

**Georgia Institute of Technology**  
**Ivan Allen College of Liberal Arts**  
**School of Economics**  
**Probability and Statistics for Economics – ECON 2250**

Fall 2026

**Course description:** This course provides an introduction to probability theory and statistical inference. Students will explore tools and concepts relevant to the study of economics and gain a familiarity with statistical software widely used by economists.

**Course objectives:** This course serves as an introduction to probability and statistics for economics. It comprises of two main parts: basic probability and statistics, aimed at building a conceptual understanding of probability/statistics theory; and a second part that introduces estimators, hypothesis testing and simple regression.

Students will develop skills to visualize data, present data summary statistics, implement and comprehend estimator and hypothesis testing, and run basic regression. This course requires the use of statistical software R.

This course is designed to offer a rigorous quantitative approach while emphasizing economic data and applications. Successful completion of this course will provide students with the necessary background for more advanced courses, such as Econometric Analysis (ECON 3161).

I look forward to interacting with you throughout the semester. Class time will be a combination of lecture and active learning. Lectures are used to motivate, demonstrate, clarify, extend, and synthesize the material. Active learning means you will share prepared work and participate in discussions. All class members will have opportunities to contribute. It is crucial that you come to class prepared to actively participate. Regularly you will work together with your classmates, which serves to increase learning potential and retention.

**Prerequisite:** Students are encouraged to complete Calculus courses, such as MATH 1551 (Differential Calculus) and MATH 1552 (Integral Calculus), before enrolling.

**Canvas:** Communication about the course and other course materials is available on Georgia Tech's Canvas system. I will upload course materials and post course announcements on the course page. You may access Canvas at <https://canvas.gatech.edu/>.

### Required Texts:

- Schervish, Mark J., and Morris H. DeGroot. Probability and Statistics, 4<sup>th</sup>
  - <https://www.pearson.com/en-us/subject-catalog/p/probability-and-statistics-classic-version/P200000006163/9780137981694?tab=title-overview>

### References for installing and basic programming in R:

- MIT OCW: <https://ocw.mit.edu/courses/18-05-introduction-to-probability-and-statistics-spring-2022/pages/r-and-rstudio/>
- Princeton Research Computing: <https://researchcomputing.princeton.edu/education/external-online-resources/R>
- Tutorials and worksheets for data visualization and statistics in R: <https://ocw.mit.edu/courses/18-05-introduction-to-probability-and-statistics-spring-2022/pages/studio-resources/>
- *Statistical Inference via Data Science: A Modern Dive into R and the Tidyverse* (2nd ed) by Chester Ismay and Albert Y. Kim. Found at: [Welcome to ModernDive \(v2\) | Statistical Inference via Data Science](#).
- [Getting Used to R, RStudio, and R Markdown \(rbasics.netlify.app\)](#)

**Grading Procedures:** There are three components to your grade. The first is coursework. Assignments may contain both written and oral parts. This work may be done both in and out of class. Some assignments may be completed with a partner or small group.

The second area is exams. There will be two exams this semester during class time.

The third component of your grade is a project. This project is to be done using R and will be due at the time of the final exam, as scheduled by the institutions Registrar ([Final Exam Matrices | Registrar's Office | Georgia Tech](#)).

Your final grade for the course is based on the distribution in Table 1.

### Table 1

Task	Points	Percentage of Grade
Coursework	200	40%
Exams	200	40%
Project	100	20%
Total	500	100%

Grades will be entered continuously into Canvas. If you have any questions regarding your grade on a particular assignment please inform the instructor no later than one week after the grade is posted.

**Grading system:** Your final grade transfers to the Georgia Tech grading system according to the following.

A	4.0	Excellent	90.00% - 100.00%	450 point minimum
B	3.0	Good	80.00% - 89.99%	400 point minimum
C	2.0	Satisfactory	70.00% - 79.99%	350 point minimum
D	1.0	Passing	60.00% - 69.99%	300 point minimum
F	0.0	Failure	< 60.00%	<300 points

**Late or missing assignments policy:** Work is only allowed to be made-up or turned in late when the student has an excused absence. I will use a standard definition of excused absences that includes: illness, illness or death of family member; college-related trips; and major religious holidays. In each case, appropriate verification is required. Students missing assignments bear the responsibility of informing the instructor about their excused absence within one week to request the extension and determine a new date of completion.

For illness and personal emergencies please refer to this Georgia Tech policy managed by the Office of Student Life and the Dean of Students: [Student Absence from Class Due to Illness or Personal Emergencies | Georgia Tech Catalog](#).

For college-related trips and major religious holidays please refer to this Georgia Tech policy managed by the Registrar's Office and the Student Academic and Financial Affairs Committee: [Institute Approved Absences \(IAA\) Form for Students | Registrar's Office | Georgia Tech](#).

**Recording classroom activities:** In order to preserve class integrity, student privacy, and a safe environment to express opinions, recording of our classes using digital, tape, or audio devices is not allowed. This policy can be waived with accommodations upon explicit recommendation from the Office of Disability Services.

Students must receive the written consent of the instructor to sell or otherwise commercialize class notes, lecture slides, lecture videos, and materials such as homework assignments and answers. Students may not store or distribute class notes and materials in homework repositories or test banks under any circumstances (this violates intellectual property ownership). Students may not share or distribute lecture videos or lecture notes outside of this class.

**Freedom of expression:** As a faculty member at Georgia Tech, I respect your rights to the freedom of speech and expression. I am also committed to maintaining an orderly learning environment for all students and ensuring that all facilities are used in a way that facilitates teaching, learning, and research. Therefore, you should treat your peers and instructor respectfully in discussion. Disagreements are likely to happen. When they do, you are expected to disagree respectfully and to keep your discussion focused on evidence.

Discussions in this class are expected to take place solely within the course. Thus, statements made during class should not be quoted on social media unless the individual being quoted has provided their express permission. This applies to the instructor, students, and classroom guests. This policy is meant to protect student privacy and create a safe environment to learn.

**Academic integrity:** “I commit to uphold the ideals of honor and integrity by refusing to betray the trust bestowed upon me as a member of the Georgia Tech community.” Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. For information on Georgia Tech's Academic Honor Code, please visit <http://www.catalog.gatech.edu/policies/honor-code/> or <http://www.catalog.gatech.edu/rules/18/>. Academic integrity is extremely important to me.

Any student suspected of plagiarizing, fabricating data, or any other academic misconduct will receive a zero in the course and be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

**Student-faculty expectations agreement:** It is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body.

See <http://www.catalog.gatech.edu/rules/21/> for an articulation of some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

**Accommodations for students with disabilities:** If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404) 894-2563 or <http://disabilityservices.gatech.edu/>, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible to set up a time to discuss your learning needs.

This syllabus is subject to change.