

ECON 249: Statistics

Section 05

College of the Holy Cross

Fall 2026

Professor

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Office hours: T/TH: 1:00–3:00 p.m; F: 9 am to 11 am (Stein 456A)

Class Meetings

T/TH: 11:00 a.m –12:15 p.m. (Stein 302)

Course Description and Objectives

This course introduces the fundamental tools of probability and statistics used to organize, summarize, and draw conclusions from data. We will begin by describing and visualizing data, then develop the foundations of probability, random variables, and sampling before turning to statistical inference, including confidence intervals, hypothesis testing, and regression. Throughout the course, we will emphasize not only how to carry out statistical methods, but also how to choose, interpret, and communicate them appropriately, with applications drawn primarily from economics and the social sciences. By the end of the course, students should be able to summarize data, quantify uncertainty, conduct and interpret basic statistical inference, and use regression to analyze relationships in data while recognizing the limits of the conclusions that statistical evidence can support.

Prerequisites

Economics 110 (Principles of Economics). Students should be comfortable with basic algebra, including solving equations and working with fractions, exponents, and graphs.

Course Materials

Textbook *OpenIntro Statistics*, 4th Edition (2019)

David M. Diez, Mine Çetinkaya-Rundel, and Christopher D. Barr.

Available for free online at <https://www.openintro.org/book/os/>.

Canvas Site I will share general course information, assignments, solutions, and other materials throughout the semester through Canvas. **Please check Canvas regularly!**

Technology Policy

Phones should be silent and unseen. You are expected to be an active participant in the classroom. If you are expecting an **urgent** message, an exception can be made, but please let me know beforehand to minimize disruption.

Grading

Your final grade in the class will be calculated according to the formula below.

15%	Homework	
15%	Exam I	<u>September 29th</u>
20%	Exam II	<u>November 12th</u>
25%	In-Class Assignments	
25%	Final Exam (Exam III)	<u>December 12th, 3 to 5:30 PM</u>

Grading Scale

		B+	86.5 – 89.4	C+	76.5 – 79.4	D+	66.5 – 69.4
A	93.5 – 100.0	B	82.5 – 86.4	C	72.5 – 76.4	D	59.5 – 66.4
A-	89.5 – 93.4	B-	79.5 – 82.4	C-	69.5 – 72.4	F	0.0 – 59.4

I will round final course averages to one decimal place.

Homework

Homework assignments will be posted on Canvas generally one week before they are due. Assignments must be submitted through Canvas as a single PDF by the start of class on the assigned due date. Please use the file specification Lastname_ECON249_HomeworkX (where X is the assignment number).

Homework will be graded for **completeness and a good-faith effort**. I will review your work to identify concepts that may require additional clarification and to provide you feedback and support. You may work alone or in a small group, but if you choose to work with classmates, *you must each* turn in an individual assignment that you write yourself and list the names of everyone with whom you worked at the top of the paper.

Homework will be graded on a scale between 0 and 3. 3 points will be awarded if every part of every problem is complete, 2 points awarded if more than half but less than all the problem set is completed, 1 point awarded if less than half of the problem set completed, 0 points if no

problem set is turned in.

Late homework will receive a one-point deduction immediately after the deadline and an additional one-point deduction for each subsequent 24-hour period. I cannot guarantee individualized feedback on late assignments.

In-Class Assignments

I expect you to attend all classes and be ready to participate by asking questions, offering answers, and joining discussions. Part of being prepared is completing the readings prior to the start of class. There will be **regular** short in-class activities including quizzes, and group problem-solving worksheets. These activities are designed to reinforce your understanding of the course material with support from your classmates and me, and they will guide you through questions similar to those on the exams. Each in-class activity will be equally weighted, and will be graded for completeness and correctness.

Your two lowest in-class assignment scores will automatically be dropped when calculating your final grade. If an extended or College-recognized absence causes you to miss more than two in-class assignments, please contact me to determine an appropriate alternative. In general in-class assignments cannot be made-up; however I reserve the right to assign make-up assignments for college excused absences.

Exams

There will be two midterm exams and one cumulative final exam. Students may not miss an exam without a valid excused absence. Make-up exams will generally not be given; in the case of an excused absence, the weight of the missed exam will be shifted to the remaining exams.

Course Policies

Class Recordings

Consistent with applicable federal and state law, this course may be video/audio recorded as an accommodation only with permission from the Office of Student Accessibility Services. Students are not permitted to record the contents of this class under any other circumstances.

Academic Integrity

Students should carefully read and abide by the College's [Academic Integrity Policy](#), which explains the standards, procedures, and possible sanctions pertaining to academic dishonesty. Potential violations include giving or receiving unauthorized help on an exam or assignment, copying another student's work, unauthorized collaboration, plagiarism, collusion, fabrication, and failure to cite sources properly. Suspected violations will be handled according to the procedures established in the College policy.

Generative Artificial Intelligence

Do not use AI to generate answers to assignments submitted for credit; if you use it in another way related to an assignment, disclose and cite that use. I grade homework on completeness because I wish to see your mistakes! Mistakes help identify where I can provide better support. AI tools may prove useful in generating additional practice problems, however, AI tools commonly make factual errors and incorrect calculations. You are responsible for all material that you submit.

Student Accommodations

Students with disabilities have the right to request reasonable accommodations through the [Office of Student Accessibility Services](#). Information about available accommodations and the request process is provided on the office's website. If you have already been approved for accommodations, please contact me and provide your current accommodation letter as soon as possible so that I can ensure your accommodations are implemented. All accommodations must be approved by the Office of Student Accessibility Services. If your circumstances change during the semester or you encounter unexpected barriers in the course, please contact the office and speak with me as soon as possible.

Re-grade Requests

You may resubmit an exam with an additional sheet explaining **in a few words** your concern. Re-grade requests will be accepted for one week after the exam is returned. I will re-score the entire exam, which may cause the score to go up or down. I will **scan all answer sheets you turn in**. Any modification to an original answer will result in sanctions for academic dishonesty. Out of fairness to all students, I will not "bump" final grades upon request.

Additional Information and Resources

Diversity, Equity, and Inclusion

I intend to create a learning environment that encourages diversity of thought and perspective while honoring the diverse experiences and identities of our class. Economics is among the least socioeconomically diverse fields in academia. The American Economic Association publishes annual reports on diversity within the field; the most recent report can be found [here](#). We all share responsibility for fostering an inclusive and respectful classroom and discipline. I expect all students to respect the perspectives, experiences, and identities of others. Like anyone, I am always learning, so please let me know if I, or someone else in the class, says or does something that makes you uncomfortable. I will also provide opportunities for anonymous feedback. Finally, if you ever feel that you are not qualified to be in this class, in the field, or at this College, please know that you belong here. Please feel free to come talk to me if you need help or support.

Confidentiality and mandatory reporting

As an instructor, one of my responsibilities is to help create a safe learning environment on our campus. I also have a mandatory reporting responsibility related to my role as your professor. It is my goal that you feel able to share information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. I will seek to keep the information you share private to the greatest extent possible. However, any information that you disclose that addresses sexual misconduct or relates to a prior suicide attempt or an intention to attempt suicide requires my sharing that information with those on campus who are able to provide you with necessary resources. Following the College's Sexual Misconduct Policy, I will share information about sexual misconduct with the College's Office of Title IX Initiatives. If you would like to talk to Title IX directly, they can be reached at 508-793-3336 or [email](#). For more information, please visit the [Sexual Respect and Title IX website](#). If you would like to discuss the matter confidentially, the following confidential resources are available to you: [Counseling Center](#), 508-793-3363; [Health Services](#), 508-793-2276; [Chaplains' Office](#), 508-793-2448.

Following the College's Suicide Protocol, if you disclose a prior suicide attempt or an intention or plan to attempt suicide, I will share that information with the Chair of our [Student CARE Team](#), who will engage in appropriate outreach.

Textbook Affordability

The textbook for this course is available for Free.

However, if you are unable to purchase course materials for other courses, please go to the [Financial Aid Office website](#) to contact a staff member, who will be happy to provide you with information and assistance.

Some eBooks may be available via the [Library website](#). The [Office of Multicultural Education Lending Library](#) rents books to students for free for the entire semester. To request a book, please visit their website.

Course Calendar (Subject to change)

Week	Date	Topic	Reading	Assignment
1	8/25	Introduction to Data	Ch. 1	HW0: Canvas
	8/27	Summarizing Data	Ch. 2	
2	9/1	Summarizing Data	Ch. 2	
	9/3	Probability	Ch. 3	
3	9/8	Probability	Ch. 3	
	9/10	Probability	Ch. 3	
4	9/15	Distributions of Random Variables	Ch. 4	HW1: Data & Probability
	9/17	Distributions of Random Variables	Ch. 4	
5	9/22	Distributions of Random Variables	Ch. 4	HW2: Random Vars.
	9/24	Foundations for Inference	Ch. 5	
6	9/29	Midterm 1		
	10/1	Foundations for Inference	Ch. 5	
7	10/6	Foundations for Inference	Ch. 5	HW3: Inference
	10/8	Inference for Categorical Data	Ch. 6	
8		FALL BREAK		
9	10/20	Inference for Categorical Data	Ch. 6	
	10/22	Inference for Categorical Data	Ch. 6	
10	10/27	Inference for Numerical Data	Ch. 7	HW4: Cat. Data Inference
	10/29	Inference for Numerical Data	Ch. 7	
11	11/3	Inference for Numerical Data	Ch. 7	
	11/5	Inference for Numerical Data	Ch. 7	
12	11/10	Introduction to Linear Regression / Exam Review	Ch. 8	HW5: Num. Data Inference
	11/12	Midterm II		
13	11/17	Introduction to Linear Regression	Ch. 8	
	11/19	Introduction to Linear Regression	Ch. 8	
14	11/24	Multiple and Logistic Regression	Ch. 9	HW6: Regression
	11/26	NO CLASS THANKSGIVING		
15	12/1	Multiple and Logistic Regression	Ch. 9	HW7: Final Study Guide
	12/3	Final Exam Review		
16	12/12	FINAL EXAM		