

Syllabus

BUAN/MECO 6312 - Applied Econometrics and Time Series Analysis

Fall 2023

Instructor: Quanquan Liu

Lecture Time and Location:

Monday 4:00pm-6:45pm at JSOM 1.110

Tuesday 7:00pm-9:45pm at JSOM 11.210

Thursday 4:00pm-6:45pm at JSOM 1.502

Office: JSOM 13.401

Office Hours: by appointment

Email: qx1220001@utdallas.edu

Teaching Assistant:

Office:

Office Hours:

Email:

Course Modality

This class is intended to follow in class (face to face) modality. However, class modality will follow UTD Covid-19 guidelines and all its changes that may occur during the semester regarding whether students need to attend classes on campus or can attend remotely either synchronously or asynchronously.

COVID-19 Guidelines and Resources

The information contained in the following link lists the University's COVID-19 resources for students and instructors of record.

Please see [UT Dallas Syllabus Policies and Procedures - The University of Texas at Dallas](#)

Course Description

The objective of this course is to provide a thorough introduction to the theory and application of contemporary econometric tools. Specifically, it teaches students to empirically estimate and interpret commonly used econometric techniques to analyze cross-sectional, time series and panel data sets. Emphasis will be placed on the following:

- Understanding theory through applications and problem solving rather than complex proofs
- Working as a learning community to improve statistical and econometric skills necessary in the study of business and economics

Course Objectives

Throughout this course you will hone your understanding of linear and non-linear regression as well as other forms of economic regression with different variables. After the successful completion of BUAN/MECO 6312, a typical student should be able to:

- Derive statistical parameters to estimate causal relationships
- Estimate statistical parameters of a regression analysis using the Stata software package
- Interpret results of regression analysis with different specifications
- Conduct empirical economic research using the knowledge and techniques of econometric models you have learned in this class

Prerequisites

Knowledge of basic statistics and econometrics and some familiarity with computer-based data analysis (OPRE 6301 or SYSM 6303 or FIN 6306).

Textbook and Materials

TEXTBOOK: “Introductory Econometrics: A Modern Approach” (5th Edition or newer, the chapters below follow the 7th Edition), by Jeffrey M. Wooldridge. 2016 Cengage Learning, Inc. ISBN: 978-1-337-55886-0.

Optional:

“Principles of Econometrics”, by R. Carter Hill, William E. Griffiths and Guay C. Lim.

“Mostly Harmless Econometrics: An Empiricist's Companion”, by Joshua D. Angrist and Jörn-Steffen Pischke.

Required Software:

We will use Stata.

Stata is NOT available at the computer lab, but it is available on the server. I will arrange remote access to the server to all of you, so that you will not have to purchase a license.

eLearning:

Lecture notes, assignment solutions, codes and any additional material will be posted on the eLearning website of this course. eLearning can be accessed via

<https://ets.utdallas.edu/elearning> using your NetID and password. If you are having difficulties accessing eLearning, please contact the eLearning Helpdesk via <https://ets.utdallas.edu/elearning/helpdesk>.

Grading

Your grade in this course will be determined by the following assignments:

- Class participation and In-class quizzes (5%)
- Assignments (2 assignments, 5% each)
- Midterm Exam (30%)
- Final Exam (35%) - The final exam is cumulative in that the material builds on each other.
- Group Project (20%, Proposal + Presentation + Final Paper)

1. **Class participation:** To get the most from this class, it is important that you come to class ready to join the discussion on the day's topic. When evaluating class participation, I keep the criteria as follows:
 - Attending class regularly;
 - Displaying positive behaviors such as active listening to the instructor and peers, asking insightful questions, responding to questions, synthesizing others' ideas, bringing appropriate real-life experiences, and disagreeing constructively.

Remember, if you miss a class meeting you are expected to obtain notes and other material on your own.

2. **In-class quizzes:** Occasionally, there will be quizzes given on class content. Quizzes ensure that you are prepared for class and are on track to pass exams. Make-up quizzes can be given only with Instructor's consent and can only receive at most 50% of the original points.
3. **Assignments:** IT skills for individual productivity will be a necessity for any business professionals in their careers. To help students master basic data analytics skills, there are TWO homework assignments. Those assignments will simulate real-life tasks and ask students to solve them by using the designated tools. Specific details for these assignments will be posted on eLearning.

These are individual assignments. Students are encouraged to work together on the problem sets but must turn in their own work. Each assignment has a specific time by which it must be completed. Early homework is accepted; Late submissions within 24 hours will receive 50% of the original points, late submissions within 48 hours will receive 25%, and so on.

4. **Exams:** There are two exams (see Course Schedule for details). Exams will combine multiple-choice and essay format questions.

The dates of the exams are **fixed**. Please plan ahead and make sure that you can attend as scheduled.

All exams are **closed book**. You may need a **calculator** and you are responsible for bringing this calculator to the exam. Calculators on phones, computers, or other electronic devices are not allowed. If you arrive at an exam without a calculator, one will not be provided for you and you may not use your phone.

Exams are mandatory and you are expected to make every effort to attend them. If you miss an exam, you must take the following three steps:

- 1) Contact me at least 24 hours before the exam. If I do not hear from you in that time, you will receive a zero for the exam.
- 2) Provide documentation of exigency.* I reserve the right to assign a grade of zero for the exam for reasons I deem less than exigent.
- 3) Student who misses the midterm could, at the instructor's discretion, be permitted to drop the midterm and have the final count as an additional 30% of the student's grade. Student who misses the final must take the make-up exam at a time of the instructor's choosing. If the student cannot make that time, he/she will receive a zero for the exam. The final exam is comprehensive.

* - Note that providing false or misleading documentation will result in a failing grade for the course, along with any other university penalties that accompany a violation of the Academic Integrity Policy.

5. **Group Project:** The class will have a group project. A group of **Eight** students can work together on the project. The detailed description for this project will be given later. All the groups must be formed before Midterm. Each group must have a leader who is responsible for submitting the proposal, slides, and final paper by the due date. No late submissions will be accepted.

A student's grade on group project will be subject to peer evaluations at the end of the semester. Suppose, for example, that your group's score on the project is 95% and you receive an average evaluation of 96% from your teammates and yourself. Then your overall score for the group project will be $95\% \times 96\% = 91.2\%$. Please refer to last page for a sample peer evaluation form.

In case a member does not perform to the team's expectation in group project by constantly missing group meetings, failing to provide requested information in a timely fashion, contributing work that is poorly done, or exhibiting other unprofessional behaviors, the other members may decide to drop him/her from the group. However, in the interest of fairness, the five-step procedure outlined below must be closely followed:

- 1) There needs to be a unanimous agreement among all other team members that the student's performance is unsatisfactory.
- 2) The concern must be conveyed to the person in writing and discussed with him/her in person. The written notice must be signed and dated by the rest of the group.
- 3) A copy of the above-mentioned notice has to be submitted to the instructor at the same time.
- 4) The student has one week of class time to improve his/her performance.
- 5) If no satisfactory improvement is made over the one-week period, then a final written notice of dropping the person as a member of the team will be signed and

dated by the other members and given to him/her. In the meanwhile, a copy of the document must be forwarded to the instructor.

If a student is dropped from a team and not accepted by another, then he/she must complete the remaining assignments on an individual basis or loses the points.

6. **Extra Credit:** No additional work for extra credit is possible in this class.

Letter Grade Distribution

Score	Letter Grade	Score	Letter Grade
90 and above	A	70 - 72.99	C
87 - 89.99	A-	67 - 69.99	C-
83 - 86.99	B+	63 - 66.99	D+
80 - 82.99	B	60 - 62.99	D
77 - 79.99	B-	59.99 and below	F
73 - 76.99	C+		

* - If you believe that your exam is incorrectly graded or that your grade is incorrectly posted, please contact me via e-mail (i.e., in writing) as soon as possible. You have 7 days after the grade has been posted to voice your concern. After 7 days have passed, your posted grade will be assumed to be correct and accurate.

Comet Creed

As a Comet, I pledge honesty, integrity, and service in all that I do.

Policies

Communication

E-mail is the best way to reach Prof. Liu. Any issues that require action **MUST** be handled by email so that there is a written record of need. Email is also recognized as an official mode of university correspondence; therefore, you are responsible for reading your email for university and course-related information and announcements. You are responsible for keeping the university informed about changes to your email address. You should check your email regularly and frequently to stay current with university-related communications, some of which may be time-critical.

Classroom Policy

Please turn off your mobile phones and other electronic devices to avoid disturbing. Please arrive on time and leave after class ends. Remember that your classroom citizenship will be considered in your in-class participation grades.

Class Participation

Regular class participation is expected regardless of course modality. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Class Materials

The instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course; however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student Accessibility accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

In-Class Recording

The instructor may record meetings of this course. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student Accessibility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student Accessibility accommodation. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Academic Support Resources

The information contained in the following link lists the University's academic support resources for all students.

Please go to [UT Dallas Syllabus Policies and Procedures - The University of Texas at Dallas](#) webpage for these policies.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to [UT Dallas Syllabus Policies and Procedures - The University of Texas at Dallas](#) webpage for these policies.

Schedule of Lectures and Readings

Course Topics: This course is broken into two main sections: Regression Analysis with Cross-Sectional Data and Regression Analysis with Time Series Data. The course is cumulative in that the material builds on each other. While students are expected to have seen some material introduced in this course in previous courses, this course focuses on mastery of econometric models and applications of econometric models to the study of business and economic events. If at any point you do not understand the material, you must seek additional help from the instructor, teaching assistant or a tutor as mastery of the material at each section is required to move on to the next section.

(Tentative) Course Schedule:

Week (Dates)	Content
Week 1 (Aug 21)	Syllabus Lecture 1. The Nature of Econometrics and Economic Data (Chapter 1)
Week 2 (Aug 28)	Lecture 2. The Simple Regression Model (Chapter 2)
Week 3 (Sep 4)	No class (Labor Day holiday)
Week 4 (Sep 11)	Lecture 3. Multiple Regression Analysis: Estimation (Chapter 3)
Week 5 (Sep 18)	Lecture 4. Multiple Regression Analysis: Inference (Chapter 4)
Week 6 (Sep 25)	Lecture 5. Multiple Regression Analysis: Further Issues (Chapter 6)
Week 7 (Oct 2)	Lecture 6. Multiple Regression Analysis with Qualitative Information (Chapter 7)
Week 8 (Oct 9)	Lecture 7. Basic Regression Analysis with Time Series Data (Chapter 10)

Week 9 (Oct 16)	MIDTERM – Oct 17 in Testing Center: Lectures 1 – 5
Week 10 (Oct 23)	Lecture 8. Further Issues in Using OLS with Time Series Data (Chapter 11)
Week 11 (Oct 30)	Lecture 9. Further Issues in Using OLS with Time Series Data (Chapter 11 cont.)
Week 12 (Nov 6)	Lecture 10. Difference-in-Differences Estimation and Fixed Effects Model (Chapter 13)
Week 13 (Nov 13)	Lecture 11. Instrumental Variables Estimation and Two Stage Least Squares (Chapter 15)
Week 14 (Nov 20)	No class (Fall break)
Week 15 (Nov 27)	FINAL – Nov 28 in Testing Center
Week 16 (Dec 4)	Group project presentation
Week 17 (Dec 11)	FINAL PAPER

** - The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor. Any changes will be communicated in class, via e-mail listserv, and posted on eLearning. It is the student's responsibility to stay informed of any changes.*

**** By enrolling in this course, you are agreeing to the terms outlined in this syllabus. ****

I look forward to a fun and productive semester with you all!

BUAN/MECO 6312

Peer Evaluation Form for Group Project

Instructions: The information submitted is final and cannot be changed. So please rate each of your fellow team members with respect to the criteria listed in the table below. Be honest, reasonable, and fair.

Class session: _____

Group number: ____

	Student 1	Student 2	Student 3	Student 4	Student 5	Student 6	Student 7	Yourself
Name/NetID								
Meeting attendance (15%)								
Punctuality of work (15%)								
Fair share of work (30%)								
Quality of work (40%)								
Total (100%)								

Name: _____

Signature: _____

Date: _____

Comments:
