

PSYC 3000 C : ADVANCED DESIGN & ANALYSIS

Instructor	Yan Liu
Term	Fall 2026/Winter 2027
Course Delivery	In-Person
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COURSE DESCRIPTION/INSTRUCTOR'S STATEMENT

A lot of jobs require some basic statistical skills. In this course, you will learn about statistics in the contexts of social sciences and psychology, including research design, descriptive and inferential statistics, sampling distributions, hypothesis testing, data visualization and a variety of statistical techniques including t-tests, analysis of variance, correlation, regression, and chi-square tests. This course will prepare you for more advanced courses in quantitative methods. However, you do not need to be a math whiz to succeed in this course!

This course is designed to provide practical experiences that you can apply to your future research work. We will focus on problem-solving based learning. During class, you will have many opportunities to work as a group and engage in hands-on data analysis activities. The skills that you will have by the end of the course include:

- Basic understanding on research design (e.g., experimental, observational, mixed methods)
- Be able to visualize data
- Apply fundamental statistical methods and interpret the results
- Conduct statistical analysis using SPSS or Jamovi
- Apply the APA publication format in your assignments and project reports

EVALUATION (SUBJECT TO CHANGE)

The final grade will comprise:

1. Lab activities (data analysis using SPSS or Jamovi)
2. Assignments

3. Quizzes and exams
4. Group projects

TEXT

Diez, D. M., Cetinkaya Rundel, M., & Barr, C. D. (2024). OpenIntro Statistics (4th ed.). OpenIntro, Inc. (Note. A free ebook can be downloaded via <https://leanpub.com/os>, and other resources can be found via <https://www.openintro.org/book/os/>).

Supplementary readings will also be provided.

The SPSS statistical software used in this course is available for free at:

<https://carleton.ca/its/all-services/computers/site-licensed-software/spss/>

Jamovi is a version of R that looks like SPSS and can be downloaded for free from

<https://www.jamovi.org/download.html>