

ISyE 6739 –Statistical Methods

Georgia Tech - Spring 2018

Tuesday, Thursday 4:30 pm – 5:45 pm, ISYE Annex 228

Instructor: Kamran Paynabar, Office: Groseclose 436, Email: kamran.paynabar@isye.gatech.edu

Office hours: Tuesday 3:15 to 4:15 pm and Thursday 10:45 am to 11:45 am
or by appointment via email

TA: Yuliia Lut, yuliia.lut@gatech.edu

Office hours: Wednesday, 12 pm – 1 pm and Friday 9am – 10am (Main 224)

Textbook (recommended):

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

Website: <http://canvas.gatech.edu/>

Prerequisite: Calculus

Software: Minitab® 17 and R

You can access the software through Vlab at <http://vlab.matrix.gatech.edu/>

Catalog Course 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.

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 a 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 (all dates are tentative and subject to change)

Homework (15%) and assignments (5%)	20%
Quizzes and class participation	15%
Exam 1 (02/20)	20%
Exam 2 (04/17)	25%
Group project (presentation on 04/24, and 5/1, report due on 5/1)	20%

Course policy

- There are approximately biweekly weekly homework assignments. The homework should be handed in *in the beginning of the class on the due date*. NO late submission is acceptable. (The lowest score will be dropped)
- Lecture Videos are available on YouTube. The link of video for each session is posted in advance on Canvas under “calendar”.
- A short video assignment is given in each class.
- To access the videos, you MUST have a gmail account.
- There are quizzes and group activities in each class. Each group should have 2 students.

- You are encouraged to discuss homework/assignments problems with your fellow students. But your final answers should be based on your own understanding unless it is a group assignment, which will be announced on Canvas. Copying others' work is NOT acceptable and violates the **honor code**.
- Requests for re-grading HW/exams/quizzes should be made within a week of returning HW/exams.
- Exams are comprehensive and closed-book. For exam I and II students are allowed to bring one and two (double-sided) sheets for equations, respectively. There are no constraints on the contents of the notes.
- Detailed information about group project can be found on Canvas.

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.

Tentative Lectures Schedule:

The topics covered and the dates they are to be covered are subject to change.

Week	Topics	References
1	Introduction and Descriptive Statistics	Ch1&6
1	Probability Distributions Review	Ch3&4
2	Probability Review and Sampling Distributions	Ch3&4&7
2	Sampling Distributions and Central Limit Theorem	Ch7
3&4	Point Estimation	Ch7
4&5	Confidence Interval for Single Population	Ch8
02/20	Exam I	
6	Hypothesis Testing for Single Population	Ch9
7&8	Statistical Inference for Two Populations	Ch10
9	Goodness of Fit and Independency Tests	Ch9
10	Analysis of Variance (ANOVA)	Ch13
11	No class – Spring Break	
12	Analysis of Variance (ANOVA)	Ch14
13	Simple Linear Regression	Ch11
13,14	Multiple Linear Regression	Ch12
04/17	Exam II	
15	Group Project Presentation and Report	Ch15