

PSYC 3000 E : DESIGN AND ANALYSIS IN PSYCHOLOGICAL RESEARCH

Instructor	Zhigang Wang, PhD
Term	Fall 2024/Winter 2025
Course Delivery	Online – Combined Synchronous/Asynchronous In-Person Final Exam. Online Quizzes and Midterms.
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Office Location	Virtual
Office Hours	By appointment

COURSE DESCRIPTION/INSTRUCTOR'S STATEMENT

This course is an advanced course in inferential statistics. It is designed to help you develop skills that will enable you to effectively evaluate the research of others and to design, conduct, and report on research of your own. You will obtain knowledge about the null hypothesis significance testing debate, the basic concepts and principles underlying the general linear model (GLM), how to critically evaluate research questions and results, how to set up your own data for analysis and how to analyze data and reach appropriate conclusions. Topics to be covered include exploratory data analysis, probability theory, sampling distribution theory, correlation and regression, analysis of variance, effect sizes and confidence interval estimation and nonparametric statistics.

The primary emphasis of this course is not to teach you how to become a statistician, but rather to teach you how to use different statistical procedures to answer substantive research questions. Thus, developing a conceptual understanding of these procedures and practicing your SPSS skills are critical. In-class training on SPSS will be offered. To help convey the principles stressed in this class, data will be analyzed and interpreted in a practical manner. This will help you translate the theory of statistics to scenarios applicable in research. Thus, you will not only learn about statistical procedures, but also learn how to use them to design your research, to analyze data, and to report the results using APA style.

Online Approach: Synchronous and asynchronous lectures will be delivered with synchronous tutorials. Online attendance and engagement are critical for success.

EVALUATION (SUBJECT TO CHANGE)

Grades will be based on a combination of six assignments (20%), three SPSS quizzes (10%; online), two midterm exams (30%; online), and a final exam (40%; in-person). Details are available in the Course Outline, located on the Brightspace course page.

TEXT

Howell, D. *Statistical Methods for Psychology* (8th ed.). Wadsworth, Cengage Learning (available for purchase at the CU bookstore or at [the Cengage](#)).

SPSS Statistical Software is needed for this course. This software is available on university laboratory computers and through [Information Technology Services](#).