

University of North Texas
Department of Economics

**ECON 4630/5630: Data Analysis in Economics (Fall
2026)**

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Prerequisite for this course:

- Prerequisite: Math 1100; Principles of Microeconomics (Econ 1100).

Course Objectives

This course introduces the core statistical tools used in economic data analysis and the evaluation of economic theories. It emphasizes a solid theoretical foundation, complemented by real-world examples to illustrate key concepts. Throughout the course, special emphasis will be placed on developing hands-on data analysis skills using Excel.

This course fulfills the CLASS requirement for Communication and Digital Skills. By the end of the course, students will be able to communicate effectively using a digital platform and demonstrate at least two of the following: Effectively communicate a central idea with clear and appropriate organization or structure; Develop content at an advanced level, supported by well-chosen and effective supporting materials; Engage in verbal and nonverbal communication that is appropriate for the audience and consistent with the conventions of the chosen medium (written, oral, or visual).

Course Material

- Textbook: *Business Statistics: For Contemporary Decision Making* (Wiley; 11 edition).

Lab Sessions

Students enrolled in ECON 4630: Data Analysis for Economics are required to attend the one-hour lab sessions taught by me. A seating chart will be distributed on the first day of class. The seat you choose on that day will remain your assigned seat for the rest of the semester.

Grades

Item	Date	Weight
Midterm	Week Eight	20%
Final	Week Sixteen	45%
Assignments	See below	15%
Lab Sessions	Attendance and homework problem sets	15%
Research Project	One week before the final	5%

Please Note: Exam dates are subject to change. If you miss the class in which an exam is announced or rescheduled, it is your responsibility to find out the updated date and time. All exams will be based on material covered in lectures and will include a combination of multiple-choice questions, short answers, and essay questions.

Your final letter grade will be based on the percentage of total points earned, according to the following scale: A 90% or above; B 80 – 89.99%; C 70 – 79.99%; D 60 – 69.99%; F Below 60%.

Assignments

There are two problem sets, which you are expected to complete and submit by the deadlines specified by the instructor.

Exam Policy

- 1.If you miss the final exam without a valid excuse, you will receive a zero. If you are unable to take the final due to a valid reason or an emergency, you must contact me as soon as possible.
- 2.I will only accept signed formal documents (e.g., a medical certificate) as valid proof of an excuse. Please note that it is your responsibility to provide the necessary documentation, and I strictly enforce this policy.
- 3.Calculator Policy: Students may use a calculator during exams; however, all calculators must have their memory cleared prior to the exam. Stored notes, formulas, or programs are not permitted. Failure to comply may result in the calculator being disallowed.

Attendance and Participation

1. While attendance is not mandatory, it is strongly encouraged, as lectures may cover material beyond the scope of the textbook when necessary. You are also responsible for all announcements made in class, and sessions often involve working through problems. If you are absent, it is your responsibility to check with classmates to catch up on any missed content.
2. Active class participation is encouraged and may positively influence your final grade if you are on the borderline between two letter grades. Conversely, disruptions or breaches of classroom etiquette may negatively affect your grade in such borderline

cases.

3. If you believe you may require accommodation due to the impact of a disability, please contact me as soon as possible to arrange an appointment. During the meeting, we can discuss the course format, anticipate your needs, and explore appropriate adaptations to support your learning.

Course Schedule

Week	Date	Course outline & Assignments
1	Week One	Introduction, Overview of Data & Software, and Normal Distribution
2	Week Two	Sampling Methods and Sampling Error
3	Week Three	Sampling Distribution and Confidence Intervals
4	Week Four	Estimating Sample Size and Introduction to Hypothesis Testing
5	Week Five	Hypothesis Testing II (One-sample tests)
6	Week Six	Hypothesis Testing III (Two-sample tests)
7	Week Seven	Review for Midterm Exam
8	Week Eight	<i>Midterm Exam</i>
9	Week Nine	Simple Linear Regression Analysis
10	Week Ten	Simple Linear Regression Analysis (continued)
11	Week Eleven	Multiple Regression Models
12	Week Twelve	Multiple Regression Models (continued)
13	Week Thirteen	Introduction to Time Series and Forecasting
14	Week Fourteen	Autocorrelation and Autoregression
15	Week Fifteen	Review for Final Exam
16	Week Sixteen	<i>Final Exam</i>

Research Project

Due Date: right before the final exam

For the final project, you will choose a topic of personal interest related to economics and collect relevant data. Your dataset should include one dependent variable and at least two explanatory variables, one of which must be continuous, and the other may be a dummy variable. You may use secondary data sources, such as published books or statistical databases, or collect your own primary data. Examples include, but are not limited to:

- Unemployment rate as a function of inflation and a recession indicator (dummy variable)
- Household consumption as a function of disposable income and home ownership status (dummy variable)
- GDP growth as a function of government spending and whether an election year occurred (dummy variable)

It is recommended that you choose a topic that you find interesting and discuss your chosen topic with me if you have any concerns. Your task is to analyze your data using multiple regression analysis. In particular, the following are expected:

- a. A brief paragraph motivating your research (i.e., why you are interested in the research question).
- b. A description of your variables and their sources. Make sure to specify which is the dependent variable and which are the explanatory variables. Include a table of summary statistics and discuss the statistics in the table.
- c. A set of hypotheses for each explanatory variable that reflects how you think each is related to the dependent variable.
- d. Regression output from Excel.
- e. A careful interpretation of the estimated coefficients on your explanatory variables.
- f. A careful explanation (by referring to hypothesis tests) of whether or not the estimated coefficients are statistically significant.
- g. A brief discussion of your R^2 and its meaning.
- h. A paragraph summarizing your findings.

NOTE: Please email your paper at Guohua.feng@unt.edu right before the final exam.

Cheating and Plagiarism

The UNT Department of Economics adheres to the University's Policy on Cheating and Plagiarism. To view the complete policy, go to ww.vpaa.unt.edu

Cheating: The use of unauthorized assistance in an academic exercise, including but not limited to:

1. use of any unauthorized assistance to take exams, tests, quizzes or other assessments.
2. dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems or carrying out other assignments.
3. acquisition, without permission, of tests, notes or other academic materials belonging to a faculty or staff member of the University.
4. dual submission of a paper or project, or re-submission of a paper or project to a different class without express permission from the instructor.
5. any other act designed to give a student an unfair advantage on an academic assignment.

Plagiarism: Use of another's thoughts or words without proper attribution in any academic exercise, regardless of the student's intent, including but not limited to:

1. the knowing or negligent use by paraphrasing or direct quotation of the published or unpublished work of another person without full and clear acknowledgement or citation.
2. the knowing or negligent unacknowledged use of materials prepared by another person or by an agency engaged in selling term papers or other academic materials.

Disability Accommodation

If you have a disability for which you will require accommodation under the terms of the Americans with Disabilities Act or Section 504 of the Rehabilitation Act of 1973, please discuss your needs with me after class or at office hours.

The Economics Department cooperates with the Office of Disability Accommodation (ODA) to make reasonable accommodations for qualified students with disabilities. If you have not registered with ODA, we encourage you to do so. Please present your written accommodation request on or before the 4th class day.