Spring 2022 Course Syllabus

PSY 3307-01/3307A-01: Statistics for Psychology

Jonathan Pedroza PhD

2022-01-22

Meeting Time

Lecture: **T/Th 2:30pm-3:45pm**

Activity: **T/Th 4pm-4:50pm**

Instructor: Jonathan A. Pedroza PhD

Pronouns: he/him/his

Preferred Name(s): JP, Jon

Email: japedroza@cpp.edu

Office: Virtual

Office Hours: **T 10am-12pm**, email if time does not work

Required Materials: Basic scientific calculator

Optional Materials: CRAN R for calculations

Required Text: Field, A. (2017). *Discovering Statistics Using IBM SPSS Statistics. 5th Edition. Sage Publications Ltd.*

SPSS: CPP Virtual Lab

OneDrive: OneDrive Recordings

Corequisites: PSY 3307 & PSY 3307A

Prerequisites: STA 1200 & PSY 2204

Zoom Information:

Lecture & Activity: https://cpp.zoom.us/j/83196561554

Meeting ID: 831 9656 1554

Course Description

Analytic techniques and inferential statistics useful to behavioral scientists. z and t-tests, introduction to analysis of variance, correlational designs, and selected non-parametric statistics. Selection, application, and interpretation of appropriate statistics for analysis of behavioral data.

Course Structure

This course will be conducted online (i.e., no face-to-face meetings) in a synchronous format (i.e., lectures and activities scheduled at specific times). Course content will be provided via Canvas. Lectures and activities will be conducted via Zoom. Lectures will include presentations with worked example problems, followed by practice problems. Recordings of each presentation portion will be posted on Canvas. Activities will include problem set discussion, practice problems, and SPSS tutorials.

Course Objectives

Upon completion of this course, students will be able to:

- Understand and calculate descriptive statistics
- Understand and calculate inferential statistics
- Use SPSS to compute statistics
- Read and interpret basic statistics used in the psychology literature
- Develop a foundation for success in higher level statistics and research methods courses

Grading Policy

Overview:

A total of 500 points will be available for this course based on 3 exams, 12 problem sets, and 4 SPSS assignments.

Assignments_Tests	Amount	Points_Each	Total_Points
Exam	3	100	300
Problem Sets	12	10	120
SPSS Assignments	4	20	80
Total Class Points			500

Final Grade: Your final grade will be the same for the lecture and activity based on the following scale:

Letter_Grade	Points	Percentages
A	457.5 - 500	91.5-100
A-	447.5-457	89.5-91.4
B+	437.5-447	87.5-89.4
B	407.5-437	81.5-87.4
B-	397.5-407	79.5-81.4
C+	387.5-397	77.5-79.4
C	357.5-387	71.5-77.4
C-	347.5-357	69.5-71.4
D+	337.5-347	67.5-69.4
D	307.5-337	61.5-67.4
D-	297.5-307	59.5-61.4
F	0-297.5	0-59.5

Assignments

Exams:

There will be `3` take-home exams, each worth up to `100 points`. Exams will contain vignettes and statistical problems to solve. To earn full credit, you must show all steps taken in a problem to arrive at your answer (either by hand with attached photos or by providing an R script). Exams will be open-book/open-note but must be completed individually. Each exam will be on `Canvas` where you will have a 48-hour time window from when it becomes available until it is due. No late exams will be accepted.

Problem Sets:

There will be `12` problem sets, each worth `10 points`. These problem sets can be submitted by either completing the problems by hand and attaching photos of your work on `Canvas` or by submitting a R script. Completed assignments will be awarded full credit. The first 10-15 minutes of class following a due problem set will go over the answers. Answer keys with descriptions will be available following the class period that discusses the problem set. No late problem sets will be accepted.

SPSS Assignments:

There will be `4` SPSS assignments, each worth up to `20 points`. Collaboration is encouraged; however, every student must turn in their own assignment. Each assignment will consist of:

SPSS Assignment 1: t-test

SPSS Assignment 2: ANOVA

SPSS Assignment 3: ANOVA

SPSS Assignment 4: Regression

1. Research Question & Hypothesis
2. Recoding Variables
3. Descriptive Statistics
4. Descriptive Visualization
5. Inferential Statistic
6. Visualization of Statistic Finding
7. Write-up of Inferential Statistic

SPSS can be accessed on your personal computer by using the CPP virtual lab (https://www.cpp.edu/it/virtual-software-lab/index.shtml), downloading the free 14-day trial from IBM (https://www.ibm.com/analytics/spss-trials), or purchasing the Standard GradPack 26 6-mo rental (https://cpp.onthehub.com/). Answer keys with descriptions the day after the submission. No late SPSS assignments will be accepted.

Other Policies

Academic Integrity:

Students are expected to adhere to the University's Student Conduct Code (https://www.cpp.edu/studentconduct/student-conduct-code.shtml). Academic integrity violations, including, but not limited to, cheating and plagiarism, may result in a 0 for an assignment or exam and will be reported to the Office of Student Conduct & Integrity.

Accommodations:

Reasonable accommodations will be provided for students with learning, physical, or other disabilities. Accommodations approved through the Disability Resource Center (909-869-3333) should be discussed with the instructor early in the semester to ensure appropriate implementation.

Distribution of Course Materials:

Do not copy/screenshot or retain any exam questions. Violation of this policy is grounds for disciplinary action. Distribution of other course materials, including slides, video lectures, SPSS assignments, and problem sets, is acceptable.

Mandatory Reporting:

Please note two executive orders from the CSU's Office of the Chancellor that limit what information faculty members can keep confidential. **Executive Order 1083 relates to reporting of child abuse** and **Executive Order 1096 relates to reporting of campus sexual assaults**. CSU faculty members are considered mandatory reporters. Once we are made aware of such incidents, we are required to report the incident to our Title IX officer on campus, regardless of whether the student wants the information reported.

Student Health & Well-being:

Students experiencing emotional distress may seek services through Counseling & Psychological Services. Additionally, there is the Student Health & Wellbeing for other health issues.

Still In a Pandemic

Cameras

If you feel comfortable please turn on your camera. However, I understand that you may be in a situation where you may not be able to have your camera on. I would like to see your faces, simply because I want to gauge understanding. This is much easier by seeing the looks on your faces.

Participation

Please interrupt at any time if you do not understand anything…and I mean ANYTHING. This class includes the essentials for a lot of research and practical applications in both the social and biological sciences. It is important to understand as much as possible regarding the statistical tests that we will learn during this semester. Communication is key for this class. I will also offer office hours to discuss class assignments. **Please email me if the office hours do not work for you.**

Pandemic-related Accomodations

We are still in a pandemic so please communicate with me if you are not able to meet the requirements of this class. While no late assignments will be accepted, accommodations due to pandemic-related issues will be honored. If there is no prior communication about not being able to meet the requirements for an assignment, a zero for that assignment will be assigned.

Classes Will Be Recorded

All classes will be recorded with automated closed captions and a full automated transcription of each lecture. Please email me if you have any concerns regarding the lecture being recorded to see if there are any accomodations that can be made.

Tenative Course Schedule

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Week	Dates	Lecture Topics	Activity Topics	Readings	Assignments Post Date and Due Dates (@ 11:59pm)
Week 1a	01/25/22	Introduction and review	Learning R as a calculator	Ch.1	
Week 1b	01/27/22	Research methods	SPSS Practice	Ch.1	
Week 2a	02/01/22	Frequencies, central tendency, measures of variability	Frequencies, measures of central tendency, and variability	Ch.1	Problem Set 1
Week 2b	02/03/22	z-scores	Frequencies, measures of central tendency, and variability	Ch.1	Problem Set 2
Week 3a	02/08/22	Modeling, populations, samples, and the standard error	Frequencies, measures of central tendency, and variability	Ch.2	*Problem Sets 1 and 2 due*
Week 3b	02/10/22	Modeling, populations, samples, and the standard error	sampling calculations	Ch.2	Problem Set 3
Week 4a	02/15/22	Null-hypothesis significance testing	z-test and one-sample t-test	Ch.2	*Problem Set 3 due*
Week 4b	02/17/22	Null-hypothesis significance testing	z-test and one-sample t-test	Ch.2	Problem Set 4
Week 5a	02/22/22	Study session	Study Session	No readings	*Problem Set 4 due*
Week 5b	02/24/22	Exam 1	Exam 1	No readings	
Week 6a	03/01/22	Examining Bias	SPSS Assumptions Practice	Ch.6	
Week 6b	03/03/22	Examining Bias	SPSS Assumptions Practice	Ch.6	Problem Set 5
Week 7a	03/08/22	Independent-samples t-test	t-test calculations	Ch.10	*Problem Set 5 due*
Week 7b	03/10/22	Independent-samples t-test	SPSS t-test Practice	Ch.10	Problem Set 6/SPSS Assignment 1
Week 8a	03/15/22	Paired-samples t-test	t-test calculations	Ch.10	*Problem Set 6 due*
Week 8b	03/17/22	Paired-samples t-test	SPSS t-test Practice	Ch.10	Problem Set 7
Week 9a	03/22/22	One-way ANOVA	ANOVA calculations	Ch.12	*Problem Set 7 and SPSS Assignment 1 due*
Week 9b	03/24/22	One-way ANOVA	ANOVA calculations/SPSS ANOVA Practice	Ch.12	Problem Set 8
Week 10a	03/29/22	One-way ANOVA	SPSS ANOVA Practice	Ch.12	*Problem Set 8 due* Problem Set 9/SPSS Assignment 2
Week 10b	03/31/22	Study session	Study session	No readings	
Week 11a	04/05/22	Exam 2	Exam 2	No readings	*Problem Set 9 due*
Week 11b	04/07/22	Two-way ANOVA	ANOVA calculations	Ch.14	
Week 12a	04/12/22	Two-way ANOVA	ANOVA calculations/SPSS ANOVA Practice	Ch.14	SPSS Assignment 3/*SPSS Assignment 2 due*
Week 12b	04/14/22	Two-way ANOVA/Repeated Measures	SPSS ANOVA Practice	Ch.14 and Ch.15	
Week 13a	04/19/22	Repeated Measures & Mixed-design ANOVA	ANOVA Calculations	Ch.15 and Ch.16	
Week 13b	04/21/22	Repeated Measures & Mixed-design ANOVA	SPSS ANOVA Practice	Ch.15 and Ch.16	Problem Set 10/*SPSS Assignment 3 due*
Week 14a	04/26/22	Correlation	Correlation calculations	Ch.8	Problem Set 11/*Problem Set 10 due*
Week 14b	04/28/22	Correlation and regression	Correlation and Regression SPSS Practice	Ch.8 and Ch.9	SPSS Assignment 4
Week 15a	05/03/22	Regression	Regression calculations	Ch.9	Problem Set 12/*Problem Set 11 due*
Week 15b	05/05/22	Study session	Study session	No readings	*Problem Set 12 and SPSS Assignment 4 due*
Finals Week	05/09/22 - 05/13/22	Exam 3	Exam 3	No readings	

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