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/14**
Department	**Counseling Psychology**
Textbooks/Materials	**Sprinthall, R.C. (2012). *Basic Statistical Analysis*. (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	**Friday 10:30 – 1:30 & by appt**

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 (NASP 2.1).
- Identify and compute descriptive statistics
- Identify data analysis appropriate for different types of research designs (NASP 2.1, 2.9).
- 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 (NASP 2.1, 2.9, 2.11).

- 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.
- The importance of research and opportunities and difficulties in conducting research in the schools and/or in the counseling profession (CACREP G8.a)
- Use of technology and statistical methods in conducting research and program evaluation (CACREP G.8.c)
- Use of research to improve professional effectiveness
- Legal and ethical issues in conducting research
- Applies relevant research findings to inform the practice of school psychology and/or counseling (CC J.1)
- Develops measurable outcomes for clinical mental health counseling programs, interventions, and treatments (CC J.2).
- Analyzes and uses data to increase the effectiveness of clinical mental health counseling interventions and programs (CC. J.3).

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.

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

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 (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 is 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.

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: Pyrczak 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: Pyrczak Publishing.

Holcomb, Z.C. (1997). *Real data. A statistics workbook based on empirical data.* Los Angeles: Pyrczak Publishing.

Holcomb, Z.C. (2007). SPSS Basics: Techniques for a First Course in Statistics (3rd Ed.) Los Angeles: Pyrczak 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 2014 Assignments*

School Psychology		**M.S. Thesis Students**	
Homework	**100 points**	**Homework**	**100 points**
Class Participation/Computer	**75 points**	**Class Participation/Computer**	**75 points**
Stats Write-Ups	**120 points**	**Stats Write-Ups**	**120 points**
Group Projects		**Additional Write-Ups**	**40 points**
Survey Presentation	**40 points**	**Group Project: Survey**	**40 points**
Program Evaluation	**125 points**	**Thesis Work**	**80 points**
Statistics Portfolio	**125 points**	**Statistics Portfolio**	**125 points**
Final Discussion	**15 points**	**Final Discussion**	**15 points**

The assignments and points may change as the program evaluation becomes clarified

Final grades will be based on 600 point total and will be distributed as follows:

540 and above	(90% of total points)	-	A
480 - 539	(80% of total points)	-	B
420 - 479	(70% of total points)	-	C
360 - 419	(60% of total points)	-	D
below 360	(less than 60% of total points)		F

Tentative Schedule of Classes/Assignments:

Date	Tentative Topics	Tentative Computer Exercise	Sprinthall Readings for Class	Hmwk/ Assignment Due Date	Points
Jan 9	**Overview of class** **Review of Research Methodology** **Operationalizing**	SPSS intro setting up a data file Frequencies			Class participation
Jan 16	**Review of descriptives** **Tables** **Figures** **Charts** **Bivariate Analysis**	Descriptives Participants Charts and Figures Crosstabs	Ch 1-3 Ch 9 Ch 18 pp. 542-553	**Hmwk 1 due**	10 pts
Jan 23	**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
Jan 30	**Survey Presentation** **Intro to Inferentials** **Statistics & Parameters**	Distributions	Chapter 7	**Survey**	40 pts *20 pts*
Feb 6	**Parameter Estimates and Hypothesis Testing** **Confidence intervals** **z- test** **One sample t-**	Confidence Intervals One sample t	Sprinthall 8	**Homework 3 Due** **Participant write-up (*Thesis people only*)**	10 points 20 pts

Date	Tentative Topics	Tentative Computer Exercise	Sprinthall Readings for Class	Hmwk/ Assignment Due Date	Points
Feb 13	**Hypothesis Testing** **One Sample t-test** **Hypothesis of Difference** **Independent t-tests**	Indep t	Sprinthall Ch 10 (review ch 9)	**Hmwk 4 due**	10 pts
Feb 20	**Hypothesis of Association** **Correlational Research – Correlation Scattergrams**		Sprinthall Ch 11	***Independent t write up*** **Hmwk 5**	30 pts
Feb 27	**Measurement** **Review of Reliability and Validity**	Reliability	Sprinthall Ch 17	**Hmwk 6**	10 pts
Mar 6	**ANOVA** **Post Hoc Tests**	ANOVA	Sprinthall Ch 12 pp. 330-350	**Hmwk 7** **Reliability write-up** ***(Thesis people only)***	10 pts *20 pts*
Mar 13	**Factorial ANOVA**	Factorial ANOVA	Sprinthall Ch 12 pp. 350-360		10 pts
Mar 20	**NonParametrics** **Chi Square** **Tests for Ordinal Data**	NonParametrics Chi Square	Chap 13 & 16	**Homework 8** ***ANOVA write-up***	10 pts 35 pts
Mar 27	**Spring Break**	***Spring Break***			
Apr 3	**Before-After Designs** **Paired T-tests** **Within Ss ANOVA**	Paired t W/in Ss ANOVA	Ch 15	**Hmwk 9** ***Chi square write-up***	10 pts 25 pts
Apr 10	**Regression /** **Predicting Relationships**	Regression	Ch 14 Ch 18-19	**Hmwk 10** ***Paired t-test write up***	10 pts 30 pts
Apr 17	**Group Project** **Thesis Proposals**			**Group Project** **Thesis Proposals**	125 pts 80 pts

Date	Tentative Topics	Tentative Computer Exercise	Sprinthall Readings for Class	Hmwk/ Assignment Due Date	Points
	Last class Final Discussion				
Apr 24	**Classes end Portfolio's Due**				**150 Pts**