

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

Course Name	Research Methods and Statistics II
Course Number	CPSY 531 Section 1
Term	GS/12
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	Tuesdays 3:30 – 5:30 Friday 11 – 1

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.
- Interpret statistical analyses appropriately for a variety of audiences
- Understand the research process and use this understanding to identify strengths and weakness of published research.

From the NASP standards, the expectation is that students will be able to:

“Evaluate research, translate research into practice, and understand research design and statistics in sufficient depth to plan and conduct investigations and program evaluations for improvement of services”

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

COAMFTE

From the Marriage & Family Therapy Core Competencies & MCFT program standards

- Understand research and program evaluation methodologies, both quantitative and qualitative, relevant to MFT and mental health services.
- Demonstrate an understanding of process and outcome, research design, methodology, basic statistics, with research knowledge in individual and family counseling
- Understand the legal, ethical, and contextual issues involved in the conduct of clinical research and program evaluation.
- Recognize informal research processes involved in therapy, own biases relative to research
- Determine the effectiveness of clinical practice and techniques.
- Utilize research and technology applications in marital, couple, and family counseling
- Recognize opportunities for therapists and clients to participate in clinical research when appropriate

Course Calendar:

See attached

Required Texts:

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

*(I ordered some books as a bundle with a Student version of SPSS. If you didn't buy book from bookstore you may not have received the "bundle" This means that you will not have SPSS to use at home. Differences between earlier editions of text are not known.

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 attached

Attendance Requirements:

Class attendance is expected and required. Any missed class time will be made up by completing extra assignments designed at the by the instructor. More than one missed class session (3.25 hours in the case of a three-credit hour class; 2.25 hours for a two-credit class; 1.25 hour for a one-credit class) may constitutes a failure to complete the class. In extreme hardship situations, and also at the discretion of the instructor, a grade of incomplete may be given for an assignment or for the entire course. In such cases, the work to be submitted in order to remove the incomplete must be documented appropriately and stated deadlines must be met.

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

Assignments

As in 530, the graded requirements of the course differ dependent on your program. Overall the requirements of the course include: in class assignments, homework assignments, computer assignments, statistical analysis portfolio which include statistical result section write-ups; thesis proposals and group project(s).

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

90% of points possible	A
80% of points possible -	B
70% of points possible -	C
60% of points possible -	D
less than 60% of points possible	F

Additionally the determination of grades are as follows. If one fulfills the minimum expectations for a course assignment, the grade given will be equivalent to a B+ (approximately 85% of the possible points) If the assignment exceeds the minimum expectations, the grade improves accordingly. If the assignment does not meet minimum expectations, and/or is missing any components, a lower grade will be assigned

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.

- 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.
- 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

Spring Semester 2012 Assignments

<u>School Psychology</u>			<u>M.S. Thesis Students</u>		
Homework		110 points	Homework		110 points
Class Participation		70 points	Class Participation		70 points
Work/Write-Ups	150 points		Computer Work/Write-Ups	150 points	Computer
Group Projects			Group Project		
Survey Presentation		50 points	Survey Presentation		50 points
"Program Evaluation"	150 points		Thesis Work		150 points
Statistics Portfolio		150 points	Statistics Portfolio		150 points
Final Discussion		20 points	Final Discussion		20 points

Final grades will be based on 700 point total and will be distributed as follows:

630 and above	(90% of total points)	-	A
560 - 629	(80% of total points)	-	B
490 - 559	(70% of total points)	-	C
420 - 489	(60% of total points)	-	D
below 420	(less than 60% of total points)	-	F

Tentative Schedule of Classes/Assignments: See Attached

<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>
-------------	-------------------------	------------------------------------	--------------------------------------	----------------------------------	---------------

<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 11	Overview of class Operationalizing	SPSS intro setting up a data file Frequencies			Class participation 5 points
Jan 18	Review of descriptives Tables Figures Charts Bivariate Analysis	Descriptives Participants Charts and Figures CrossTabs	Ch 1-3 Ch 9 pp. 198- 209 Ch 18 pp. 542-553	Hmwk 1 due Computer 1	10 pts 10 pts
Jan 25	Measurement concepts Tests Construction Norms and Test Standardization Normal Curve and z scores Histograms	Work on Survey Project	Ch 4 -6 Ch 17 pp. 500-505 (through definition of reliability)	Hmwk 2 due	10 pts
Feb 1	Survey Presentation Intro to Inferentials Statistics & Parameters z- test	SURVEY	Chapter 7	Survey Participant write-up (Thesis people only)	50 pts
Feb 8	Parameter Estimates and Hypothesis Testing One Sample t- test Confidence intervals	Confidence Intervals One sample t	Sprinthall 8 & 9	Hmwk 3 One sample t write up	10 pts 25 pts
Feb 15	Hypothesis of Difference	Indep t	Sprinthall Ch 10	Hmwk 4 Independent t write-	10 pts 25 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>
	Independent t-tests			up	
Feb 22	ANOVA Post Hoc Tests	ANOVA	Sprinthall Ch 12 pp. 330-350	Hmwk 5	
Feb 29	Factorial ANOVA	Factorial ANOVA	Sprinthall Ch 12 pp. 350-360	ANOVA write-up	30 pts
Mar 7	Hypothesis of Association Correlational Research – Correlation Scattergrams		Sprinthall Ch 11	Hmwk 6	10 pts
Mar 14	Measurement Review of Reliability and Validity	Reliability	Sprinthall Ch 17	Hmwk 7 Reliability <i>Reliability write-up (Thesis people only)</i>	10 pts 10 pts
Mar 21	NonParametrics Chi Square Tests for Ordinal Data	Non parametrics Chi Square	Chap 13 & 16	Homework 8 <i>Chi square write-up</i>	10 pts 20 pts
Mar 28	Spring Break	<i>Spring Break</i>			
Apr 4	Before-After Designs Paired T-tests Within Ss ANOVA	Paired t W/in Ss ANOVA	Ch 15	Hmwk 9	10 pts
Apr 11	Regression / Predicting Relationships	Regression	Ch 14 Ch 18-19	Hmwk 10 <i>Xtra test write-up</i>	10 pts 20 pts
Apr 18	Group Project Thesis Propsoals Last class Final Discussion			Group Project Thesis Propsoals	150 Pts 20 pts
Apr 25	Classes end Portfolio's Due				150 pts

