ISYE 3770 (T17) – STATISTICS & APPLICATIONS

GEORGIA TECH – FALL 2026

TUESDAY AND THURSDAY, 05:00 - 06:15 PM

George/Scheller Tower | Room 0350

Instructor:	Mohammad N. Bisheh
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Office:	ISyE, George Tower, 1016
Office hours:	TBD
UTA:	TBA
Email:	TBA
Office hours:	TBA

Credit:	3-0-3 (Lecture-Lab-Total Credit Hours)
Textbook:	1- Montgomery, D. C., & Runger, G. C. (2018). Applied statistics and probability for engineers (p. 720). Hoboken, NJ: Wiley. 2- Goldsman, D., & Goldsman, P. (2020). A First Course in Probability and Statistics. EDX/Georgia Tech.
Website:	http://canvas.gatech.edu/
Software:	Python or R
Prerequisite:	MATH 2401 or MATH 2411 or MATH 24X1 or MATH 2605 or MATH 2551 or MATH2561 or MATH 2X51

Delivery Mode:

- Classes will be held in-person.
- All homework and assignments will be handled through canvas.
- A Piazza discussion forum will also be used for exchanging information among students. Our TA will check Piazza regularly.

Catalog Course Description:

An introductory course on statistical thinking, modeling, analysis, and decision making. This course introduces the basic notions of probability and statistics such as elements of set theory, combinations and permutations, Kolmogorov probability theory, random variables, inferential statistics, and regression analysis.

Objective: Provide an introduction to probability and statistics, emphasizing applications in science and engineering.

Course Outcomes:

By the end of the semester, you will be able to:

- Summarize and interpret a dataset using descriptive statistics
- Estimate parameters of a distribution based on a random sample
- Construct confidence intervals for parameters of a distribution
- Make decision about a population based on a random sample
- Predict a response variable based on one or more predictor variables
- Identify important factors influencing a response variable
- Determine a probability distribution of a population based on a random sample

Grading policy:

o Quizzes		20%
o Midterm	(TBD)	30%
o Final Exam	(Tech Exam Matrix)	40%
o Attendance & Professionalism		10%
o Energy Drinks (bonus)		5%

Course Policy:

1. Quizzes

- Quizzes may be given either without prior notice or with advance announcement.

- Copying others' work or copying from **AI-based** applications is **NOT** acceptable and violates the **honor code**. Each student must complete quizzes independently.
- The solution key will be provided on Canvas.
- Requests for re-grading exams/quizzes should be made within a week of returning their grades.

2. Exam

- Exams are in-person.
- For Midterm you are allowed to have one (double-sided) sheet of equations and for Final, you can have two (double-sided) sheets of equations.
- No make-up exams will be given unless prior arrangement is made with the instructor (with written documentation BEFORE the exam, e.g., a note from the Dean's office).

3. Attendance & Professionalism

- Attendance is mandatory for in person section and may be checked randomly.
- Students may take notes in whichever way suits them best, including the use of **electronic devices**. However, electronic devices may only be used for course-related purposes. Browsing the internet, messaging, or engaging in unrelated activities during class is strictly prohibited.
- The use of **laptops** is strongly discouraged unless explicitly required for course activities.
- Online students are expected to watch videos every day and submit their quizzes on the same day.

4. Energy Drinks

- Energy Drinks are brief, collaborative in-class exercises aimed at strengthening understanding of the material. Students are encouraged to work in small groups, and participation may earn bonus credit.

Academic Integrity

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. Review Georgia Tech's Honor Code and the student Code of Conduct.

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Use of Generative AI

The use of AI tools is not permitted for assignments, quizzes, or exams unless explicitly authorized by the instructor.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services (404-894-2563) 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 in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulate 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.

Tentative Lectures Schedule:
The topics covered and the dates they are to be covered are subject to change.

Topics	Weeks
Course Introduction and Basic Probability Review	1.5
Random Variables	1
Discrete Distributions	1
Continuous Distributions	1.5
Descriptive Statistics	1
Midterm	0.5
Sampling Distributions	1
Point Estimation	1
Confidence Intervals	1
Hypothesis Testing	2
Analysis of Variance	1
Linear Regression	1
Final	0.5

Campus Resources for Students

Undergraduate Student Academic Success Resources:

- Academic Support: Academic Success and Advising (a unit in the Office of Undergraduate Education & Student Success) provides free support for your courses. Students can attend scheduled supplemental review (PLUS) sessions, stop by Drop-In Tutoring, or

schedule a one-on-one appointment through Knack. To explore what options work best for you, please visit us online at success.gatech.edu/tutoring, email us at tutoring@gatech.edu, or come see us at Clough Undergraduate Learning Commons, Suite 283.

Graduate Student Academic and Professional Success Resources:

A list of resources for graduate students is given on the Office of Graduate and Postdoctoral Education website. Specific information for current graduate students includes

- Academic Resources such as the Communications Center, Language Institute, Library, Catalog, Registrar, resources for conducting research, Advocacy and Conflict Resolution resources, and how to manage unexpected situations that may impact your academic performance;
- Student Resources such as Campus Services, Child Care/Family programs, Health & Wellness, Career Services, and the Student Resource Guide; and
- *Professional Development such as the programming from the Career Center and other professional development resources and events"*

Student Well-Being:

At Georgia Tech, we are concerned about your overall physical, social, and mental well-being. A comprehensive list of wellness related resources has been compiled and maintained by the Office of the Vice President for Student Engagement and Well-being (student-resource-guide (gatech.edu)