UNIVERSITY OF NEW MEXICO SYLLABUS
PSY2510: STATISTICAL PRINCIPLES FOR PSYCHOLOGY
DR. RON SALAZAR

GENERAL INFORMATION

Instructor: Ron Salazar, Ph.D. Phone: 505-925-8634, leave message
E-mail: rasalaz@unm.edu Section/Term: 501/ Fall 2022 Credit Hours: 3
Room: CT103, Tuesdays & Thursdays 3:00-4:15pm
Office Hours: Tues & Thurs 2:00-3:00pm

Course Description:

This course covers introductory-level topics in statistics that are applicable to psychological research. Both descriptive and inferential statistics are covered. Topics include applying statistical formulas to psychological data and interpreting the results of statistical analyses.

Student Learning Outcomes:

Upon completion of the course students should be able to:

1. Identify statistical methods used in the analysis of psychological research.
2. Apply appropriate statistical methods to the analysis of data.
3. Interpret the results of statistical analyses of data.
4. Evaluate the use of statistics in psychological literature.

SPECIFIC LEARNING OUTCOMES

Upon successful completion of the course, the student will be able to …

1. Demonstrate an understanding of the differences between descriptive and inferential statistics.

a. Define descriptive and inferential statistics.
b. Distinguish between descriptive and inferential statistics and give examples

2. Demonstrate an understanding of the differences between parametric and nonparametric statistics

a. Define population and a sample.
b. Distinguish between a population and a sample
c. Define statistics and parameters.
d. Distinguish between a parameter and a statistic and give examples
c. Classify data with respect to the four levels of measurement: nominal, ordinal, interval and ratio

3. Develop the ability to gather information from multiple sources and synthesize this information.

4. Develop skills to critically evaluate studies which incorporate statistics

5. Compute the different statistical tests manually and with a calculator and explain results

a. Compute and explain measures of central tendency and find the mean, median and mode of a sample and a population
b. Compute and explain variability and find the range, variance and standard deviation of a sample
c. Explain how to interpret percentiles
d. Calculate and interpret standard scores (z-scores and t-scores)
f. Discuss hypothesis testing and how to state the null and alternative hypothesis
g. Interpret the level of significance of a hypothesis test (p-values)
h. Identify type I and type II errors
i. Perform a one and two sampled t-test and determine significance
j. Explain an F-test, calculate and interpret a one-way ANOVA
k. Calculate and interpret a two-way ANOVA
l. Explain regression and how to find the correlation coefficient
m. Predict y-values using regression the equation
n. Explain the difference between parametric and non-parametric statistics
o. Calculate and interpret non-parametric tests such as the Wilcoxon rank test, Spearman rank correlation, Kruskal-Wallis test, etc.
p. Explain simple and classical probability
q. Calculate permutations, combinations and binomial probability

6. Graph different types of data manually.

a. Construct a frequency distribution including midpoints, relative frequencies and cumulative frequencies
b. Construct frequency histograms and polygons
c. Graph and interpret data sets

7. Graph data, compute descriptive statistics, t-tests and ANOVA using SPSS and MS EXCEL.

Use SPSS and MS EXCEL to graph data, to compute descriptive statistics, t-tests and ANOVAs

Attendance & Grading Policy:
Students enrolled for credit, credit/no credit, or audit **are expected to be actively engaged on-line and work on all assignments, turn in homework, quizzes and exams on-time**. Students may be dropped from the class if they do not keep up with assignments and are not responding to instructor's emails or on-line messages. Since this is an on-line course, students need to be actively engaged in course work every week. There will be a calendar of when assignments are due. The calendar and announcements will be on UNM Learn/Blackboard as well as here on the syllabus. Students must take the initiative in arranging with me to make up missed work. Your grade will be affected due to missed assignments, quizzes and exams. It may result in a lower grade or failing class. A student who misses the first-class meeting and has not contacted the instructor, or who misses two consecutive class meetings in the first week may be dropped from the course.

Four exams will be given throughout the semester. The exams will consist of definitions, short answer and calculation of data sets using various statistical formulas. All exams are on-line, and you will have one week to do the exam.

The student must have a calculator with at least a square root key and bring it to class every session along with the textbooks.

Students will be introduced to SPSS and MS EXCEL for various statistical analyses.

Grading:

Homework assignments & quizzes = 30% (weighted)
Exams = 70%. (weighted)

Textbooks:

Willard, C.A. (2020). ***Statistical Methods: An Introduction to Basic Statistical Concepts***. **REQUIRED. ISBN: 978-0-367-20352-8**
Udan, T.A. (2022). ***Statistics in Plain English***. **Recommended. ISBN: 978-0367342838**

Student Responsibilities

In order to be successful in this course each student must take responsibility for the following:

•Read the required readings
• Attend class and turn in-class assignments in at end of class
• Keeping up with the calendar of assignments
• Contacting the instructor by email immediately when there is a true emergency that prevents submitting work by the due date or attending class
•Having consistent and reliable access to a computer and to the internet
• Checking regularly to view grades and comments from me
• Posting and submitting quizzes before midnight on due date
• Adhering to the Student Code of Conduct
• Following proper protocol for withdrawing from class if needed

Academic Honesty:

Students are expected to comply with the academic policy of UNM – Valencia. Any academic dishonesty will result in expulsion from the course. Your writing assignments must not be plagiarized. Plagiarism means using or copying language and/or ideas without acknowledging where you got them. Plagiarism includes copying another student's paper or ideas, downloading and turning in papers from the Internet, copying passages from sources without proper documentation, or rephrasing an author's ideas and them presenting them as your own original thoughts. To learn how to avoid plagiarism you can talk to me or consult a tutor. If you would like even more information about plagiarism, The Owl at Purdue website offers sage advice: http://owl.english/purdue.edu/owl/resource/589/01

If you do plagiarize, you will face one or more of the following consequences: failing the assignment, failing the course, or facing disciplinary action taken by the University. The University considers plagiarism a serious form of academic dishonesty or stealing.

Academic Integrity

Having academic integrity is paramount to your success in any class. Plagiarism or cheating is not tolerated. Any instance of this will result in a grade of zero for that assignment. Here is the link to the UNM Academic Dishonesty Policy: https://policy.unm.edu/regents-policies/section-4/4-8.html. The policy states:

Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or who otherwise fails to meet the expected standards. Any student judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course.

Academic Dishonesty is defined as:

"Academic dishonesty" includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.

STUDENTS WITH DISABILITIES: If you have a documented disability, the Equal Access Services office will provide me with a letter outlining your accommodations. I will then discuss the accommodations with you to determine the best learning environment. If you feel that you need accommodations, but have not documented your disability, please contact Equal Access Services at 925-8910.

Addendum to the Syllabus

Classroom policies and procedures.

I have seen many behaviors over the course of my years of teaching that I have found very disrespectful to myself and other students. I feel it is necessary to have these policies to try and bring civility back to the classroom.

1. **Absences.** Attendance is required for all class periods. I take attendance very seriously. If you cannot make it to class on a regular basis, I would strongly suggest finding another course. **DO NOT** make doctor's appointments during my scheduled class periods. Also, do not make appointment to meet with other instructors for conferencing during my scheduled classes. You will be counted absent in these cases.

2. **Laptops.** Students will not be allowed to use a laptop in this class unless it is for the sole purpose of taking notes. Any other use such as surfing the internet, IM, e-mail or Facebook, etc. is not allowed in my class. If it is discovered that this is occurring the student will be told to shut off the laptop and not bring it to class again.

3. **No Headphones**. You are not allowed to have headphones in your ears during class.

4. **Cell Phones**. Cell phones must be turned off during class. Unless it is an emergency then you need to have your cell phone turned on silent & vibrate mode. If you must take the call, please leave the classroom and talk outside. Text messaging is not allowed in class. Anyone caught texting in class while be warned and if it occurs again, told to leave the class.

5. **Homework from other classes**. You will not be allowed to do homework for other classes during my class period. Please do it before or after my class.

6. **Books, magazines, newspapers, etc**. are not allowed in my class. If you are caught reading other materials not related to the class (such as the textbook), you will be asked to refrain from doing so.

7. **Respecting other students' opinions**. I firmly believe that we must have respect for each other and to try and be civil to one another. Anyone swearing, hollering or being disrespectful to myself or others will not be tolerated, and the person will be asked to leave the class.

STATISTICAL Principles for Psychology

WEEK	LECTURE/EXAMS	CHAPTER
1	Intro to statistics/ descriptive vs. inferential statistics/scales of measurement. /measures of central tendency	Willard- Chapter 1 Do YouTurns Chapter 1 & other homework sheet
2	Frequency distributions & graphing / Intro to SPSS	Willard- Chapter 2 Do YourTurns Chapter 2 and other homework assigned
3	Measures of central tendency/ variability Characteristics of Distributions/ ***EXAM #1 (9/5-9/14)***	Willard – Chapter 3 & 4 Do YourTurns Chapter 3 & 4 and other homework assigned
4	Percentiles and Standard Scores ***EXAM # 1:***	Willard- Chapter 5 Do YourTurns Chapter 5 and other homework assigned
5 & 6	Regression and correlation/ SPSS- bivariate regression & correlation***/ EXAM # 2***	Willard- Chapter 14/ Handout on Regression/Correlation Do YourTurns Chapter 14 and other homework
7	Intro to inferential statistics/ hypotheses testing/sampling & sample distributions	Willard- Chapters 7, 8, &9 Do YourTurns Chapters 7,8 & 9 and other homework
8 & 9	Differences between the means of 2 groups/ SPSS t-tests ***EXAM # 3***	Willard – Chapter 10 Do YourTurns Chapter 10 and other homework
10	Intro to research design	Handouts
11	Topics in probability	Willard- Chapter 6 Do YourTurns Chapter 11 and other homework

12 & 13	Simple analysis of variance Between Subjects Design (One Way ANOVA) & Within Subjects Design (Repeated Measures ANOVA)	Willard- Chapter 13 & Handouts Assigned Problems from Handouts
14 & 15	Two factor analysis of variance (Two Way ANOVA)	Handouts Assigned Problems from Handouts
16	Non-parametric statistics ***FINAL EXAMINATION***	Willard – Chapter 15/16 & Handouts Do YourTurns Chapter 15 and other homework