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/09  
Department: Counseling Psychology  
Textbooks/Materials:  
Faculty Name: Carol Doyle  
Faculty Phone/E-mail: 503 768-6067  cdoyle@lclark.edu  
Faculty Office: Rogers Hall 317  
Advising Hours: TBA

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. (3rd ed.) Alexandria, VA: American Counseling Association

Course Calendar:
See attached

Required Texts:

(3rd edition may be used as an alternative)


Recommended Texts


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, 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 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:

g all

Partial Bibliography:


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

Assignments

<table>
<thead>
<tr>
<th>School Psychology</th>
<th>M.S. Thesis Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework 150 points</td>
<td>Homework 150 points</td>
</tr>
<tr>
<td>Computer Work/Class Particip 70 points</td>
<td>Computer Work/Class Particip 70 points</td>
</tr>
<tr>
<td>Statistics Portfolio 300 points</td>
<td>Statistics Portfolio 300 points</td>
</tr>
<tr>
<td>Includes</td>
<td>Includes</td>
</tr>
<tr>
<td>Hypothesis Testing Model</td>
<td>Hypothesis Testing Model</td>
</tr>
<tr>
<td>Model for Choice of Appropriate Test</td>
<td>Model for Choice of Appropriate Test</td>
</tr>
<tr>
<td>Data Interpretation Model</td>
<td>Data Interpretation Model</td>
</tr>
<tr>
<td>Summary &amp; Results sections for 4 tests</td>
<td>Summary &amp; Results sections for 4 tests</td>
</tr>
<tr>
<td><strong>Group Projects (2) 200</strong></td>
<td><strong>Group Project 75 points</strong></td>
</tr>
<tr>
<td>Survey Project 75 points</td>
<td>Survey Project</td>
</tr>
<tr>
<td>Group Project 125 points</td>
<td><strong>Thesis Proposal (methods section) 125 points</strong></td>
</tr>
<tr>
<td><strong>Summary of a test not covered 20 points</strong></td>
<td><strong>Summary of a test not covered 20 points</strong></td>
</tr>
<tr>
<td><strong>Final Discussion 60 points</strong></td>
<td><strong>Final Discussion 60 points</strong></td>
</tr>
<tr>
<td>Use of Confidence Interval Definitions</td>
<td>Use of Confidence Interval Definitions</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>720 and above</td>
<td>(90% of total points)</td>
</tr>
<tr>
<td>B</td>
<td>640 - 719</td>
<td>(80% of total points)</td>
</tr>
<tr>
<td>C</td>
<td>560 - 639</td>
<td>(70% of total points)</td>
</tr>
<tr>
<td>D</td>
<td>480 - 559</td>
<td>(60% of total points)</td>
</tr>
<tr>
<td>F</td>
<td>below 480</td>
<td>(less than 60% of total points)</td>
</tr>
<tr>
<td>Date</td>
<td>Readings for Class Success with Stats</td>
<td>Tentative Computer Exercise</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------</td>
<td>-----------------------------</td>
</tr>
</tbody>
</table>
| 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 | Survey Project  
Intro to Inferentials | Sections 27 – 32 : 56 – 59  
Article: Types of Significance  
Confidence Intervals | Ch 8 | Survey Results | 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 |
<table>
<thead>
<tr>
<th>Date</th>
<th>Readings for Class Success with Stats</th>
<th>Tentative Computer Exercise</th>
<th>Compassionate Statistics</th>
<th>Hmwk/Assignment Due Date</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 25</td>
<td>Hypothesis of Relationship Sig of Correlation Regression</td>
<td>Sections 47, 25 – 26</td>
<td>Regression</td>
<td>One sample t write up</td>
<td></td>
</tr>
<tr>
<td>Mar 4</td>
<td>Diff between groups 2 groups – interval/ratio data</td>
<td>Section 37 – 39</td>
<td>Indep t Ch 13</td>
<td>Hmwk 5 Regression/correlation write-up</td>
<td>15 points 10</td>
</tr>
<tr>
<td>Mar 11</td>
<td>Hypothesis of Difference - Within groups Before after designs</td>
<td>Section 40</td>
<td>Paired-t Ch 12</td>
<td>Hmwk 6</td>
<td>15 points 10</td>
</tr>
<tr>
<td>Mar 18</td>
<td>2 or more groups – interval/ratio data</td>
<td>Sections 41 – 44</td>
<td>ANOVA Ch 14 One way ANOVA</td>
<td>Hmwk 7 t-test write-up</td>
<td>15 points</td>
</tr>
<tr>
<td>Mar 25</td>
<td>Spring Break</td>
<td>Spring Break</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr 1</td>
<td>2 or more groups 2 or more variables interval/ratio data</td>
<td>Sections 45 – 46</td>
<td>W/in Ss ANOVA Factorial ANOVA</td>
<td>Hmwk 8</td>
<td>15 points 10</td>
</tr>
<tr>
<td>Apr 8</td>
<td>Bivariate Analysis – nominal data Chi Square Cramer’s Phi</td>
<td>Sections 48 – 51</td>
<td>Chi Square Ch 9</td>
<td>Hmwk 9 ANOVA write-up</td>
<td>15 points 10</td>
</tr>
<tr>
<td>Apr 15</td>
<td>Non-parametrics</td>
<td>Sections 52 – 54</td>
<td>Non parametrics Ch 15 Non parametric alternatives</td>
<td>Hmwk 10 Chi square write-up</td>
<td>15 points 10</td>
</tr>
<tr>
<td>April 22</td>
<td>Class Project Thesis Proposals due Non parametrics Final Discussion</td>
<td></td>
<td></td>
<td>Class project &amp; Non-parametric presentations</td>
<td>125 points</td>
</tr>
<tr>
<td>April 27</td>
<td>Stats Portfolio’s Due</td>
<td></td>
<td></td>
<td></td>
<td>300 points</td>
</tr>
</tbody>
</table>