this class:

- DePaul offers the virtual computer labs via external cloud service. Depending upon your

internet connection speed and number of users, the service can be very slow or easily reset by the hosts. Make sure you have frequently before you lose your connection. The virtual PC is available from <https://depaul.apporto.com/>

- If anyone has internet connection issues, I strongly recommend to purchase your personal copy of STATA from <https://www.stata.com/order/new/edu/gradplans/course-pricing/>

## **GRADE**

Exam I (20%), Exam II (15%), Final Project (20%), Weekly Homework (45%)

Scale of grade: A: 93 or above, A-: 88-92.9, B+: 85-87.9, B: 80-84.9, B-: 77-79.9, C+: 75-76.9, C: 70-74.9, C-: 68-69.9, D+: 65-67.9, D: 60-64.9, F: Below 60

## **EXAMS AND FINAL PROJECT SCHEDULE**

- Exam I (WEEK 5)
- Exam II (WEEK 8)
- Final Project (Written report submission to D2L on November 24 (Tuesday) at 10:00 PM.)

## **WEEKLY ASSIGNMENTS**

- Weekly homework will be assigned and posted on D2L every Wednesday at 10:00AM. The weekly homework is due the following Tuesday at 10:00 PM.
- Most of homework requires to use STATA to analyze the data for each week.
- All assignments are to be prepared individually unless otherwise stated by me. You risk an academic integrity violation if submit the same work and answers with others. Group study is encouraged but not the submission of homework.
- No Late submission will be allowed. Only limited exception will be granted due to emergency and extraordinary circumstance proved by appropriate document.

**DISCUSSIONS in D2L** We will have weekly discussions in D2L. You can ask any questions related the material we covered in each week including homework. This is a great online-community space, so you are welcome to give answers or explanations to the questions. I will review the discussion board, and leave comments if needed.

## **ACADEMIC HONESTY**

Work done for this course must adhere to the University Academic Integrity Policy. Violations include but are not limited to the following categories: cheating; plagiarism; fabrication and academic misconduct.

- Cheating: any action that violates University norms or an instructor's guidelines for the preparation and submission of assignments. Such actions may include using or providing unauthorized assistance or materials on course assignments, or possessing unauthorized materials during an examination.

- **Plagiarism:** the representation of another's work as your own. You are to prepare your own homework assignments. Violations may result in the failure of the assignment, failure of the course, and/or additional disciplinary actions.
- **Misconduct:** This includes but is not limited to attempts to bribe an instructor for academic advantage; persistent hostile treatment of, or any act or threat of violence against, an instructor, advisor or other students. Violations may result in additional disciplinary actions by other university officials and possible civil or criminal prosecution.

You may review the Academic Integrity Policy in the Student Handbook or by visiting Academic Integrity at DePaul University (<http://academicintegrity.depaul.edu>)

**Student with Disability:** Students with Disability may register the The Productive Learning Strategies (PLuS) Program. You may request your exam schedule arrangement by requesting through the PLuS program. For more information on the PLuS program, you may visit <http://studentaffairs.depaul.edu/plus/> or call: 312-362-8000.

## **SUMMARY OF WEEKLY SCHEDULE**

Here is the schedule for each week

1. Wednesday 10:00 AM : New weekly material will be posted in D2L including lecture note and homework
2. Thursday 3:30 - 4:30 PM: Open Office Hour
3. Tuesday 10:00 PM : All Weekly Assignments Due

## TENTATIVE SCHEDULE OF TOPICS

(The instructor may change the order or contents by needs, any special material needs for class will be available on D2L)

- WEEK 1, Introduction to STATA and Statistics Review
  - Introduction to STATA
  - Statistics Review (Sampling Distribution and Statistical Inference)
- WEEK 2, Correlation to Causality and Simple Regression Model
  - Two variable Relationship
  - Simple Regression Analysis (CH 2)
- WEEK 3, Multiple Regression Analysis
  - Multiple Regression Model (CH3)
  - Estimation and Inference (CH4)
- WEEK 4, Specification of Regression Model
  - Irrelevant, Omitted Variables CH3)
  - Multicollinearity (CH3)
- WEEK 5, EXAM I (Ch 1-4)
  - Introduction to the Current Population Survey (CPS) Data
- WEEK 6, Further Topics on Multiple Regression
  - Functional Forms (CH 6)
  - Dummy Variables (CH 7)
- WEEK 7, Regression Diagnostic Tests
  - Heteroskedasticity (CH 8)
- WEEK 8, EXAM II (Ch 4,6,7,8)
  - Time Series Data (CH 10)
- WEEK 9, Binary Choice Regression Models
  - Linear Probability Model and Logistic Regression Models (CH 17)
- WEEK 10, Regression Analysis Project
  - Regression Model Design
  - Regression Project Proposal
  - Each group present the final project proposal via ZOOM (ppt slides required as Homework 10)
- FINAL PROJECT DUE  
Written report submission to D2L by **November 22(Tuesday) at 10:00 PM**