

PSYCHOLOGY 611
DATA ANALYSIS I - FALL 2018
251 Straub Tues. & Thurs. 10:00 - 11:20

Professor:	Teaching Assistant:	Teaching Assistant:
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Course Description: This course is the first in a 3-term sequence of classes designed to provide a thorough grounding in statistical concepts, methods, and applications of relevance to psychological science (and related sciences). The aim of the course is to help students develop skills in the analysis and interpretation of real psychological data. Our focus will be conceptual rather than mathematical (e.g., it is more important to understand why a particular statistical technique is appropriate, and how to make sense of the results obtained from its use, than to understand the full mathematical underpinnings of the statistic). During the course we will make heavy use of the computer, although you will also be asked to carry out hand computations illustrating key statistical principles.

Required Textbooks:

Judd, C.M., McClelland, G.H., & Ryan, C.S. (2017) (3rd Ed.). *Data Analysis: A Model Comparison Approach to Regression, ANOVA, and Beyond*. Routledge: New York. [JMR]
 Cumming, G., & Calin-Jageman, R. (2017). *Introduction to the New Statistics: Estimation, Open Science, & Beyond*. Routledge: New York. [CC]

Lectures, Laboratories, and Office Hours: A list of lecture topics and reading assignments is appended. Lecture notes will be available on the course Canvas web site (see below) prior to the relevant lectures. Please bring these notes to class. The course labs will be held on Friday (9-10:20 or 10:30-11:50) in 008 Straub. The labs will provide an opportunity to gain hands-on computing experience illustrating concepts discussed in lectures. They will also involve discussion of the weekly problem sets and reviews prior to exams, as well as allowing you the chance to raise any questions you have concerning lectures or the textbook. We also provide support for the course through office hours (see above). To meet with the TAs during office hours, we recommend making an appointment using the shared calendar at <https://gradstats.youcanbook.me/>. Drop in appointments are also fine, although you may have to wait.

Software: In this course we will be using R. The software is installed on the PCs in the computer labs (006 and 008 Straub; open 8am-5pm Monday through Friday), and is available for use when classes are not held (access the lab schedule at <http://psychology.uoregon.edu/resources/calendars/>). R is also available for free download at the following site: <http://www.r-project.org/>.

Exams: There will be two exams: an in-class midterm and a take-home final. Exams will be cumulative, with an emphasis on more recent material. Exams will be open book. It will be helpful to have a calculator for the exams but to receive credit for calculation problems you will need to show each step of your calculations; do not rely on an advanced calculator in using complex formulas.

Problem Sets: Problem sets will be assigned each week. Normally, the problem sets will be handed out on the Tuesday (thus giving you the opportunity to try the problems before the Friday lab) and will be due by 10am the following Tuesday, to be turned in on Canvas. The problem sets will be graded on a 10-point scale. Collaborative learning is encouraged: If you want to discuss the problems with other students, feel free to do so. However, the answers you turn in must be written *independently*. If you have difficulties with the problems, please consult with Sara, Max, or me.

Grading: The problem sets will count for 35% of your grade, the midterm for 30%, and the final for 35%. Problem sets and exams will be graded by the teaching assistants using explicit criteria that I will provide. The teaching assistants have taken graduate statistics previously and performed at a superior level. If anyone has concerns about their work being graded by a fellow graduate student, please see me and we can consider alternative arrangements.

Canvas: The course web site can be accessed through the Canvas course information system. On the web site, you will find general announcements for the class, lecture notes, problem sets and solutions, links to relevant web sites, and more. To visit the course site, go to <https://canvas.uoregon.edu/>, login, and then select "PSY 611" from the list of Canvas course sites in which you are enrolled.

Learning Outcomes: Upon completing the course you should have a broad conceptual understanding of many of the basic statistical techniques used in psychology and related disciplines. You should be able to choose appropriate basic statistical analysis techniques for a specific research question and set of data, complete basic data analyses by hand or by using computer software, and summarize the results in an APA-style report. You should also be better placed to understand and evaluate statistical information reported in both popular media and primary research articles.

Students with Disabilities: If you have a documented disability and may need accommodations, contact me ASAP. Students who are experiencing learning difficulties are encouraged to consult the Accessible Education Center (164 Oregon Hall; 541-346-1155; uoaec@uoregon.edu; web: <http://aec.uoregon.edu/>). Without documentation, accommodations are not guaranteed and are to be made at the discretion of the instructor.

Academic Dishonesty: The University Student Conduct Code defines academic misconduct. Students are prohibited from committing or attempting to commit any act that constitutes academic misconduct. All work submitted in this course must be your own and produced exclusively for this course. For the consequences of academic dishonesty, refer to the Schedule of Classes published quarterly. Violations will be taken seriously and are noted on student disciplinary records. If you are in doubt regarding any aspect of these issues as they pertain to this course, please consult with me before you complete any relevant requirements of the course. For more information regarding academic honesty and the student conduct code, see: <http://dos.uoregon.edu/conduct>.

OUTLINE OF LECTURE TOPICS

Date	Topic	Reading
Sept 25-27	Characterizing The Data	CC Chs 1-3 JMR Chs 1 & 2
Oct 2-4	Distributions	CC Ch 4 JMR Ch 3
Oct 9-16	Hypothesis Testing & Estimation: Single Sample Models	CC Chs 5 & 6 JMR Ch 4
Oct 18-25	Correlation and Simple Regression Models	CC Chs 11 & 12 JMR Ch 5
Oct 30- Nov 6	Two Sample Models: Independent and Dependent T Tests	CC Chs 7, 8, & 10 JMR Ch 6 & Ch 8 (pp. 168-178)
Nov 8	MIDTERM	
Nov 13-15	Multiple Regression Models With Continuous Predictors	JMR Ch 6
Nov 20-27	Multiple Regression With Categorical Predictors: One-Way ANOVA and Contrasts	CC Ch 14 JMR Ch 8 (Remainder)
Nov 29	Data Analytic Ethics	CC Ch 16
Dec 5	TAKE HOME FINAL EXAM DUE AT 9AM	