MATH 21-01 : Introductory Statistics, Fall 2016

Department of Mathematics, Tufts University
Block C: (Tue, Wed, Fri, 9:30 - 10:20 AM), Anderson Hall Room 306
Instructor: Sergey Voronin (http://math.tufts.edu/faculty/svoronin/)
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TA: Joshua Enxing
Office: 202 Bromfield-Pearson
Office Hours: Wed 4:30 - 5:30 PM, Thr 3:30 - 5:30 PM
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.
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

Homework will be assigned weekly. There 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 (15 HWs, with the lowest score to be dropped). There will be two midterms worth 20 points each and a 30 point final exam.

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

- A range : $\approx$ median $+ 0.75 \times$ IQR, B range : $\approx$ median, C range : $\approx$ median $- 0.75 \times$ IQR
- D range : $\approx$ median $-$ IQR, F : $<$ median $- 1.5 \times$ IQR

The above are only rough guidelines! Exact grade cutoffs will be developed at the end of the course after all the scores have been compiled.

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

- 10/11 : Last day for AS&E students (except first-year undergraduates) to DROP courses without record of enrollment.

- 12/12 : Classes end; last day for AS&E students to WITHDRAW from courses and receive a grade of W by 11:59 p.m. EST.
- Midterm I on 10/11. Midterm II on 11/22. Final exam on 12/19.

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. No electronic devices are allowed for the in class exams. You must use a pen for the exams (no pencils or erasable pens will be allowed).

Schedule

The schedule for the homework and exams appears in the table below. We will cover roughly the first 9 chapters of the book and parts of 10 if time allows. The homework will consist mostly of textbook exercises, with additional non-textbook problems and R computer exercises. All details we be posted on the course website: http://math.tufts.edu/faculty/svoronin/teaching/stat_21_fall16/

Unit 1: Chapters 1, 2, 3, 4	**HW1 due** 9/13 **in class.** **HW2 due** 9/16 **in class.** **HW3 due** 9/23 **in class.** **HW4 due** 9/30 **in class.** **HW5 due** 10/07 **in class.** **Review of unit 1 (TBA).** **Midterm 1** 10/11 **in class.**
Unit 2: Chapters 5, 6, 7	**HW6 due** 10/14 **in class.** **HW7 due** 10/21 **in class.** **HW8 due** 10/28 **in class.** **HW9 due** 11/4 **in class.** **HW10 due** 11/9 **in class.** **HW11 due** 11/18 **in class.** **Review of unit 2 (TBA).** **Midterm 2** 11/22 **in class.**
Unit 3: Chapters 8, 9	**HW12 due** 11/30 **in class.** **HW13 due** 12/2 **in class.** **HW14 due** 12/9 **in class.** **HW15 due** 12/14 **to my office.** **Review of unit 3 (TBA).**
Final Exam for Block C on 12/19, 12:00 - 2:00 PM	