

Sabancı University
Faculty of Arts & Social Sciences
PSY 502: Data Analysis for Psychological Sciences I
Fall 2020
Instructor: Emre Selçuk

Course Description: PSY 502 is the first of a two-part series surveying common data analytic approaches in psychology research. We will start with reviewing some very basic analyses (which you are likely familiar with) and make our way up through more advanced models. As we progress, we will also discuss the best practices to improve the quality of analytic approaches and decisions.

Lectures: I will be posting video lectures introducing each analytic model.

Required Readings: The required readings will focus on the best practices in data analyses.

Zoom meetings: The meetings will take place on Wednesdays at 17:40-18:30 (see SUCourse+ for the link). We will not meet every week. The course outline indicates the dates on which the meetings will take place. I will not be lecturing during these meetings. I will not be taking attendance either. The aim of these meetings is to answer **your** questions about the lectures, readings, and assignments.

Course Assessment: You will work in groups of three to complete assignments and on your own to complete a take-home final exam. Assignments will make up 40% of your course grade and the final exam will make up 60%.

Grades: The following grading scheme is used to assign the final grade for the course. No changes can be made to your final grade unless there has been an arithmetical error.

A	100-90	B	79.99-75	C	64.99-60	D	49.99-45
A-	89.99-85	B-	74.99-70	C-	59.99-55	F	44.99-0
B+	84.99-80	C+	69.99-65	D+	54.99-50		

Make-up for missed exams: In order to be eligible to take a make-up exam, you should have a valid and documented excuse.

Academic Integrity: Every student is expected to abide by the Sabancı University Academic Integrity Statement. Please see <https://www.sabanciuniv.edu/en/academic-integrity-statement>

Course Outline

Week 1 (October 5th-9th)

October 7th: Zoom meeting on introductions, getting to know each other, your questions about the course, syllabus, expectations, etc.

Week 2 (October 12th-16th)

Video Lecture(s): Review of basic concepts

Reading: Simmons, J. P., Nelson, L. D., & Simonsohn, U. (2011). False-positive psychology: Undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychological Science*, 22, 1359-1366.

Week 3 (October 19th-23th)

Video lecture(s): Review of basic (cont'd)

Reading: Open Science Collaboration (2015). Estimating the reproducibility of psychological science. *Science*, 349, aac4716.

Week 4 (October 26th-30th)

October 28th: Zoom meeting on your questions about Week 2-3 lectures, readings, and Assignment 1.

October 30th: Assignment 1 due.

Week 5 (November 2nd-6th)

Video lecture(s): Analysis of Variance (ANOVA) Part I: Between-participants designs

Reading: Nosek et al. (2018). The preregistration revolution. *PNAS*, 115, 2600-2606.

Week 6 (November 9th-13th)

Video lecture(s): ANOVA Part II: Within-participants designs

Reading: da Silva Frost, A., & Ledgerwood, A. (2020). Calibrate your confidence in research findings: A tutorial on improving research methods and practices. *Journal of Pacific Rim Psychology*, 14, e14.

Week 7 (November 16th-20th)

November 18th: Zoom meeting on your questions about Week 5-6 lectures, readings, and Assignment 2.

November 20th: Assignment 2 due.

Week 8 (November 23rd-27th)

Video lecture(s): Introduction to correlation and regression

Reading: Silberzahn et al. (2018). Many analysts, one data set: Making transparent how variations in analytic choices affect results. *Advances in Methods and Practices in Psychological Science*, 1, 337-356.

Week 9 (November 30th-December 4th)

Video lecture(s): Regression approach to ANOVA

Reading: LeBel, E. P., Campbell, L., & Loving, T. J. (2017). Benefits of open and high powered research outweigh costs. *Journal of Personality and Social Psychology*, 113, 230-243.

Week 10 (December 7th-11th)

December 9th: Zoom meeting on your questions about Week 8-9 lectures, readings, and Assignment 3.

December 11th: Assignment 3 due.

Week 11 (December 14th-18th)

Video lecture(s): Mediation analysis

Reading: Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass*, 5, 359-371.

Week 12 (December 21st-25th)

Video lecture(s): Moderation analysis

Reading: Giner-Sorolla R. (2018). Powering your interaction [blog post]. <https://approachingblog.wordpress.com/2018/01/24/powering-your-interaction-2>

Week 13 (December 28th-January 1st)

December 30th: Zoom meeting on your questions about Week 11-12 lectures, readings, and Assignment 4.

Week 14 (January 4th-8th)

January 4th: Assignment 4 due.

Readings: Grosz, M. P., Rohrer, J. M., & Thoemmes, F. (2020). The taboo against explicit causal inference in nonexperimental psychology. *Perspectives on Psychological Science*.

SPSP Power Analysis Working Group (2020). Power to detect what? Considerations for planning and evaluating sample size.

Finals Exam Period

January 23rd: Final exam due.