

MATH 21-01 : Introductory Statistics, Spring 2017

Department of Mathematics, Tufts University

Block C: (Tue, Wed, Fri, 9:30 - 10:20 AM), Broomfield-Pearson Room 005

Instructor: Sergey Voronin (<http://math.tufts.edu/faculty/svoronin/>)

Email: sergey.voronin at tufts.edu

TA: Joshua Enxing

Office: 202 Bromfield-Pearson

Office Hours: Tue, Wed, Fri: 11:30 AM - 12:30 PM, BP 3rd floor. Extended OH for exam weeks.

TA OH: TBA

Prerequisites: Pre-calculus.

Text: Elementary Statistics by Mario F. Triola (12th ed, access code is not needed).

Description and learning objectives

This course introduces the concepts of statistics and probability, without using calculus. We will look at various data measures, probability distributions and tests of significance. We will use the R software package to do basic plotting and statistical analysis of data. We will motivate and discuss the central limit theorem. The course will conclude with fundamental concepts from confidence intervals and hypothesis testing.

Learning objectives for the course are $\{1b, 1c, 1d, 1e, 2a, 6\}$, as specified in: <http://ase.tufts.edu/faculty/committees/objectives/math.htm>.

Homework, exams and grading

There will be a total of 10 Homework assignments. These will be a mix of textbooks problems, written problems, and computer based data analysis exercises using the R package. Homework will usually be collected in class on Fridays (with the exception of a few special weeks). The lowest homework grade will be dropped. No late homework will be accepted.

Grading will be based out of a total maximum of 100 points. Homework will be worth a total of 30 points (10 HWs, with the lowest score to be dropped). There will be three midterms worth 15 points each and a 25 point final exam.

Translation to letter grades will be based on your score relative to the class median out of 100 points, the quartiles Q_1 , Q_3 and the IQR (the interquartile range, about which we will learn). A score between Q_1 and Q_3 would correspond to the B letter (B-, B, B+) range. A total score below the median minus $1.5 \times \text{IQR}$ would be eligible for a failing grade. Approximate translations:

- A range : $S > Q_3$, B range : $Q_1 < S < Q_3$, C range : $\text{median} - \text{IQR} < S < Q_1$
- D range : $\text{median} - 1.5 \times \text{IQR} < S < \text{median} - \text{IQR}$, F : $S < \text{median} - 1.5 \times \text{IQR}$

The above are only rough guidelines, subject to change based on the data. Exact grade cutoffs will be developed at the end of the course after all the scores have been compiled and will consider all of your work.

Student accessibility services

If you are requesting an accommodation due to a documented disability, you must register with the Student Accessibility Services Office at the beginning of the semester. To do so, call the Student Accessibility Services office at 617-627- 4539 to arrange an appointment with Linda Sullivan, Program Director of Student Accessibility Services.

Important dates

- Feb 23rd : Last day for AS&E students (except first-year undergraduates) to DROP courses without record of enrollment.
- May 1st : Last day for AS&E students to WITHDRAW from courses and receive a grade of W by 11:59 p.m. EST.

Collaboration, cheating, and exam policy

You are welcome to study together during the week. However, all work you hand in must be written up individually, by you only. Violations of this rule will result in a penalty and reporting in accordance with Tufts University and Math Department policies. You must be present for all exams. Arrangements will be considered only in the case of a serious medical emergency with full supporting documents. You must use a pen for the exams (no pencils or erasable pens).

Schedule

The tentative schedule for the homework and exams appears in the table below. We will cover roughly the first 9 chapters of the book, skipping selected sections and also going over some extra material. The homework will consist of textbook exercises, non-textbook word problems and R computer exercises. All details will be posted on the course website. Please refer to the course website and class announcements for up-to-date due dates. http://math.tufts.edu/faculty/svoronin/teaching/stat_21_spring17/

Unit 1: Chapters 1, 2, 3, 4(1)	HW1 due 01/27 in class. HW2 due 02/03 in class. HW3 due 02/14 in class. Review of unit 1 (TBA). Midterm 1 02/17 in class.
Unit 2: Chapters 4(2), 5, 6(1)	HW4 due 02/24 in class. HW5 due 03/08 in class. HW6 due 03/15 in class. HW7 due 03/28 in class. Review of unit 2 (TBA). Midterm 2 03/29 in class.
Unit 3: Chapters 6(2), 7, 8, 9	HW7 due 04/04 in class. HW8 due 04/14 in class. HW9 due 04/25 in class. Review of unit 3 (TBA). Midterm 3 04/26 in class. HW10 due 05/05 to office.
Final Exam for Block C on Tuesday, May 9th: 12:00 - 2:00 PM	