

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

<b>Course Name</b>	<b>Research Methods and Statistics II</b>
<b>Course Number</b>	<b>CPSY 531 Section 2</b>
<b>Term</b>	<b>GS/09</b>
<b>Department</b>	<b>Counseling Psychology</b>
<b>Textbooks/Materials</b>	<b>Pyrczak, F. (2009) <i>Success at Statistics</i> (4th Ed). Glendale: CA. Pyrczak Publishing Faherty, V.E. (2008). <i>Compassionate Statistics. Applied Quantitative Analysis for Social Services</i>. Thousand Oaks, CA: Sage.</b>
<b>Faculty Name</b>	<b>Carol Doyle</b>
<b>Faculty Phone/E-mail</b>	<b>503 768-6067 <a href="mailto:cdoyle@lclark.edu">cdoyle@lclark.edu</a></b>
<b>Faculty Office</b>	<b>Rogers Hall 317</b>
<b>Advising Hours</b>	<b>TBA</b>

**Catalogue Description** (*copy from current catalogue*):

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 analysis.

**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 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 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. (3<sup>rd</sup> ed.) Alexandria, VA: American Counseling Association

**Course Calendar:**

See attached

**Required Texts:**

Pyrczak, F. (2009) *Success at Statistics* (4th Ed.) Glendale, CA: Pyrczak Publishing.  
( 3<sup>rd</sup> edition may be used as an alternative)

Faherty, V.E. (2008). *Compassionate Statistics. Applied Quantitative Analysis for Social Services.* Thousand Oaks, CA: Sage.

**Recommended Texts**

American Psychological Association (1994). *Publication manual of the American Psychological Association.* (5<sup>th</sup> Ed.). Washington, DC: American Psychological Association.

Green, S.B. & Salkind, N.J. (2005) *Using SPSS for Windows and Macintosh* (4<sup>th</sup> Ed). Upper Saddle River NJ: Prentice Hall

**Course Requirements:**

**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, 2<sup>nd</sup> 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 80% 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:**

American Psychological Association (1994). *Publication manual of the American Psychological Association*. (4<sup>th</sup> Ed.). Washington, DC: American Psychological Association.

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 (3<sup>rd</sup> Ed.)* Los Angeles: Pyczak Publishing.

Heppner, P.P., Kivlighan, D. M., & Wampold, B.E. (2008). *Research Design in Counseling (2<sup>nd</sup> Ed.)*. Pacific Grove, CA: Brooks/Cole.

Holcomb, Z.C. (2007). *Interpreting Basic Statistics (5<sup>th</sup> 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 (4<sup>th</sup> Ed.)* Los Angeles: Pyczak Publishing.

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

Mertler, C.A. & Vannatta, R. A. (2005). *Advanced and Multivariate Statistical Methods. Practical Application and Interpretation (3<sup>rd</sup> 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

**CPSY 531 - Section 2  
Research Methods & Statistics II  
Spring Semester 2009**

**Assignments**

**School Psychology**

<b>Homework</b>	<b>150 points</b>
<b>Computer Work/Class Particip</b>	<b>70 points</b>
<b>Statistics Portfolio</b>	<b>300 points</b>
Includes	
Hypothesis Testing Model	
Model for Choice of Appropriate Test	
Data Interpretation Model	
Summary & Results sections for 4 tests	
<b>Group Projects (2)</b>	<b>200</b>
Survey Project	75 points
Group Project	125 points
<b>Summary of a test not covered</b>	<b>20 points</b>
<b>Final Discussion</b>	<b>60 points</b>
Use of Confidence Interval	
Definitions	

**M.S. Thesis Students**

<b>Homework</b>	<b>150 points</b>
<b>Computer Work/Class Partic</b>	<b>70 points</b>
<b>Statistics Portfolio</b>	<b>300 points</b>
Includes	
Hypothesis Testing Model	
Model for Choice of Appropriate Test	
Data Interpretation Model	
Summary & Results sections for 4 tests	
<b>Group Project</b>	
Survey	75 points
<b>Thesis Proposal (methods section)</b>	<b>125 points</b>
<b>Summary of a test not covered</b>	<b>20 points</b>
<b>Final Discussion</b>	<b>60 points</b>
Use of Confidence Interval	
Definitions	

Final grades will be based on 800 point total and will be distributed as follows:

720 and above	(90% of total points)	-	A
640 - 719	(80% of total points)	-	B
560 - 639	(70% of total points)	-	C
480 - 559	(60% of total points)	-	D
below 480	(less than 60% of total points)		F

### Tentative Schedule of Classes/Assignments

<u>Date</u>		<u>Readings for Class Success with Stats</u>	<u>Tentative Computer Exercise</u>	Compassionate Statistics	<u>Hmwk/Assignment Due Date</u>	<u>Points</u>
Jan 14	Class overview  Data Interpretation Model  Operationalization		SPSS intro setting up a data file	Chap 1		
Jan 21	Review of Descriptive Stats  Bivariate Analysis	Sections 1 – 14	Frequencies Descriptives  CrossTabs Charts and Figures	Ch 1, 3 – 6 Ch 7 pp. 109 - 11	Hmwk 1 due	15 points
Jan 28	Measurement Concepts  Distributions Normal Curve z scores other standard Scores	Sections 15 – 18  Section 55:	Types of dist tests for skewness  z scores	Ch 2 & 7	Hmwk 2 due	15 points
Feb 4	Correlation Scattergrams  Reliability	Sections 19 – 24	Correlation  Reliability	Ch 10 & 11	Hmwk 3	15 points
Feb 11	<b>Survey Project</b>  Intro to Inferentials	Sections 27 – 32 : 56 – 59  Article: Types of Significance	Confidence Intervals	Ch 8	<b>Survey Results</b>	75 points
Feb 18	Intro to inferentials con't Hypothesis of difference Z test and one sample t	Sections 33 – 36	One sample t		Hmwk 4	15 points

<u>Date</u>		<u>Readings for Class Success with Stats</u>	<u>Tentative Computer Exercise</u>	Compassionate Statistics	<u>Hmwk/ Assignment Due Date</u>	<u>Points</u>
Feb 25	Hypothesis of Relationship  Sig of Correlation Regression	Sections 47, 25 – 26	Regression		<b>One sample t write up</b>	
Mar 4	Diff between groups 2 groups – interval/ratio data	Section 37 – 39	Indep t	Ch 13	Hmwk 5  <i>Regression/ correlation write-up</i>	15 points  10
Mar 11	Hypothesis of Difference - Within groups Before after designs	Section 40	Paired-t	Ch 12	Hmwk 6	15 points  10
Mar 18	2 or more groups – interval/ratio data	Sections 41 – 44	ANOVA	Ch 14 One way ANOVA	Hmwk 7  <i>t-test write-up</i>	15 points
Mar 25	<b>Spring Break</b>		<b>Spring Break</b>			
Apr 1	2 or more groups 2 or more variables interval/ratio data	Sections 45 – 46	W/in Ss ANOVA Factorial ANOVA		Hmwk 8	15 points  10
Apr 8	Bivariate Analysis – nominal data  Chi Square Cramer's Phi	Sections 48 – 51	Chi Square	Ch 9	Hmwk 9  <i>ANOVA write-up</i>	15 points  10
Apr 15	Non-parametrics	Sections 52 – 54	Non parametrics	Ch 15 Non parametric alternatives	Hmwk 10  <i>Chi square write-up</i>	15 points  10
April 22	<b>Class Project</b> Thesis Proposals due Non parametrics <b>Final Discussion</b>				<b>Class project &amp; Non-parametric presentations</b>	<b>125 points</b>
April 27	<b>Stats Portfolio's Due</b>					300 points

