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

<table>
<thead>
<tr>
<th><strong>Course Name</strong></th>
<th>Research Methods and Statistics II</th>
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<tbody>
<tr>
<td><strong>Course Number</strong></td>
<td>CPSY 531 Section 2</td>
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<tr>
<td><strong>Term</strong></td>
<td>GS/14</td>
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<tr>
<td><strong>Department</strong></td>
<td>Counseling Psychology</td>
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<tr>
<td><strong>Faculty Name</strong></td>
<td>Carol Doyle</td>
</tr>
</tbody>
</table>
| **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:

Supplementary Texts & Workbooks


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

<table>
<thead>
<tr>
<th>Points Possible</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90%</td>
<td>A</td>
</tr>
<tr>
<td>80%</td>
<td>B</td>
</tr>
<tr>
<td>70%</td>
<td>C</td>
</tr>
<tr>
<td>60%</td>
<td>D</td>
</tr>
<tr>
<td>less than 60%</td>
<td>F</td>
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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:**


Spring Semester 2014 Assignments*

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

<table>
<thead>
<tr>
<th>Date</th>
<th>Tentative Topics</th>
<th>Tentative Computer Exercise</th>
<th>Sprinthall Readings for Class</th>
<th>Hmwk/Assignment Due Date</th>
<th>Points</th>
</tr>
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<tbody>
<tr>
<td>Jan 9</td>
<td><strong>Overview of class</strong>  &lt;br&gt;Review of Research Methodology  &lt;br&gt;Operationalizing</td>
<td>SPSS intro setting up a data file  &lt;br&gt;Frequencies</td>
<td>Ch 1-3  &lt;br&gt;Ch 9  &lt;br&gt;Ch 18 pp. 542-553</td>
<td>Hmwk 1 due</td>
<td>Class participation</td>
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<td>Jan 16</td>
<td><strong>Review of descriptives</strong>  &lt;br&gt;Tables  &lt;br&gt;Figures  &lt;br&gt;Charts  &lt;br&gt;Bivariate Analysis</td>
<td>Descriptives  &lt;br&gt;Participants  &lt;br&gt;Charts and Figures  &lt;br&gt;Crosstabs</td>
<td>Ch 1-3  &lt;br&gt;Ch 9  &lt;br&gt;Ch 18 pp. 542-553</td>
<td>Hmwk 1 due</td>
<td>10 pts</td>
</tr>
<tr>
<td>Jan 23</td>
<td><strong>Measurement concepts</strong>  &lt;br&gt;Tests  &lt;br&gt;Construction Norms and Test Standardization  &lt;br&gt;Normal Curve and z scores  &lt;br&gt;Histograms</td>
<td>Work on Survey Project</td>
<td>Ch 4-6  &lt;br&gt;Ch 17 pp. 500-505 (through definition of reliability)</td>
<td>Hmwk 2 due</td>
<td>10 pts</td>
</tr>
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</table>
| Jan 30 | **Survey Presentation**  <br>Intro to Inferentials  <br>Statistics & Parameters | Distributions | Chapter 7 | Survey | 40 pts  
| Feb 6  | **Parameter Estimates and Hypothesis Testing**  <br>Confidence intervals  <br>z-test  <br>One sample t- | Confidence Intervals  <br>One sample t | Sprinthall 8 | Homework 3 Due Participant write-up (Thesis people only) | 10 points  
<p>|        |                                                                                 |                                                     |                                       |                          | 20 pts       |</p>
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| 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 | 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 |
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<th>Sprinthall Readings for Class</th>
<th>Hmwk/Assignment Due Date</th>
<th>Points</th>
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<tbody>
<tr>
<td></td>
<td>Last class</td>
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<td></td>
<td>Final Discussion</td>
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<td>Apr 24</td>
<td>Classes end</td>
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<td>150 Pts</td>
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<td>Portfolio’s Due</td>
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