
ISyE 2028 – Basic Statistical Meth - Fall 2013

Tentative Syllabus

This course is intended for a course in Engineering Statistics. Through the use of extensive examples and data sets, this course illustrates the importance of statistical data collection and analysis for students in the fields of aerospace, biochemical, civil, electrical, environmental, industrial, mechanical, and textile engineering, as well as students in physics, chemistry, computing, biology, management, and mathematics.

Course will cover the following topics

- Review of probability theory and random variables (2027)
- Descriptive statistics
- Statistical estimation and sampling distributions
- Statistical confidence intervals of a single population
- Test of hypothesis of a single population
- Comparing two populations
- The analysis of variance
- Simple linear regression
- Multiple linear regression

Instructor: Prof. Yao Xie, Groseclose 339, email: yao.xie@isye.gatech.edu

Class Time and Location: Mon Wed, 8:05am - 9:25am, Instr Center 209.

Instructor Office Hour: Mon 4:30pm – 5:30pm, Groseclose 339. Please come prepared.

Class Website: T-square

Class material available on our website includes

- Announcements
- Course syllabus
- Homework assignments and solutions
- Slides and other lecture material
- Practical exams
- Your course grades on exams and homework
- Any important announcements

Make sure the scores in T-square are consistent with what you got. We will not make any change in grading for works older than 2 weeks.

Tentative website: syllabus and course schedule also available at
<http://www2.isye.gatech.edu/~yxie77/isye2028.html>

Class Mailing List: Registered students are automatically subscribed to the class mailing list.

Class TA: Caglar Caglayan, Main Building 321, ccaglayan6@mail.gatech.edu

TA Office Hour: Wed 12:00pm-1:00pm, Office: Main Building 321. Please come prepared.

Textbook: *Applied Statistics and Probability for Engineers, 5th Edition*, Douglas C. Montgomery and George C. Runger.

Recommended:

Mathematical Statistics and Data Analysis, John A. Rice, 3rd edition.
Statistical Inference by George Casella and Roger L. Berger, 2nd edition.

Prerequisites: ISyE 2027 and/or CS1312.

Honor Code: For any question involving Academic Honor Code issues, please consult me, the class teaching assistant, or www.honor.gatech.edu

Software: R statistical software package will be used for the example discussed in class, home assignments and examination. Please install the R software on your laptop from <http://cran.r-project.org> You will use this software for homework assignment and for in-class practice quizzes.

Grading Policy: Class Attendance 3%, Submitting Teaching Evaluation – 2%, Homework - 15%, Computer Exam 1 – 10%, Computer Exam 2 – 10%, Midterm 1 - 15%, Midterm 2 – 15%, Final - 30%

Homework: There are 8 assignments in total. **The lowest homework-score will be dropped.** Late Homework will NOT be accepted. **No make-ups.** Assignments will include both exercises and computer problems; the computer problems will ask you to carry out statistical analysis using computer statistical software. Keep in mind that you should not hand in raw computer output. Conclusions and interpretation of results are more important than good printouts. You are allowed to work together with other students on homework, as long as you write up and turn in your own solutions. You are also allowed (and encouraged) to ask me questions, although you should try to think about the problems before asking.

Computer Exams: There will be two in-class computer exams each of 50 minutes. You will work on a statistical analysis using the R software; therefore, you will need to bring your own laptop. The computer exam problems will be primarily applied although you will need a good understanding of the theory behind it. Specific instructions will be provided in the class. You will need to hand in detailed results and discussions on the statistical analysis. The computer exams are close notes (including assignment solutions) and close textbook but a four double-sided pages with formulas will be allowed. Do not write homework solutions on the formula sheet. The notes have to be self-made. Do not copy from others. You are not allowed to open your email during the quiz time. You are not allowed to use your cell phone. You are not allowed to open any other software or material during the exam time.

Computer Exam 1: 10/21, Mon

Computer Exam 2: 11/13, Wed

Midterms: There will be two in-class midterm exams during the class. The midterms are close notes (including assignment solutions) and close textbook but two and respectively, four two-sided pages with formulas will be allowed. Do not write homework solutions on the formula sheet. You are not allowed to use your cell phone. The notes have to be self-made. Do not copy from others. **No make-ups.**

Midterm 1: 9/23, Mon

Midterm 2: 11/4, Mon

Final exam: The final is a 3-hour exam reviewing the material (lectures and assignments) provided in this course throughout the full semester. The final will be divided into 1hr & 25min for theoretical questions followed by 1hr & 25min for computer questions. The exam is close notes (including assignment solutions) and close textbook but four (two-sided) pages with formulas will be allowed. Do not write homework solutions on the formula sheet. The notes have to be self-made. Do not copy from others. **No make-ups. You should not take this class if you know you have an exam conflict.**

Final Date: 12/11, Wed, 8:00am – 10:50am.

