SYLLABUS

Title: Statistics
Course: Psychology 3600 (32760)
Instructor: Doug R. Richards, Ph.D.
E-mail: doug_r_richards@hotmail.com
Year: Spring Semester 2016
Phone: (801) 822-2289 (text is preferred)
Room: Social & Behavioral Sciences 378
Times: M W F 8:30 am – 9:20 am
Office Hours: M 9:30 am – 12:20 am
Office: Social & Behavioral Sciences 356

Text: Essential Statistics for the Behavioral Sciences by Gregory J. Privitera

COURSE OVERVIEW & LEARNING OUTCOMES

The purpose of the course is to learn basic statistical techniques and concepts. The course will cover statistical processes of descriptive analysis, graphic analysis, and methods of factorial and correlational analysis.

Learning outcomes for this course have been developed around the 4 general learning objectives of the Psychology Department at Weber State University, and are based on recommendations of the APA: Knowledge, Application, Values/Ethics, and Communication. Specifically, the outcomes for the class are as follows:

KNOWLEDGE – Students will understand psychology as a scientific discipline.

1.1 Psychology Statistics Content Knowledge

Students will identify the processes involved in data analysis in the social sciences. This includes learning both graphical and statistical procedures for analyzing group differences as well as correlational relationships. Methods covered include, but are not limited to, t-tests, ANOVA, correlation, and regression. Distinguishing characteristics include identification of independent and dependent variables, types of variables used in each method, assumptions of each method and how to remedy unmet assumptions, as well as correct interpretation of results.

APPLICATION – Students will apply psychological principles to explain social research and better understand the results of their own investigations.

2.1 Psychology Statistics Application

Students will apply appropriate statistical methods to a variety of types of data. Students will adequately interpret results of statistical tests. This will include analysis of assumptions and correct interpretation of both magnitude and size of effect of all results.
VALUES/ETHICS – Students will display an attitude of skepticism and intellectual curiosity about psychological issues. Students will recognize the need for ethical guidelines and will practice ethical behaviors in regard to the field of psychology.

3.1 Psychology Statistics Values

In learning the distinguishing characteristics of statistical methods, students will describe the implications on results of using the wrong method to analyze data, identify data that is biased, and describe the effects of analyzing biased data.

3.2 Psychology Statistics Lab Ethics

Students will understand the importance of significance levels and when to properly apply them and how to properly report the results.

COMMUNICATION – Students will professionally communicate their understanding of terms, concepts, and theories via written and oral format.

4.1 Psychology Statistics Written Communication – Evidence Based

Students will explicitly outline logical flow of information from broad to most fine-grained and will present all statistical results in logical form based on evidence.

4.2 Psychology Statistics Lab Written Communication – Clarity

Students will write in a clear and concise manner; appropriate professional language and tone will be used.

Students with Disabilities/Requests for Accommodations:

Any student requiring accommodations or services due to a disability must contact Services for Students with Disabilities (SSD) in Room 181 of the Student Services Center (or Room 221 at the Davis Campus). SSD can also arrange to provide course materials in alternative formats upon request. To contact SSD by phone: (801) 626-6413 – Ogden; or, (801) 395-3524 – Davis. [http://www.weber.edu/ssd](http://www.weber.edu/ssd)
# Class Schedule

<table>
<thead>
<tr>
<th>Class Date</th>
<th>Topic</th>
<th>Chapter</th>
<th>Assignment Due</th>
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<tr>
<td>Jan 11&lt;sup&gt;th&lt;/sup&gt;, 13&lt;sup&gt;th&lt;/sup&gt;, 15&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Introduction to Statistics</td>
<td>1</td>
<td></td>
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<tr>
<td><strong>January 20&lt;sup&gt;th&lt;/sup&gt; (all questions)</strong></td>
<td></td>
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<td><strong>Assignment #1 Due</strong></td>
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<td>Jan 20&lt;sup&gt;th&lt;/sup&gt;, 22&lt;sup&gt;nd&lt;/sup&gt;, 25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Frequency Distributions in Tables and Graphs</td>
<td>2</td>
<td><strong>Assignment #2 Due</strong></td>
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<td><strong>January 27&lt;sup&gt;th&lt;/sup&gt; (omit 14-16, 31)</strong></td>
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<tr>
<td>Jan 27&lt;sup&gt;th&lt;/sup&gt;, 29&lt;sup&gt;th&lt;/sup&gt;, Feb 1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>Central Tendency</td>
<td>3</td>
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<td><strong>February 3&lt;sup&gt;rd&lt;/sup&gt; (all questions)</strong></td>
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<td>Feb 3&lt;sup&gt;rd&lt;/sup&gt;, 5&lt;sup&gt;th&lt;/sup&gt;, (8&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>Variability</td>
<td>4</td>
<td><strong>Assignment #4 Due</strong></td>
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<td><strong>February 8&lt;sup&gt;th&lt;/sup&gt; (add boxplot to #11, #12)</strong></td>
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<tr>
<td><strong>TEST #1 (Chapters 1-4) February 6&lt;sup&gt;th&lt;/sup&gt; – February 10&lt;sup&gt;th&lt;/sup&gt; in the Testing Centers</strong></td>
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<td>Feb 10&lt;sup&gt;th&lt;/sup&gt;, 12&lt;sup&gt;th&lt;/sup&gt;, 17&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Probability &amp; Normal Distributions</td>
<td>5</td>
<td><strong>Assignment #5 Due</strong></td>
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<td><strong>February 19&lt;sup&gt;th&lt;/sup&gt; (all questions)</strong></td>
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<td>Feb 19&lt;sup&gt;th&lt;/sup&gt;, 22&lt;sup&gt;nd&lt;/sup&gt;, 24&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Characteristics of the Sample Mean</td>
<td>6</td>
<td><strong>Assignment #6 Due</strong></td>
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<tr>
<td>Feb 26&lt;sup&gt;th&lt;/sup&gt;, 29&lt;sup&gt;th&lt;/sup&gt;, (Mar 2&lt;sup&gt;nd&lt;/sup&gt;)</td>
<td>Hypothesis Testing: Significance, Effect Size, &amp; Power</td>
<td>7</td>
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<td>Mar 2&lt;sup&gt;nd&lt;/sup&gt; (omit 29, 31)</td>
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<td><strong>TEST #2 (Chapters 5-7) March 3&lt;sup&gt;rd&lt;/sup&gt; – Mar 5&lt;sup&gt;th&lt;/sup&gt; in the Testing Centers</strong></td>
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<td>Mar 14&lt;sup&gt;th&lt;/sup&gt;, 16&lt;sup&gt;th&lt;/sup&gt;, 18&lt;sup&gt;th&lt;/sup&gt;</td>
<td>One-Sample t-test</td>
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<td>Mar 21&lt;sup&gt;st&lt;/sup&gt;, 23&lt;sup&gt;rd&lt;/sup&gt;, 25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Two-independent sample t-test</td>
<td>9</td>
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<td>Mar 28&lt;sup&gt;th&lt;/sup&gt;, 30&lt;sup&gt;th&lt;/sup&gt;, (Apr 1&lt;sup&gt;st&lt;/sup&gt;)</td>
<td>Related samples t-test</td>
<td>10</td>
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<td>April 1&lt;sup&gt;st&lt;/sup&gt; (all questions)</td>
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<td><strong>TEST #3 (Chapters 8-10) April 2&lt;sup&gt;nd&lt;/sup&gt; – April 5&lt;sup&gt;th&lt;/sup&gt; in the Testing Centers</strong></td>
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<td>Apr 4&lt;sup&gt;th&lt;/sup&gt;, 6&lt;sup&gt;th&lt;/sup&gt;, 8&lt;sup&gt;th&lt;/sup&gt;, 11&lt;sup&gt;th&lt;/sup&gt;</td>
<td>One-Way Analysis of Variance</td>
<td>11</td>
<td><strong>Assignment #11 Due</strong></td>
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<td><strong>April 13&lt;sup&gt;th&lt;/sup&gt; (all questions)</strong></td>
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<td>Apr 13&lt;sup&gt;th&lt;/sup&gt;, 15&lt;sup&gt;th&lt;/sup&gt;, 18&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Two-Way Analysis of Variance</td>
<td>12</td>
<td><strong>Assignment #12 Due</strong></td>
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<td><strong>April 20&lt;sup&gt;th&lt;/sup&gt; (omit 26b and 27b)</strong></td>
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<td>Apr 20&lt;sup&gt;th&lt;/sup&gt;, 22&lt;sup&gt;nd&lt;/sup&gt;, 25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Correlation and Linear Regression</td>
<td>13</td>
<td><strong>Assignment #13 Due</strong></td>
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<tr>
<td><strong>April 25&lt;sup&gt;th&lt;/sup&gt; (all questions)</strong></td>
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FINAL EXAM (Chapters 11, 12, 13) April 26th – April 28th

Holidays (Days off from class)
- Martin Luther King Jr. Jan 18th
- President’s Day Feb 15th
- Spring Break Mar 7th – Mar 11th

Assignments: This is the core of the course. Assignments will be given at the beginning of the topic and will be due on the first day of the new topic. Thirteen assignments will be given. Each assignment will be worth 20 pts. Assignments cannot be made up except under extreme circumstances. All end of chapter problems are assigned except for chapters 2, 7 & 12 (see schedule). Chapter 4 has additional boxplots added. I will take a sample of four problems to grade from each assignment (Before exams, answers to the odd number problems will be posted on Canvas). Each problem will be worth 4 pts (total of 16 points) and 4 points will also be awarded for entire completion of the assignment. Assignments may be submitted using Canvas or at my office.

Tests: There will be four opportunities to test your practical knowledge of material learned. These tests are not purposely comprehensive but knowledge learned earlier does apply to subsequent material. Understanding and interpretation of material will be emphasized as well as practical knowledge. There will be four tests with each worth 100 pts. Tests cannot be made up except under extreme circumstances. Tests will be 40 multiple-choice questions with five short-answer questions. The tests will be administered through Chi-Tester (chitester.weber.edu) at the various Weber State University Testing Centers; namely, the Student Services Testing Center (room 262), Social and Behavioral Science Testing Center (SS building – room 38), Shepard Union Building (room 323). The West Center has a testing facility as well as Davis campus. Make sure to check the specific hours and arrive one hour before closing time.

Test Due Dates:
- Test #1 February 6th – February 10th
- Test #2 March 3rd – Mar 5th
- Test #3 April 2nd – April 5th
- Final Exam April 26th – April 28th

Grading: The most strict performance standards that I will use (may be modified down according to class performance)

- A = 94-100%
- A- = 90-93%
- B+ = 87-89%
- B = 83-86%
B- = 80-82%
C+ = 77-79%
C = 73-76%
C- = 70-72%
D+ = 67-69%
D = 63-66%
D- = 60-62%
E = below 60%

Point Totals:

Assignments (13 X 20 pts.) 260 points
Tests (4 X 100 pts.) 400 points

Total points possible 660 points

Academic Honesty: as members of the Weber State University academic community, students shall:

1. Maintain academic standards including institutional, school, departmental, program, and individual course standards;

2. Maintain academic ethics and honesty. To this end, the following activities are specifically prohibited:

a. Cheating, which includes but is not limited to:

i) Copying from another student's test;

ii) Using materials during a test not authorized by the person giving the test;

iii) Collaborating with any other person during a test without authorization;

iv) Knowingly obtaining, using, buying, selling, transporting, or soliciting in whole or in part the contents of any test without authorization of the appropriate University official

v) Bribing any other person to obtain any test;

vi) Soliciting or receiving unauthorized information about any test;
vii) Substituting for another student or permitting any other person to substitute for oneself to take a test.

b. Plagiarism, which is the unacknowledged (uncited) use of any other person’s or group’s ideas or work. This includes purchased or borrowed papers;

c. Collusion, which is the unauthorized collaboration with another person in preparing work offered for credit;

d. Falsification, which is the intentional and unauthorized altering or inventing of any information or citation in an academic exercise, activity, or record-keeping process;

e. Giving, selling, or receiving unauthorized course or test information;

f. Using any unauthorized resource or aid in the preparation or completion of any course work, exercise, or activity;

g. Infringing on the copyright law of the United States which prohibits the making of reproductions of copyrighted material except under certain specified conditions.

**Cheating infractions:**

1. The first infraction shall result in a score of 0 (zero) points for the particular test, paper, presentation, activity etc.
2. The second infraction shall result in a failing grade (E) for the course.

**Disclaimer:** I reserve the right to make changes in a) course schedule, b) course requirements, c) course grading procedures, and/or d) any other aspects of the course at any time. Any alterations will be circumspect and will be made in the best interests of the students, the course, and the instructor.

**Emergency Closure Statement:**

Emergency Closure: If for any reason the university is forced to close for an extended period of time, we will conduct our class via Canvas. Look for announcements on Canvas. Code Purple is a good way to be alerted to campus closures, and you are encouraged to sign up for it.