Learning Objectives

By the end of the course, you will be able to

- Describe different types of designs, communicate their advantages and disadvantages, compare and contrast their usage under different circumstances, and select the most useful designs for your own research;
- Develop your own R programming codes to analyze experimental data;
- Interpret statistical analysis results and write a results section for an APA format psychology paper;
- Conduct model diagnostics and anticipate potential problems of the analyses. In other word, you will no longer blindly use convenient statistical methods, but consider a bit more about the effect of assumption violations and how to address such problems;
- Use appropriate help resources to accomplish tasks assigned in the lecture and the lab;
- Collaborate with your cohort and establish potential future collaborations;
- Learn how to think about uncertainty (learn how to think like a statistician).

We will do this by

- Using the textbook, lecture notes, and lab materials to learn new content;

- Having group discussion in both lectures and labs;

- Using lab exercises to practice new data analysis techniques;

- Using an in-class midterm exam and a take-home final exam to test your understanding of the fundamental knowledge;

- Working on larger data projects to reinforce and synthesize what you have learned;

- Using optional weekly homework assignments to deepen your understanding of the materials.

Guest speakers were invited to the class. Previous guest speakers included Dr. Michael Kubovy, Dr. Ken Kelly, and Dr. Scott Maxwell.

Five-year warranty: The knowledge and skills you learned from this course will be warranted for a period of five years. That is to say, during your graduate studies, you are

always more than welcome to come to me and discuss anything related to experimental designs!