

COURSE SYLLABUS

Lewis & Clark College
Graduate School of Education and Counseling

Course Name	Statistics for Professional Practice
Course Number	CTSP 531 Section 2
Term	GS/23
Department	Counseling, Therapy & School Psychology
Textbooks/Materials	Salkind & Frey (2020). <i>Statistics for People Who (Think They) Hate Statistics</i> (7 th Ed), Thousand Oaks: Sage
Faculty Name	Douglas Jenkins
Faculty Phone/E-mail	503 754-4863 LC22-0015@clark.edu
Faculty Office	York 118
Advising Hours	By appt

Catalogue Description:

This course covers the descriptive and inferential statistics practitioners use in their professions. There is an overview of quantitative research designs with the focus on understanding and application of data analysis and interpretation. Coverage includes basic descriptive and inferential statistics, appropriate interpretation of statistical results, and real-world presentation of data.

Course Description:

Overview of research design with focus on data analysis, descriptive and inferential statistics, and interpretation of results. Hypothesis testing, normal distribution, statistical power and effect size. Significance tests including, z-test, t-test, analysis of variance, regression, within subjects analysis of variance and nonparametric tests.

Course Goals and Objectives:

The primary goal of this class is to have students gain a conceptual and computational understanding of basic descriptive and inferential statistics as well as developing skill in interpreting those findings. An additional goal includes include further understanding of the research process, including issues surrounding operationalization which will allow students to critically analyze instruments used and published research. These skills will also help students conduct independent research.

The objectives are to provide opportunities to learn and apply the skills necessary to appropriately conduct and interpret basic statistical analyses. Emphasis will be on: data processing, data analysis, appropriate use and interpretation of statistical tests, drawing conclusions from data, validity of conclusions, reporting results, discussion of results, and critiquing research.

By the end of the semester students will be able to

- Define, operationalize, and measure constructs
- Identify and compute descriptive statistics
- Identify data analysis appropriate for different types of research designs.
- Understand the hypothesis testing process
- Write research and null hypotheses
- Understand and compute basic inferential statistics

- Use the computer to perform descriptive and inferential statistical analysis
- Understand and compute reliability analyses
- Draw appropriate conclusions from data analysis
- Use APA style to write up results of statistical analyses.
- Understand the research process and use this understanding to identify strengths and weakness of published research.

From the NASP standards

The following NASP domains are addressed in this course:

2.1 Data-Based Decision Making and Accountability

School psychologists have knowledge of varied models and methods of assessment and data collection for identifying strengths and needs, developing effective services and programs, and measuring progress and outcomes.

2.5 School-Wide Practices to Promote Learning

School Psychologists have knowledge of school and systems structure, organization, and theory; general and special education; technology resources; and evidence-based school practices that promote learning and mental health.

2.9 Research and Program Evaluation

School psychologists have knowledge of research design, statistics, measurement, varied data collection and analysis techniques, and program evaluation sufficient for understanding research and interpreting data in applied settings.

From ACA: Goal Statement

The professional counselor is able to conduct research; interpret clearly the implications of research data to professional staff members, parents, students, clients, referral agencies, and community resources; and use the results in counseling and in program evaluation, program development, and program revision. (Engels, D.W. & Associates (2004). *The professional counselor. Portfolio, competencies, performance guidelines and assessment.* (3rd ed.) Alexandria, VA: American Counseling Association

Course Calendar:

See attached below

Required Texts:

Salkind & Frey (2020). *Statistics for People Who (Think They) Hate Statistics* (7th Ed), Thousand Oaks: Sage

American Psychological Association (2019). *Publication manual of the American Psychological Association.* (7th Ed.). Washington, DC: American Psychological Association.

Supplementary Texts & Workbooks

Statistical Analysis in JASP: A Guide for students

Green, S.B. & Salkind, N.J. (2011). *Using SPSS for Windows and Macintosh: Analyzing and Understanding Data.* (6th Ed.). Upper Saddle River NJ: Prentice Hall

Leong & Austin (1996). *The psychology research handbook. A guide for graduate students and research assistants.* Thousand Oaks, CA: Sage Publications

Bell, D.J., Foster, S.L. & Cone, J. D. (2019) *Dissertations and Theses from Start to Finish: Psychology and Related Fields* (3rd Ed) Washington, DC: American Psychological Association.

Course Requirements: See below

CPSY Departmental Attendance Policy/Requirements:

Class attendance is expected and required. Any missed class time will be made up by completing extra assignments designed by the instructor. Missing more than ten percent of class time *may* result in failure to complete the class. This would be 4.5 hours of a 45 hour class (3 credits), 3.0 hours for a 30 hour class (2 credits) or 1.5 hours for a 15 hour class (1 credit.) In case of extreme hardship (including COVID related illness) and also at the discretion of the instructor, a grade of incomplete may be given for an assignment or the entire course. In such cases, the work to be submitted in order to remove the incomplete must be documented appropriately and stated deadlines met. Students are expected to be on time to class and tardiness may be seen as an absence that requires make-up work. Please note that exceptions to these policies may be worked out if you have an illness or family situation related to COVID-19

Computer and Cell Phone Use: Please be respectful of others and use laptops and/or cell phones during class for classroom activities (note taking, etc) only. Use of laptops/cell phones for *non-classroom* activities during class time will result in a reduction of participation points. Cell phones must be silenced (if necessary vibrate ok) and text messaging is not allowed during class time unless emergency. If there is an emergency you may exit the class to use your cell. Laptops and cells phones may of course be used on breaks. If alternate learning needs require additional accommodations please let me know at the beginning of the semester.

Accommodations for Students with Special Needs and/or Disabilities:

If you have a disability that may impact your academic performance, you may request accommodations by submitting documentation to the Student Support Services Office in the Albany Quadrangle (503-768-7192). After you have submitted documentation and filled out paperwork there for the current semester requesting accommodations, staff in that office will notify me of the accommodations for which you are eligible. Please notify me of any special learning considerations that I should be aware of so that we can work together to make the appropriate accommodations.

Additional Policies

This course adheres to the general policies outlined in the catalog and student handbook of the Lewis & Clark Graduate School of Education and Counseling. This includes full adherence to the following policies:

- Nondiscrimination: go.lclark.edu/gsec-nondiscrimination;
- Standards for professional student conduct and academic integrity: go.lclark.edu/gsec-conduct;
- Sexual misconduct: go.lclark.edu/titleIX.

Authorization Levels: All levels

Evaluation and Assessment:

Each assignment will be graded via a point system. Generally speaking, the following grades can be associated with the points for each assignment and for the final grade. Final grade will based off of

One absence without arrangement or explanation, 2nd absence requires a make-up of class assignments, an additional assignment (such as an additional write up or an article summary) and explanation.

Assignments: The graded requirements of the course differ slightly depending on your program. Overall the requirements of the course include: in class & computer assignments, homework assignments, research write-ups; and a program evaluation project(s) and/or thesis development.

See attached for specific assignments and points

Evaluation and Assessment:

Each assignment will be graded via a point system. Generally speaking, the following grades can be associated with the points for each assignment and for the final grade

91% of points possible	-	A
90% points possible-		A-
88 – 89% or points possible	-	B+
83 - 87% of points possible	-	B
80 – 82% points possible	-	B-
78 – 79% or points possible	-	C+
73 - 77% of points possible	-	C
70 – 72% of points possible-		C/No Credit-
Less than 70% -		D/F No Credit

Please note that if the basic requirements for an assignment (aside from the homework) the points given will be associated with a B⁺. If one exceeds the requirements of the assignment there point total will improve accordingly. Similarly, if the assignment does not meet the requirements point total will decrease accordingly. The points associated with each assignment are attached.

Late papers and assignments: Any assignments turned in late (without previous permission) will automatically receive a 10% reduction in grade.

Partial Bibliography:

- Cone, J.D. & Foster, S.L. (1993). *Dissertations and theses from start to finish*. Washington, DC: American Psychological Association.
- Faherty, V.E. (2008). *Compassionate Statistics. Applied Quantitative Analysis for Social Services*. Thousand Oaks, CA: Sage.
- Galvan, J.L. (2006). *Writing Literature Reviews (3rd Ed.)* Los Angeles: Pyczak Publishing.
- Heppner, P.P., Kivlighan, D. M., & Wampold, B.E. (2008). *Research Design in Counseling (2nd Ed.)*. Pacific Grove, CA: Brooks/Cole.
- Holcomb, Z.C. (2007). *Interpreting Basic Statistics (5th Ed.) A Guide and Workbook Based on Excerpts from Journal Articles*. Los Angeles: Pyczak Publishing.
- Holcomb, Z.C. (1997). *Real data. A statistics workbook based on empirical data*. Los Angeles: Pyczak Publishing.
- Holcomb, Z.C. (2007). *SPSS Basics: Techniques for a First Course in Statistics (3rd Ed.)* Los Angeles: Pyczak Publishing

- Pryzak, F. (2008). *Evaluating Research in Academic Journals* (4th Ed.) Los Angeles: Pyrczak Publishing.
- Patten, M.L. (2009). *Understanding Research Methods* (7th Ed.) Glendale CA: Pyrczak Publishing
- Mertler, C.A. & Vannatta, R. A. (2005). *Advanced and Multivariate Statistical Methods. Practical Application and Interpretation* (3rd Ed.) Glendale, CA: Pyrczak Publishing
- Rosenthal, J.A.(2001). *Statistics and Data Interpretation for the Helping Professions*. Belmont, CA: Wadsworth/Thompson Learning
- Rubin, A. (2007). *Statistics for Evidence-Based Practice & Evaluation*. Belmont, CA: Wadsworth/Thompson Learning
- Salkind, Neil J. (2014). *Statistics for People Who (Think They) Hate Statistics* (5th Ed). Thousand Oaks, CA: Sage.

Spring Semester 2023 Tasks & Assignments*

School Psychology*

Homework and in-class quizzes	150
Class Participation/In Class Assignments	70
Special Assignment	15
Instrument Development	10
Statistical Test write-ups	105

Thesis Students*

Homework and in-class quizzes	150
Class Participation/In Class Assignments	70
Special Assignment	15
Thesis Method Section	10
Statistical Test s write-ups	105

*The assignments and points may change as the semester progresses

Final grades will be based on 350 points and will be distributed as follows:

319 and above	(91% of total points)	-	A
315 - 318	(90% of total points)	-	A-
308 - 314	88% or total points)	-	B+
290 - 307	(83% of total points)	-	B
280 - 289	(80% of total points)	-	B-
Below 280	(less than 80% of total points)		C/No credit
Below 245	(less than 70% of total points)		D/F -/No Credit

<u>Date</u>		<u>Readings for Stats 4 those who Hate Stats</u>	<u>Tentative Computer Exercise</u>	<u>Hmwk/ Assignment Due Date</u>	<u>Assignment Points</u>
Jan-12	Overview of class Review of Research Methodology –Research paradigms Types of Research Overview of process SPSS overview	Paradigms methods & methodology article	SPSS- intro setting up a data file Frequencies Descriptives		Class participation

<u>Date</u>		<u>Readings for Stats 4 those who Hate Stats</u>	<u>Tentative Computer Exercise</u>	<u>Hmwk/ Assignment Due Date</u>	<u>Assignment Points</u>
	Review of Descriptive Statistics	Over view Appendix SPSS			
Jan 19	Class overview Operationalization Review of Descriptive Stats Levels of measurement Tables Figures Charts Correlation Scattergrams Begin Assessment Development	Review Descriptives Ch 21-3 Ch 5 Computing Correlation Coefficients Correlation	Participants	Hmwk 1 Reflections on Reading (Notecards) 1	Each homework 7 pts Each Notecard 3 pts
Jan 26		Chapters 1-3 Descriptive Statistics and Measures of Central Tendency	Charts and Figures	Hmwk 2 Notecard 2 In class assignment 10 points	
Feb 1	Overview Tests Norms and Test Standardization Correlation Finalize Instrument	Participants and Sampling Graphical Presentation Ch 4 Ch 5 Computing	Reliability & Validity	Homework 3 Notecard 3	

<u>Date</u>		<u>Readings for Stats 4 those who Hate Stats</u>	<u>Tentative Computer Exercise</u>	<u>Hmwk/ Assignment Due Date</u>	<u>Assignment Points</u>
		Correlation Coefficients			
Wed Feb 8	Null and research Types of Hypotheses Normal Curve and other Distributions z scores and other standard Scores	Ch 6 intro to reliability and validity Chap 7 Hypotheticals Ch 8 Normal curve			
Feb 15	Intro to Inferentials Z test Effect size	9 & 10 Stat sig and one sample z	t	Hmwk 5 Notecard 5	
Feb 22	Indep t	11 indep t	Indep t	Homework 6 Notecard 6	
Mar 1	ANOVA: one-way follow-up tests	Chap 13 ANOVA	ANOVA Factorial ANOVA	Homework 7 Notecard 7 <i>t-test write-up due</i>	
Mar 8	factorial	Chap 14 factorial		Homework 8 Notecard 8	
Mar 15	Correlational Research Hypo of Association	Ch 15	Regression	Homework 9 Notecard 9 Due <i>ANOVA/ Factorial write-up due</i>	Self care
Mar 23	Regression	Chap 16 regression			

<u>Date</u>		<u>Readings for Stats 4 those who Hate Stats</u>	<u>Tentative Computer Exercise</u>	<u>Hmwk/ Assignment Due Date</u>	<u>Assignment Points</u>
Mar 29	<i>Spring Break</i>		<i>Spring Break</i>		
Spring Break					
Apr 5	Non- Parametrics Chi Square Cramer's Phi	Ch 17 Chi Sq 19 pivot tables	Chi Square Non parametrics	Homework 10 Notecard10	
Apr 12	Before-After Designs Paired T-tests Within Ss ANOVA Advanced Tests Bring Pre-Post Data to class Thesis updates	Chap 12 Paired t W/in Ss ANOVA Sprinthal chapter Ch 18 advanced tests Work on Methods Sections			
April 19	Final Class Meeting Paired T-test write ups in class Thesis Presentations	Chapter 12	Paired-t Additional Readings (Sprinthal) W/in Ss ANOVA	Chi square write-up Due Homework 11 Notecard 11	

<u>Date</u>		<u>Readings for Stats 4 those who Hate Stats</u>	<u>Tentative Computer Exercise</u>	<u>Hmwk/ Assignment Due Date</u>	<u>Assignment Points</u>
	Reflections Final Quiz				
April 29	Paired t-test write-up due Thesis Proposals/Meth ods sections due			Paired/Win Ss write up	