ISyE 3030 Syllabus

Basic Statistical Methods

Fall 2026

Instructor Information

Instructor: Parisa Yousefi Zowj

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General Course Information

Description

An introductory course on statistical thinking, modeling, analysis, and decision making. This course covers a variety of topics including descriptive statistics, point and interval estimation, hypothesis testing, regression analysis, analysis of variance and experimental design, etc.

Objective: Introduce probability and statistics, emphasizing applications in science and engineering.

Course Learning 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

Required Course Materials

“Applied Statistics and Probability for Engineers”, 6th Edition, Douglas C. Montgomery, George C. Runger, Wiley, ISBN 978-1118539712, © 2014, 836 pages.

Grading Policy:

To translate the final score on assignments (out of 100) to the course letter grade use the following:

- $90 \leq score \leq 100$ A
- $80 \leq score < 90$ B
- $70 \leq score < 80$ C
- $60 \leq score < 70$ D
- $score < 60$ F

Assignments

- Homework 20%
- Exam I 25%
- Exam II 25%
- Project 25%
- Participation 5%

Course Policies

Description of Graded Components

1. Homework

- There are approximately weekly homework assignments, and they are due on Canvas. You can find information about deadlines on Canvas. NO late submission is acceptable. (The lowest score will be dropped at the end of semester)
- You are encouraged to discuss homework problems with your fellow students. But your final answers should be based on your own understanding. Copying others' work is NOT acceptable and violates the honor code. Each student should submit her/his homework individually.
- Homework should be submitted through Canvas. We JUST accept one single PDF file of solutions. Please do not submit .doc, .xls or .jpg or other formats.
- It is not necessary to type the solutions; you can even submit the scanned version of your handwritten copy. It just needs to be neat and organized.
- The solution key will be provided after the deadline on Canvas.
- For questions concerning the homework, please email the TA first.
- Requests for re-grading HW/exams/quizzes should be made within a week of returning their grades. Homework will be re-graded by the TA); exams will be re-graded by the instructor.

2. Exam

- Exams are in-person
- For exam I you are allowed to have one (double-sided) sheet of equations and for exam II, 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. Project

- Final project instead of final exam
- Detailed information about group project can be found on Canvas. Here are some important dates:
    - Determine Group Members
    - Abstract
    - Peer reviews
    - Report

4. Participation

- 8 attendances will be considered randomly among all checked ones
- students are allowed to have up to 2 missing attendances out those 8

Note: Assignment due dates will be announced in advance.

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.

Academic Honor Code:

It is your responsibility to get familiar with the Georgia Tech Honor Code and you are bound by its requirements. Use of any previous semester course materials is allowed for this course; however, I remind you that while they may serve as examples for you, they are not guidelines for any tests, quizzes, homework, projects, or any other coursework that may be assigned during the semester. For any questions involving these or any other Academic Honor Code issues, please consult me, my teaching assistants, or www.honor.gatech.edu.