

COURSE SYLLABUS
Lewis & Clark College
Graduate School of Education and Counseling

Course Name	Research Methods and Statistics II
Course Number	CPSY 531 Section 2
Term	GS/19
Department	Counseling Psychology
Textbooks/Materials	Sprinthall, R.C. (2012). <i>Basic Statistical Analysis</i>. (9th ed.) Needham Heights, MA: Allyn & Bacon.
Faculty Name	Carol Doyle
Faculty Phone/E-mail	503 768-6067 cdoyle@lclark.edu
Faculty Office	Rogers Hall 317
Advising Hours	Tues, Thurs, by appt Friday 10:00 – 1:00

Catalogue Description:

Research design and data analysis, inferential statistics. Simple and complex designs, normal distribution, z-test, t-test, analysis of variance, statistical power, simple regression. Overview of nonparametric and multivariate analysis.

Course Description:

This course covers the descriptive and inferential statistics practitioners need for use in their practices. Focus is on understanding and application of basic descriptive and inferential statistics, appropriate interpretation of statistical results, and real-world presentation of data.

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 results. As a continuation of CPSY 530, an additional goal is for students to further their understanding of the research process, including issues surrounding measurement, which will allow them to critically analyze published research and/or be able to conduct independent research.

The objectives are to provide opportunities to learn and apply the skills necessary to appropriately conduct 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:

Sprinthall, R.C.(2012). *Basic Statistical Analysis.* (9th ed.) Needham Heights, MA: Allyn & Bacon.

Supplementary Texts & Workbooks

American Psychological Association (2010). *Publication manual of the American Psychological Association.* (6th Ed.). Washington, DC: American Psychological Association.

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

Cone, J.D. & Foster, S.L. (1993). *Dissertations and theses from start to finish.* 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 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.

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.

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 (x7156). 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.

Computer and Cell Phone Use: Using computers or cellphones for *non-classroom* activities during class time will result in a loss of class 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.

Assignments: The graded requirements of the course differ slightly depending on your program. Overall the requirements of the course include: in class assignments, homework assignments, computer assignments, research write-ups; and group 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

93% of points possible	-	A
90 – 92% 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/No Credit
Below 70% of points possible	-	C-/No Credit

Please note that if the basic requirements for an assignment 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.

Authorization Levels: all

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: Pyczak Publishing.

Patten, M.L. (2009). *Understanding Research Methods (7th Ed.)* Glendale CA: Pyczak Publishing

Mertler, C.A. & Vannatta, R. A. (2005). *Advanced and Multivariate Statistical Methods. Practical Application and Interpretation (3rd Ed.)* Glendale, CA: Pyczak 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 2019 Assignments*

<u>School Psychology</u>		<u>M.S. Thesis Students</u>	
Homework	100	Homework	100
Class Participation/Assignments	80	Class Participation/Assignments	80
Statistical Test write-ups	125	Statistical Test s write-ups	125
"Evaluation" Grp Project	75	Thesis Work	50
		Thesis Presentation/additional write ups	25
'Final' (Take Home)	70	'Final' (Take Home)	70

*The assignments and points may change as the semester progresses

Final grades will be based on 450 points and will be distributed as follows:

410 and above	(91% of total points)	-	A
405 - 409	(90% of total points)	-	A-
396 - 404	88% or total points)	-	B+
374 - 395	(83% of total points)	-	B
360 - 374	(80% of total points)	-	B-
Below 360 -	(less than 80% of total points)		C/No credit
Below C-	(less than 70% of total points)		C -/No Credit

Tentative Class Schedule/Important Dates Spring 19

<u>Date</u>	<u>Tentative Topics</u>	<u>Tentative Computer Exercise</u>	<u>Sprinthall Readings for Class</u>	<u>Hmwk/ Assignment Due Date</u>	<u>Points</u>
Jan 9	Overview of class Operationalizing Scales of measurement Intro to SPSS	SPSS intro setting up a data file Frequencies			Class participation 10 pts
Jan 16	Review of Research Methodology Research paradigms Review of descriptives Tables, Figures Charts Bivariate Analysis	Descriptives Participants Charts and Figures Crosstabs	Ch 1-3 Ch 9 Ch 18 pp. 542-553 Paradigm Article	Homework 1 Due	10 pts

<u>Date</u>	<u>Tentative Topics</u>	<u>Tentative Computer Exercise</u>	<u>Sprinthall Readings for Class</u>	<u>Hmwk/ Assignment Due Date</u>	<u>Points</u>
Jan 23	Measurement concepts Tests & Test Construction Norms and Test Standardization Normal Curve and z scores Histograms	DAVID Douglas ASSESSMNT Given	Ch 4 -6 Ch 17 pp. 500-505 (through definition of reliability)	Homework 2 due	10 pts
Jan 30	Intro to Inferentials Statistics & Parameters Parameter Estimates and Hypothesis Testing Confidence intervals z- test One sample t-	Distributions Confidence Intervals One sample t	Chapter 7 & 8	Homework 3 due	10 pts
Feb 6	Inferentials Statistics & Parameters Parameter Estimates and Hypothesis Testing Confidence intervals z- test One sample t-	Confidence Intervals One sample t	Chapter 8	Homework 4 due <i>Participant write-up due (Thesis people only)</i>	10 pts 10 pts
Feb 13	Hypothesis Testing Hypothesis of Difference Independent t-tests	Indep t	Sprinthall Ch 10 (review ch 9)	Homework 5 due	10 pts
Feb 20	ANOVA Post Hoc Tests Effect Size	ANOVA	Sprinthall Ch 12 pp. 330-350	Homework 6 due <i>Independent t write up due</i>	10 pts 30 pts

<u>Date</u>	<u>Tentative Topics</u>	<u>Tentative Computer Exercise</u>	<u>Sprinthall Readings for Class</u>	<u>Hmwk/ Assignment Due Date</u>	<u>Points</u>
Feb 27	Factorial ANOVA	Factorial ANOVA	Sprinthall Ch 12 pp. 350-360		
Mar 6	Hypothesis of Association Correlational Research – Scattergrams Regression – Predicting relationships (if time)		Sprinthall Ch 11 & 14	Homework 7 due <i>ANOVA/ Factorial write-up</i>	10 points 35 points
Mar 13	NonParametrics Chi Square Tests for Ordinal Data Choosing the Appropriate Test	Non Parametrics Chi Square Ordinal Non-Parametrics	Sprinthall Ch 13 & 16	Homework 8 due	10 pts
Mar 20	Measurement Review of Reliability and Validity	Reliability & Validity	Sprinthall Ch 17 Additional Readings	Homework 9 due <i>Chi square write up due</i>	10 pts 25 pts
Mar 27	<i>Spring Break</i>	<i>Spring Break</i>			
Apr 3	Before-After Designs Paired T-tests Within Ss ANOVA Bring Group Data to class	Paired t W/in Ss ANOVA	Ch 15	Homework 10 due <i>Reliability write-up due (Thesis people only)</i>	10 pts
Apr 10 Grp project data	Catching Up Analysis/Prep for Group Projects Bring Pre-Post Data to class Thesis updates			<i>Paired t-test write up/w/in SS write-up due</i>	30 pts 5 points

<u>Date</u>	<u>Tentative Topics</u>	<u>Tentative Computer Exercise</u>	<u>Sprinthall Readings for Class</u>	<u>Hmwk/ Assignment Due Date</u>	<u>Points</u>
Apr 17 DD Presenta tion	Group Project/ Due Reflections	Last Class Session			75 pts
Apr 24	Exam due Thesis Proposals/Methods sections due				70 pts 50 pts