Statistical Methods (PSY 3000/3005, CRN 43031)

Fall 2014, Aug. 25 – Dec. 19

Prof. Robert Carlson

Class Information

Lecture Days: Tues. & Thur.
Lecture Time: 9:00 – 10:15
Lecture Location: McDonald 104
Lab Days: Thur.
Lab Time: 10:30 – 12:15
Lab Location: McDonald 111

Contact Information

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Disclaimer: Details of this syllabus are subject to change (I hope not, but you never know). If changes are made, they will be announced in class during the scheduled class or lab time.

Contacting Prof. Carlson: The most effective way to contact me is by e-mail (sending me a message or making a comment through Canvas will generally not reach me). I check my DSU e-mail account regularly, and you can generally expect a response within one academic day (a day the campus is in session). If you speak to me in person, especially away from my office, **make sure to follow up any conversations with an e-mail** to remind me to address the matter in a timely manner. I may not be in my office a lot outside of office hours, but you are welcome to drop by any time to see if I have time to meet with you. If you want to be sure I will be there to talk with you during a time other than official office hours, please feel free to contact me via e-mail to make an appointment. I am happy to work with you on your lab assignments or understanding any of the material. There are also Psychology tutors, at least one of which is traditionally chosen because they have excelled in this course previously.

Course Summary: The purpose of this course is to introduce Psychology majors to the use of statistics within the behavioral sciences. Students will learn how to ***apply*** statistical principles, instead of merely memorizing a set of equations, in a variety of research contexts within the behavioral sciences. This course should prepare students to succeed in a Psychology Research Methods course.

Course Information:

Textbook: *Fundamental Statistics for the Behavioral Sciences*, 7th Edition, by David C. Howell (required)
Reference: *Publication Manual of the American Psychological Association*, 6th ed. (required)
Study Guide: Online study guide (as of now, incomplete) provided for your convenience
Office Hours: MWF 10:00-10:50; Tu, 10:20-11:10; and by appointment
Prerequisites: PSY 1010, MATH 1040, PSY 2000
Course Fees: None
General Education: This course does not fulfill any general education requirements.

Attendance Policy: Students are expected to attend every class (lecture and lab) and participate in class discussions. There is a lot of material to learn in this course, and the best way to learn it is by applying it, which is the focus of this course. This requires participating both in class discussions and in completing lab assignments. If you are going to perform well in this class, you must plan on staying on top of the work every week of the semester.

Classroom Policy: This is a relatively small class, and all students are expected to participate in classroom discussions. This material is best learned through active participation and application. Combined with the lab, this will be a hands-on course.

Grading Scale	
Grade	**Range**
A	>91%
A-	89-91%
B+	86-88%
B	82-85%
B-	79-81%
C+	76-78%
C	72-75%
C-	69-71%
D+	66-68%
D	62-65%
D-	59-61%
F	<59%

Academic Integrity: There aren't many things students do that make me angry, but cheating is one of them. To clarify what constitutes cheating in general, please refer to the policy in Section 5.33.5 (http://www.dixie.edu/humanres/policy/sec5/533.html. A more specific explanation of plagiarism within psychology can be found in Canvas. It is extremely important that students present their own work for grading in this course. I cannot accurately evaluate how much you have learned if you are turning in someone else's work (especially using their wording). Although collaboration among students regarding the general approach to completing assignments is encouraged (groups working together in lab and studying together outside of class is a very good way to learn), the specific work that is submitted must reflect an individual student's own work, including your own wording of lab assignment answers (labels on graphs, answers to open-ended questions, etc.). You will be expected to complete your lab assignments following APA formatting guidelines.

Grading Information: Final grades in this course will be based on a percentage-based system, and there will **not** be a "curve" used to determine grades.

Grade Components: Quizzes (10%), Lab Assignments (25%), Midterm Exams (40%), Final Exam (25%).

Quizzes. Quizzes may be given each class period; if there is a quiz, you will be expected to be present during the first 5 minutes of class to take the quiz. Each quiz will be a short test of your knowledge of that class's reading assignment. In-class quizzes will typically be very short (4-5 questions) and can be completed in less than five minutes. Also, there may be one take-home quiz during the semester. All quizzes must be completed independently; **do not copy another student's work**.

Lab Assignments. Lab assignments are due according to the schedule listed to the right. Each assignment will be introduced in a Thursday lab, covering material that was introduced in class since the previous lab assignment. During the beginning of lab, I will introduce the features of Excel you need to know to complete the assignment. Various handouts will be available through Canvas on how to use Excel in statistics as reference guides. There will always be time available during lab to work on that assignment, and some students will be able to complete some assignments during lab while others will be finished outside of lab. The average percentage score of each lab assignment (**not** total lab points) will contribute 25% of your course grade. See the Lab Guide for more information about lab.

Lab Asst.	Due Date/Time
1	9/4, 8:30 a.m.
2	9/11, 8:30 a.m.
3	9/18, 8:30 a.m.
4	9/22, 9:00 a.m.
5	10/2, 8:30 a.m.
6	10/9, 8:30 a.m.
7	10/14, 8:30 a.m.
8	10/30, 8:30 a.m.
9	11/6, 8:30 a.m.
10	11/10, 9:00 a.m.
11	11/20, 8:30 a.m.
12	12/4, 8:30 a.m.
13	12/8, 9:00 a.m.

Midterm	Dates
1	Sept. 18-22
2	Oct. 16-20
3	Nov. 6-10
4	Dec. 4-10

Midterms. Midterms will test your knowledge of an entire section of the course (6 chapters for Midterm 1, 3 chapters for each other Midterm). Midterm test questions will involve true/false and multiple choice questions, as well as questions that will require students to demonstrate their ability to apply the statistical principles learned in class, but with **minimal calculations** required. There will be four midterm exams during the

semester; the lowest of your four midterms will count less toward your final grade (5%), while the highest of your four midterms will count more (15%) toward your final grade (the middle two midterm scores will count 10% each toward your final grade. All midterm exams will be administered in the Testing Center, according to the schedule above, with the exam being first available after lab (i.e., 12:30) and closing at the end of the Testing Center's operating hours on the last day the exam is available (usually 10:00 p.m., but you must begin the exam at least one hour before the Testing Center closes).

Final Exam. The final exam will be administered at the end of the semester and will cover material from the entire course. Its length will be equivalent to a double-length midterm exam.

Grade Calculation: Grades are calculated based on percentages, **not total points**. For example, if you score 9 out of 10 on one lab assignment, that counts as a grade of 90%; if you score 70 out of 100 on another lab assignment, that counts as a grade of 70%. If those were your only two lab assignments, your Lab Average would be 80% (the average of 70% and 90%), **not** 72% (79 out of 110 total points). The same principle applies to quizzes and midterm exam grades. Your Quiz Average (QA) will be calculated by averaging the percentage scores from each quiz, except for the three lowest quizzes; you will multiply this by .10 when calculating your final grade. Multiply your highest midterm (HM) percentage by .15, your two middle midterm percentages (MM) by .10 and your lowest midterm (LM) percentage by .05. The average percentage of your highest 11 labs will be multiplied by .25. Your Final Exam (FE) percentage is multiplied by .25. To calculate your overall grade, add those grade components together:

(QA x .10) + (HM x .15) + (MM x .10) + (MM x .10) + (LM x .05) + (Lab x .25) + (FE x .25)

This sum will be your total percentage grade in the course; use this figure to determine your letter grade in the course based on the Grading Scale listed above.

Date	Reading Assignments/Course Events	Ch:Pages
Tue., Aug. 26	Introduction	1:1-14
Thu., Aug. 28	Basic Concepts	2:17-31
Tue., Sep. 2	Frequency Distributions and Graphs	3:35-55
Thu., Sep. 4	Measures of Central Tendency (Lab 1 due)	4:63-76
Tue., Sep. 9	Basics of Variability	5:80-93, 98-100
Thu., Sep. 11	Normal Distribution and Frequency (Lab 2 due)	6:111-120
Tue., Sep. 16	Standard Normal Distribution and *z*-Tests	6:120-130
Thu., Sep. 18	**Review for Exam 1** (Lab 3 due)	**Ch. 1-6**
Sep. 18 – 22	**Exam 1 in Testing Center**	**Ch. 1-6**
Mon., Sep. 22	Lab 4 due (9:00 a.m.)	
Tue., Sep. 23	Sampling Distributions and Null Hypotheses	8:156-169
Thu., Sep. 25	Hypothesis Testing	8:169-185
Tue., Sep. 30	Scatterplots and Correlation	9:188-201
Thu., Oct. 2	Factors that Affect Correlations (Lab 5 due)	9:201-226
Tue., Oct. 7	Linear Regression	10:230-243
Thu., Oct. 9	Regression Predictions (Lab 6 due)	10:243-262

Tue., Oct. 14	**Review for Exam 2** (Lab 7 due, 8:30 a.m.)	**Ch. 8-10**
Thu., Oct. 16	**Fall Break (no class, no lab)**	---
Oct. 16-20	**Exam 2 in Testing Center**	**Ch. 8-10**
Tue., Oct. 21	Sampling Distribution of the Mean	12:301-317
Thu., Oct. 23	*t*-test and Confidence Limits	12:317-332
Tue., Oct. 28	Comparing Two Samples	13:336-349
Thu., Oct. 30	Independent Sample *t*-tests (Lab 8 due)	14:353-362
Tue., Nov. 4	Heterogeneity of Variance and Examples	14:362-378
Thu., Nov. 6	**Review for Exam 3** (Lab 9 due)	**Ch. 12-14**
Nov. 6-10	**Exam 3 in Testing Center**	**Ch. 12-14**
Mon., Nov. 10	Lab 10 due (9:00 a.m.)	
Tue., Nov. 11	**Career Day (no class)**	---
Thu., Nov. 13	ANOVA	16:406-427
Tue., Nov. 18	Post-hoc Tests	16:427-446
Thu., Nov. 20	Factorial Designs (Lab 11 due)	17:453-461
Tue., Nov. 25	Interactions	17:461-466, 470-474
Thu., Nov. 27	**Thanksgiving Holiday (no class)**	---
Tue., Dec. 2	Chi-Square	19:502-521, 526-530
Thu., Dec. 4	**Review for Exam 4** (Lab 12 due)	Ch. 16-17, 19
Mon., Dec. 8	Lab 13 due	---
Dec. 4-10	**Exam 4 (in Testing Center)**	Ch. 16-17, 19
Thu., Dec. 11	**Final Exam Review (no lab)**	**Ch. 1-6, 8-14, 16-17**
Thu., Dec. 18	**Final Exam, McDonald 104, 9:30-11:30 a.m.**	**Ch. 1-6, 8-14, 16-17**