S&DS 107: Introduction to Statistics

Meets: M,T,W,Th,F 10am - 11:15am
Classroom: TBD
Yale 2019 Summer Session B
July 1 – August 2, 2019

Instructor: Parker Holzer
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Office Hours: Mondays & Thursdays 12-2pm
Front classroom of 24 Hillhouse Ave.

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Office Hours: TBD

Course Description: An introduction to statistical reasoning. Topics include histograms, scatterplots, statistics of center and spread, basics of probability, distributions and properties of random variables, the Central Limit Theorem, estimation, sampling distributions and confidence intervals, hypothesis testing, least-squares regression, and experimental design. The focus will be on understanding concepts that have proven useful in real-world applications. We will also give special attention to concepts that are either commonly misused or misunderstood such as sampling, correlation, and p-values. No math pre-requisite is required, but students are assumed to be familiar and comfortable with basic algebra.

ISBN: 9780134210223
Please make sure that you have a copy of this textbook with you on the first day of class, or are willing to buy one at the Yale Bookstore that day. And make sure to get the Fifth Edition.

R Programming Language:
This course will make use of the R programming language. But students do not need to be experienced or familiar with R, or have any prior programming experience, in order to do well in the class. The focus of the class will be statistical concepts, not learning how to program.
Graded Items:

- **Homework:** There will be nine overall homework assignments. They will go out each Tuesday and Friday. Assignments that go out on Tuesday will be due the following Friday in class, and assignments that go out on Friday will be due on Tuesday in class. Students may work together on the homework, but are expected to provide their own solution to each problem. Late homework will not be accepted. The lowest homework grade will be dropped.

- **Attendance:** In accordance with the Yale Summer Session program, attendance in class is required. Attendance will be taken at the beginning of class each day and will count towards the final grade.

- **Quizzes:** There will be a short quiz at the beginning of class each Wednesday. There will be no make-up quizzes. The lowest quiz score will be dropped.

- **Final Exam:** There will be a final exam in class on Thursday, August 1st from 10am to 12pm. Students are expected to plan ahead for this as there will be no make-up exam.

**Grading:** The final grade will come 40% from homework, 20% from attendance, 10% from quizzes, and 30% from the final exam. The following scale will be used to determine the final grade based on the total percentage P:

- A: P > 92%
- A-: 92% ≥ P > 89%
- B+: 89% ≥ P > 86%
- B: 86% ≥ P > 83%
- B-: 83% ≥ P > 79%
- C+: 79% ≥ P > 76%
- C: 76% ≥ P > 73%
- C-: 73% ≥ P > 70%
- D+: 70% ≥ P > 67%
- D: 67% ≥ P > 64%
- F: 64% ≥ P

**Academic Policies:** Students are expected to do all work in accordance with Yale University’s academic honesty policy. Collaboration is allowed for homework assignments, but students must provide their own solutions instead of simply copying the work of another student. Consulting other sources for answers to homework problems is not allowed.