PSY-6110: Quantitative Methods in Psychology - II
University of Toledo, Department of Psychology
Fall 2021; MW 4:00 - 5:20, Blackboard Collaborate Ultra - Remote
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Course Goals: This course builds on PSY 6100, Quantitative Methods in Psychology I, and aims to solidify knowledge of exploratory data analysis, effect sizes, power, and ANOVA, as well as provide an understanding of correlation, linear regression, multiple linear regression, factor analysis, and logistic regression. In addition, the course emphasizes practical skills in computerized statistical analysis using SPSS, including using syntax for data management, data transformation, data analysis, and data modeling.

Prerequisites: PSY 6100/7100 or an equivalent course

Texts and Readings:
Primary
Field, A. (2018). *Discovering statistics using IBM SPSS Statistics* (5th Ed.). Thousand Oaks, CA: Sage. (ISBN: 9781526436566) https://www.discoveringstatistics.com/ https://edge.sagepub.com/field5e
Or: Field, A. (2013). *Discovering statistics using SPSS* (4th Ed.). Thousand Oaks, CA: Sage. (ISBN-10: 1412977525); http://www.statisticshell.com/ http://www.sagepub.com/field4e/main.htm
If using Field's 2013 text, chapter numbers differ
Howell, D. C. (2013). *Statistical Methods for Psychology* (8th Ed.). Belmont, CA: Wadsworth, Cengage Learning. (ISBN-10: 1111835489) http://www.uvm.edu/~dhowell/methods8/index.html
Secondary
Boslaugh, S. (2005). *An Intermediate Guide to SPSS Programming: Using Syntax for Data Management*. Thousand Oaks, CA: Sage. (ISBN-10: 0761931856)
Green, S. B., & Salkind, N. J. (2016). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (8th Ed.). Hoboken, NJ: Pearson. (ISBN-10: 0134319885)
Programming and Data Management for IBM SPSS Statistics 24. Book, data files, and syntax are available for download here: https://tinyurl.com/SPSS-DataManagement.
Other Helpful Supplies: Calculator, SPSS via UT; SPSS GradPack (12-month renewable license; $76 for standard [Base, Bootstrapping, Custom Tables, Advanced, Regression], $89 for Premium [everything but Amos, e.g., Categories, Missing Values, Neural Networks, Exact Tests])

Course Requirements:
1. Attend and participate in class.
2. Read the texts and other material when they are due.
3. Complete all homework assignments and turn them in by the start of class on Monday.
4. Successfully complete the exams.
5. Use your computer during class for stats, not other activities.

Grading: The class places relatively equal emphasis on conceptual knowledge, as demonstrated on exams, and practical knowledge, as demonstrated on homework assignments. You do not receive points for class attendance. Lowest values for grades: A = 93% (525), A- = 90% (508), B+ = 87% (491), B = 83% (468), B- = 80% (452), C = 70% (396), D = 60% (339). I will assign grades based on how well you master the material but if the whole class does poorly on an exam or assignment, I will make adjustments. Late assignments lose 10% per day. Of total points: Exam 1 = 30%, Exam 2 = 30%, Homework = 40%.

Collaboration: It is often very helpful to discuss class or homework topics with classmates. However, you must prepare all the material submitted for a grade on your own. It is not permissible to submit any material prepared by another student. You also may not collaborate with each other during an exam.

ACADEMIC POLICIES*

Graduate Policies

UNIVERSITY POLICIES*

Institutional Classroom Attendance Policy
Please be aware that the university has implemented an attendance policy, which requires faculty to verify student participation in every class a student is registered at the start of each new semester/course. For this course, if you have not attended/participated in class (completed any course activities or assignments) within the first 14 days, I am required by federal law to report you as not attended. Unfortunately, not attending/participating in class impacts your eligibility to receive financial aid, so it is VERY important that you attend class and complete course work in these first two weeks. Please contact me as soon as possible to discuss options and/or possible accommodations if you have any difficulty completing assignments within the first two weeks.

Policy Statement on Non-Discrimination on the Basis of Disability (ADA)* The University is an equal opportunity educational institution. Please read The University's Policy Statement on Nondiscrimination on the Basis of Disability Americans with Disability Act Compliance. Students can find this policy along with other university policies listed by audience on the University Policy webpage.

Academic Accommodations* The University of Toledo embraces the inclusion of students with disabilities. We are committed to ensuring equal opportunity and seamless access for full participation in all courses. For students who have an Accommodations Memo from the Office of Accessibility and Disability Resources, if you have not heard from me already, please correspond with me as soon as possible so that we can communicate confidentially about implementing accommodations in this course. For students who have not established accommodations but are experiencing disability access barriers or are interested in a referral to health care resources for a potential disability, please connect with the office by calling 419.530.4981 or sending an email to StudentDisability@utoledo.edu.

ACADEMIC AND SUPPORT SERVICES*

Here is a comprehensive list of Student Academic and Support Services available to you as a student.

SAFETY AND HEALTH SERVICES FOR UT STUDENTS*

Here is a comprehensive list of Campus Health and Safety Services available to you as a student.

INCLUSIVE CLASSROOM STATEMENT

In this class, we will work together to develop a learning community that is inclusive and respectful. Our diversity encompasses differences in race, culture, age, religion, sexual orientation, gender identity or expression, socioeconomic background, and a myriad of other social identities and life experiences. We will encourage and appreciate expressions of different ideas, opinions, and beliefs so that conversations and interactions that could potentially be divisive turn, instead, into opportunities for intellectual and personal development.

Schedule: A tentative schedule is below, though I may adjust it depending on our pace. I anticipate giving you 11 homework assignments, with one due almost every week. The schedule for the exams will not change.

Wk	Date	Topic	Reading	Due Monday at 4pm
1	8/30	Introduction, Orientation, and Review	H: 1; F: 1 & 2	
	9/01	History and systems in data analysis; Data Transformations (Compute and recode), Data Functions (Split files, select and weight cases);		
2	9/06	Labor Day (No class)		
	9/08	Data Management (File import and export), Data Restructure (Add cases, add variables, aggregate, cases to variables, variables to cases); Output Management System (OMS; getting and reprocessing output)	H: 2 & 3; F: 4 & 5 Behrens (1997) *EDA*	#1 SPSS Tutorial (if not in 6100; due by W)
3	9/13	Review - Sampling Error and Confidence Intervals	H: 4 & 7; F: 2, 3, 6, & 10	#2 Data Management
	9/15	Review - Sampling Error and Confidence Intervals		
4	9/20	Review – Effect Sizes and Power	H: 8, 9, 11; F: 8, 10, 12	#3 Sampling
	9/22	Review – Oneway ANOVA	Cohen (1992); McGrath & Meyer (2006)	Distribution and the CLT
5	9/27	ANOVA	H: 11; F: 12	#4 Effect Size & Power
	9/29	Omnibus Stats vs. Focused Contrasts (linear vs. nonlinear, weights)		
6	10/04	ANOVA - Multiple Comparisons and Type I Error Control via Multistage	H: 12	#5 Oneway ANOVA
	10/06	Adjustment and False Discovery Fate		
7	10/11	Type I Error Control	H: 13; F: 14	Exam 1
	10/13	Multifactor ANOVA		
8	10/18	Repeated Measures ANOVA (Simple Effects Analysis)	H: 14, 9, & 10; F: 15 & 8	
	10/20	Correlation		
9	10/25	Differences between correlations	H: 9; F: 9	#6 Multifactor
	10/27	Linear Regression		
10	11/01	Linear Regression	H: 9 & 15; F: 9	#7 RM ANOVA
	11/03	Multiple Regression		
11	11/08	Multiple Regression	H: 9 & 15; F: 9 & 11	#8 Correlation & Regression
	11/10	Multiple Regression: Understanding Interactions (Moderation)		
12	11/15	Multiple Regression: Moderation; Centered vs. Uncentered Results	H: 9 & 15; F: 11; Hayes (2017)	#9 Multiple Reg.
	11/17	Multiple Regression: Statistical Mediation		
13	11/22	Multiple Regression; Factor Analysis		#10 Moderation & Mediation
	11/24	Thanksgiving Holiday (No class)		
14	11/29	Factor Analysis	F: 18	
	12/01	Factor Analysis		
15	12/06	Logistic Regression	F: 20; H: 15	#11 Factor Analysis
	12/08	Logistic Regression		
	12/13	**Exam 2 Due**		Exam 2

H = Howell Chapter, F = Field Chapter.

Topic if extra time: Influences on Effect Sizes: Range Restriction and Enhancement