_____ Survey

_____ is "the most important science in the whole world: ... for it only gives the results of our experience."

-Florence Nightingale (1820-1910)

1 Introduction and Vocabulary

- Population and parameter vs. sample and statistic
  - A *population* is the set of objects being studied. A _____ is a numeric summary of a population. e.g.
  - A _____ is an observed subset of a population. A *statistic* is a numeric summary of a sample. e.g.
- Data types
  - With *numeric* data, each item is assigned _____. The possible values of *discrete* data can be arranged in a (finite or infinite) _____. The possible values of *continuous* data _____: between any two there's a third. e.g.
  - With _____ data, each item is assigned a category. *Ordinal* values have a natural order, while *nominal* do not. e.g.

- Statistical methods

  - Use _____ statistics (§2) consisting of graphical and numeric summaries to describe observed data. e.g.

  - Use _____ statistics to make probabilistic claims (§3, 4) about a population, in light of a sample drawn from it.

    * A *point estimate* (§5) is a _____ used to estimate a _____. e.g.

    * A *confidence interval* (§5, 7-9) is a range of _____ for a parameter in light of a sample. e.g.

    * In a *hypothesis* _____ (§6-12), we write a hypothesis and then evaluate a sample. We then *reject* the hypothesis as unbelievable or *retain* it as plausible in light of the data. e.g.

    * In a *linear* _____ *model* (§11) we estimate and make claims about the slope and intercept of a line relating one variable, y, to another, x. e.g.

Course outline:

- 1 Introduction
- 2 Descriptive statistics
- 3 Probability
- 4 Random Variables and Distributions
- 5 Estimation and Known-σ Confidence Interval for μ
- 6 Hypothesis Testing: Definitions and a Known-σ Test for μ
- 7 More One-Sample Confidence Intervals and Tests
- 8 Comparing Two Populations via Independent Samples
- 9 Comparing Two Populations via a Paired Sample
- 10 Comparing Several Populations via Several Independent Samples (ANOVA)
- 11 Correlation and Regression
- 12 Goodness-of-Fit and Independence Tests

Syllabus

- Bring your _____ and _____ to discussion.