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 algebra.

Text: OpenIntro Statistics, Third Edition, by Diez, Barr, Cetinkaya-Rundel (freely available online). Notes and examples will also be provided.

R Programming Language: The course will make use of the R programming language. However, students do not need to be fluent nor familiar with this language in order to do well in the class.

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.
• **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 Friday, August 2nd 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 60% from homework, 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-: $92\% \geq P > 89\%$
- B+: $89\% \geq P > 86\%$
- B: $86\% \geq P > 83\%$
- B-: $83\% \geq P > 79\%$
- C+: $79\% \geq P > 76\%$
- C: $76\% \geq P > 73\%$
- C-: $73\% \geq P > 70\%$
- D+: $70\% \geq P > 67\%$
- D: $67\% \geq P > 64\%$
- F: $64\% \geq P$

**Academic Integrity:** Students are expected to do all work in accordance with Yale University’s academic honesty policy.