

ISyE 3770 – Summer 2026

Instructor Information

Instructor: Prof. Turgay Ayer

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General Course Information

Description

This course provides an introduction to probability, probability distributions, point estimation, confidence intervals, hypothesis testing, and linear regression. This course is cross-listed with MATH 3770 and CEE 3770.

Course Learning Outcomes

Upon successful completion of this course, students should be able to:

- Solve problems involving discrete and continuous random variables, probability distribution functions (discrete and continuous), conditional probability, joint probability, expectation, variance, conditional expectation, conditional variance, independence, laws of large numbers, and basic Poisson processes.
- Analyze and display sampling data, evaluate statistics, and estimate distribution parameters;
- Draw conclusions about population parameters from experimental data by using proper statistical techniques;
- Use proper statistical techniques (namely hypothesis testing) to draw sound statistical conclusions;

Required Course Materials

Applied Statistics and Probability for Engineers by Montgomery and Runger, 7th Edition, online book with WileyPLUS code.

Grading Policy:

Homework: 20% (1-2 assignment per week);

Quizzes: 20% (about one quiz per week);

Exam 1: 20%;

Exam 2: 20%;

Exam 3: 20%;

Letter Grade Minimum Target Averages: A: 90%; B: 80%; C: 70%; D: 60%

Course Policies

Attendance and/or Participation

Attendance is expected. You are allowed up to four non-excused absences without questions asked.

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.

Core IMPACTS

[Core IMPACTS](#) is the University System of Georgia's General Education curriculum. If you are teaching a course that counts towards Core IMPACTS, you should include a syllabus statement about the Core area and associated [career competencies](#). [This resource](#) developed by the Center for Excellence in Teaching and Learning and Online Education at Georgia State University includes template syllabus statements for each of the Core IMPACTS areas that you may adapt for your course.

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.

Campus Resources for Students

Undergraduate Student Academic Success Resources:

A list of resources for undergraduate students' academic success and information about advising can be found at [Success at Tech](#).

- 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 \(gatech.edu\)](#))