Course Description

In this course, you will be introduced to advanced statistics for behavioral economics and psychology. We will extensively explore the use (and misuse) of statistics in a data-rich world—focusing largely on conceptualizing and interpreting statistical inferences. In this course, we will cover:

- Hypothesis testing and confidence intervals
- Effect size & Power analysis
- ANOVA between-subject designs
- ANOVA within-subject and mixed designs
- Mediation
- Moderation
Non-parametric statistics: Logistic and chi-square

Factor analysis

Course Goals
By the end of the semester, you should...

- understand how we use the concepts of uncertainty and variability to draw inferences about samples
- grasp the logic, strengths, and limitations of the null hypothesis significance testing approach to using statistics to answer research questions
- understand the relationship among statistical significance, power, and effect size
- when presented with a research design, be able to
  - identify and conduct the correct statistical analysis in the R programming language and software package;
  - interpret the output of those tests in order to draw a conclusion about research questions; and
  - report the results of statistical analyses in colloquial language and in a manner appropriate for scientific publication
- have a greater understanding of the role of statistics in public discourse.

Grading
Exam – 100%

Reading List
