

Psychology 314L (52610)

Research Methods

Fall 2013

Lecture Location: Seeley G. Mudd Building, Room 226
Days and Time: Monday & Wednesday; 2:00 p.m. to 3:20 p.m.

ALL Labs Location: King Hall, Room 208
Wednesday Lab Time: 12:00 p.m. to 1:50 p.m.
Thursday Lab Time: 10:00 a.m. to 11:50 a.m.

Online portion at <http://blackboard.usc.edu>

Instructor Information

Dr. Clayton L. Stephenson
Non-Tenure Track Professor
clstephe@usc.edu

Office Location: SGM, Room 526
Office Hours: Tuesday, & Thursday
12:30 p.m. – 2:00 p.m.; Friday
10:00 a.m. – 12:00 p.m.; and by appointment

TA Information

Adam Wood; adamw@usc.edu

Syllabus

Course Description

Psychology is a science. Science requires specific methods that tests, confirms, or disconfirms hypotheses that lend supporting evidence or no evidence to a theory. Therefore, the course you are about to take is one of the most important courses you will take in psychology. Without rigorous, systematic research methods, much of theoretical and practical knowledge we have about perception, cognition, attitudes, learning, human development, stereotypes, and many other areas in psychology would not exist. Although this course is not content specific, the knowledge and content of the course can be applied to any content specific course in psychology and neuroscience. You will learn about the philosophy of science, the various types of methods psychologists use, learn how to and actually conduct an experiment, and write a paper adhering to the Publication Manual of the American Psychological Association.

Prerequisites

PSYC 100 (Introduction to Psychology)
PSYC 274 (Statistics I)

Teaching Objectives

- Provide students with the fundamental knowledge of research methods and design used in psychology.
- Facilitate students understanding for how using valid scientific methods can improve and create knowledge in the field of psychology.
- Guide and mentor students in developing, completing, writing, and presenting a valid and ethical psychology experiment.

Student Learning Objectives

After successfully completing this course, students will be able to . . .

- identify areas in psychology in which they have strong interests.
- describe and discuss the concepts in various psychological research methods and design.
- critically analyze scientific claims made in popular and academic media.
- analyze and interpret quantitative data.
- collaborate and complete psychological research projects with their peers.
- verbally present their research findings in a coherent and concise manner.

Required Texts

American Psychological Association. (2010). *Publication manual of the American psychological association* (6th ed.). Washington, DC: American Psychological Association.

Pelham, B. W., & Blanton, H. (2013). *Conducting research in psychology: Measuring the weight of smoke* (4th ed.). Belmont, CA: Wadsworth Cengage Learning.

Supplemental Readings. (Various dates). *Posted on Blackboard*.

NOTE: Texts are available at the bookstore or online.

Assessment	Due Date or Exam Date	Percent of Final Grade
Quizzes	Each Monday	10 (individual grade)
First Project Paper	September 29 th at 11:59 p.m.	5 (individual grade)
Second Project Paper	October 20 th at 11:59 p.m.	10 (individual grade)
Research Proposal	November 1 st at 11:59 p.m.	15 (individual grade)
Final Research Paper	December 13 th at 11:59 p.m.	20 (individual grade)
Research Project Presentation	December 13 th	15 (individual grade)
Lab Assignments	Continuous	15 (individual or group)
Participation = Lecture (5%) + Lab (5%)	Continuous	10 (individual and group)

Quizzes

One or two question quizzes will be given on each Monday starting the 3rd week of the semester. Quizzes will ask for a critical analysis or synthesis of information covered in the previous week OR cover information from the reading for the class on that day. *In other words, you need to make sure an read **BEFORE** coming to class.* Quizzes are NOT multiple choice questions and will be answered as a short answer or essay.

First Project Paper

You will write a 6-8 page research paper using APA style. This paper will act as a practice paper and as an introduction to writing a full research paper using data collected by the class.

Second Project Paper

You will write an 8-10 page research paper using APA style. This paper will act as a more advanced and elaborate research paper. You will work with 3-4 other people on this project. Your group will choose a topic provided by your instructor and work together to collect the data. This paper will differ from the first paper in that you will have to recruit five people to collect data.

Research Proposal & Final Research Paper

You will write a research proposal in the first half of the semester and collect data in accordance to your proposal during the second half of the semester. The research proposal is an important process in providing a clear statement of the problem, a review of literature, how the literature relates to your study, formal research questions and hypotheses, a full methods section, and the data analysis you intend to conduct. The final research paper will be the result of your semester's lab work and a demonstration of your ability to apply your knowledge so that you have a real experimental study to report. You will work in groups of three or four to in completing the project, but you will write the proposal and final paper individually. *Please Note: These two papers are 35% of your grade, so be diligent in writing your paper and getting help from your TA immediately if you have any problems.*

Research Project Presentation

In place of a final exam, you will present your research study with your group. Presentations are presented in a conference format and should be professional. You may be as creative as you want to be in presenting your study and PowerPoint is *NOT* required. *Please Note: The presentation is 15% of your grade, so you will be held to high expectation and standards.*

Weekly Lab Assignments

The lab assignments are designed for you to acquire the necessary skills, knowledge, and tools to complete your research proposal and final research paper. Labs are also designed for you to acquire, at the minimum, a working knowledge of the different types of methods psychologists use such as observations, surveys, correlational studies, and experimental studies. You will also learn or relearn statistical software, how to read output, and how to use APA format in your papers.

Participation Points (Class & Lab)

Reading the assigned material and completing the assignments before class and lab are important to understanding the lecture topics and to participating in the discussions. Various *participation point questions* will be asked during class for which a response is expected, on paper, and discussions will be based on those questions. Exercises may occasionally be assigned in class in order to help you to understand the course material. These exercises may be worked on in class, or may be due at a later date. Lab participation will be graded based on the completion of a specific assignment or demonstration that will take place each lab.

Grading Scheme

A = 100 - 93.5%; A- = 93.4 - 89.5%; B+ = 89.4 - 86.5%; B = 86.4 - 83.5%; B- = 83.4 - 79.5%; C+ = 79.4 - 76.5%; C = 76.4 - 73.5%; C- = 73.4 - 69.5%; D+ = 69.4 - 66.5%; D = 66.4 - 63.5%; D- = 63.4 - 59.5%; Below 59.5% = F

Statistics Background

All students in this class are required to have achieved a C- grade or better in their Statistics I course. Students should have an introductory level of familiarity with descriptive and inferential statistics, their interpretation, and writing of statistical results. The Research Methods course builds heavily upon your background in statistics; students *without* an adequate background in statistics may find this course difficult. We will thoroughly review common statistical methods. You should be able to identify the appropriate statistics for each design type, depending on the scale of measurement used by the researchers. You will be expected to be able to input data into SPSS, run the appropriate statistics, read SPSS output, be able to infer the number of participants in the sample and levels of an independent variable from degrees of freedom. All of these skills will be taught or reviewed in lecture and labs.

Course and University Policies

- 1) **Missed Quizzes and/or Assignments:** Missed quizzes and assignments cannot be made up and will result in a grade of zero. Students who experience medical emergencies that prevent them from attending class on days when class exercises or quizzes are scheduled will be required to provide original documentation from their physicians within one week explaining their absence. USC athletes should meet with me by the end of the second week regarding their scheduled athletic events that may conflict with course requirements.
- 2) **Feedback:** The instructor and TA will make every attempt to return exams and assignments in a reasonable time by returning them no later than two weeks after the due date.
- 3) **Appeal Process:** If you find that an answer in your homework assignment, bonus prep, or exam was incorrect, but you think it is correct, you can appeal the decision in writing. The written appeal must have supporting documentation (e.g., reference to a class reading). The appeal cannot be based on your opinion or personal experience, but rather based on the course materials. Appeals must be delivered to the instructor no later than one week after the grade is posted. Appeals will not be accepted via email and no late appeals will be accepted.
- 4) **Tardy Policy:** Do NOT show up late to class or lab. Period.
- 5) **Cell Phone and Electronic Device Policy:** Cell phones should be turned off during class. Do NOT leave cell phones on vibrate and do NOT text message during class. Absolutely NO computers may be used during lectures unless you have a note from the Disabilities Services and Programs that states it is necessary for you to use your computer to take notes.
- 6) **Course Participation:** You are expected to be prepared for class by completing the required readings or exercises BEFORE class, and should be prepared for discussion of the assignments (and participation point questions).
- 7) **Academic Dishonesty:** Plagiarism, lazy writing, and cheating are violations of the Student Judicial Affairs & Community Standards and may be dealt with by both the instructor and the university. Plagiarism is defined as, “the act of presenting the ideas and writings of another as one’s own.” Lazy writing is defined as, “using quotes or paragraphs with the proper citation, but are used in a manner that a paper is stitched together and clearly has little or no original writing.” Cheating is defined as, “the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means.” In instances of academic dishonesty, the instructor will take appropriate action as outlined in the Academic

Integrity Review Process (SJACS 14.10). For more information on avoiding plagiarism or lazy writing, see Chapter 1 in the APA Publication Manual or visit http://www.usc.edu/student-affairs/student-conduct/ug_plag.htm.

- 8) **Support for Student with Disabilities:** If you are in need of an accommodation for a disability in order to participate in this class, please see the instructor and contact Disabilities Services and Program at (213) 740-0776.
- 9) **University Escort Service:** If you feel that you would like to be escorted to your vehicle, bus, or campus residence after 5:00 p.m., do not hesitate to call (213) 740-4911.

Instructor Student Communication and Blackboard

Blackboard (Bb) will be used to post announcements, send e-mails, and post all grades and course materials, so it is the student's responsibility to frequently visit the course on Blackboard (website: <http://blackboard.usc.edu>). Bb transactions will follow the below guidelines.

- 1) **Grades:** All grades and points will be posted on Bb one to two weeks after the completion of the exam, assignment, or activity. Grades will not be announced in class, via e-mail, or during office hours.
- 2) **Course Materials:** The syllabus, homework assignments, and supplemental reading material can be viewed and printed from Bb.
- 3) **Announcements:** Class announcements will be posted on Bb, as well as broadcasted in class.
- 4) **Email:** Any email communications from the instructor or TA will be sent via Bb or through the USC's email service. USC requires that all e-mail communication between the instructor and students be sent via an official USC e-mail address. *Any student communication delivered from a non-USC e-mail address will be automatically discarded.* Lastly, please see "How to e-mail a professor" on Bb for guidelines on how to write an appropriate e-mail to a professor.

Special Notes

- 1) This course is challenging and 100% attendance is expected of all students. There are no exams, midterm, or final exam. You will, however, need to dedicate the time that you would typically spend studying for tests to conducting your research and writing high quality papers. As in any course, work of a significantly high caliber in each of the components of this course is considered to be an A (i.e., exceptional work). It is especially important that you be on time for class, have completed your reading assignments prior to class-time, and that you are prepared for discussion of these materials in class.
- 2) *All assignments in this course are expected to be word-processed and graphs/tables should be computer-generated.*
- 3) **All assignments should be completed using APA-style, including the use of a title page.** Assignments are due on predetermined due dates and should be submitted electronically through Bb. Word processing and data management software are available in several computer labs on campus. You should consult your APA Publication Manual for all writing assignments.
- 4) All students are expected to have access to the student computer network. It is your responsibility to ensure that your access is up-to-date during the semester.
- 5) Tutors are available for this course through the Learning Resource Center (LRC). If you should find that you are not doing as well in this course as you would like, please see me immediately. I will help you as best I can. You can also arrange short-term or long-term tutoring through the LRC. The Writing Center is also available to tutor students who are having difficulty with writing. For assistance, visit their website at <http://college.usc.edu/writingcenter/> or call (213) 740-3691.

Tentative Schedule of Topics and Assignments

Week & Reading		Date and Topics	
Week 1	08/26/2013	08/28/2013	NO LAB
Syllabus Chapter 1	➤ Overview of Course	➤ Psychological Science as a Career	
Week 2	09/02/2013	09/04/2013	LAB #1
Chapter 1	➤ Labor Day ➤ No Class!	➤ Philosophy of Science	➤ APA Format ➤ Microsoft Word ➤ SPSS
Week 3	09/09/2013	09/11/2013	LAB #2
Chapter 2 (pp. 29-57) Other Articles	➤ Logic of Scientific Discovery ➤ Understanding Theories	➤ Understanding Theories ➤ The Art of Scientific Discovery	➤ Complete Experiment ➤ Evaluate Posted Article ➤ Enter Data SPSS
Week 4	09/16/2013	09/18/2013	LAB #3
Other Articles Sternberg & Sternberg (2012)	➤ Reading & Evaluating Journal Articles	➤ Writing Style for Psychological Science	➤ Find Articles ➤ Write Literature Review and Methods for First Paper
Week 5	09/23/2013	09/25/2013	LAB #4
Chapter 2 (pp. 57-66) Other Articles	➤ The Ethics of Scientific Discovery	➤ Institutional Review Board	➤ NIH Certification ➤ Analyze Data ➤ Write Results & Discussion Sections ➤ <i>First Paper Due September 29th at 11:59 p.m.</i>
Week 6	09/30/2013	10/02/2013	LAB #5
Chapter 3 Chapter 7	➤ Validity ➤ Reliability ➤ Measurement Scales	➤ Experiments I	➤ Choose Groups ➤ Choose Experiment ➤ Read Posted Articles & Find Articles
Week 7	10/07/2013	10/09/2013	LAB #6
Chapter 7 Chapter 9	➤ Experiments II	➤ Choosing Research Designs	➤ Collect Data for Second Paper ➤ Write Lit. Review ➤ Develop Ideas for Final Project

Week 8	10/14/2013	10/16/2013	LAB #7
Rossi (2013) Wilkinson et al. (1999) Chapter 11	➤ Sampling & Power Analysis	➤ Reporting Research	➤ Analyze Data ➤ Write Results & Discussion Sections ➤ Decide Topic for Final Research Project ➤ <i>Second Paper Due Sunday, October 20th at 11:59 p.m.</i>
Week 9	10/21/2013	10/23/2013	LAB #8
Chapter 8 Chapter 4	➤ Quasi-Experiments	➤ Creating Questions & Items	➤ Search for Literature on Research Topic ➤ Write Research Proposal
Week 10	10/28/2013	10/30/2013	LAB #9
Chapter 4 Chapter 5	➤ Creating Questions & Items	➤ Threats to Validity	➤ Write Research Proposal ➤ <i>Proposal Due Friday, November 1st at 11:59 p.m.</i>
Week 11	11/04/2013	11/06/2013	LAB #10
Chapter 10 Wilkinson (2012)	➤ Descriptive Statistics	➤ Using Tables and Graphs to Display Data	➤ Create Materials for Final Research Project ➤ Revise Literature Review & Methods Section
Week 12	11/11/2013	11/13/2013	LAB #11
Graham et al. (2013) Denis (2003)	➤ Dealing with Missing Data	➤ Inferential Statistics	➤ Complete Materials ➤ Collect data
Week 13	11/18/2013	11/20/2013	LAB #12
Aiken et al. (2012) Fidler & Cumming (2013)	➤ Displaying Main Effects & Interactions	➤ Significance, Effect Size, and Confidence	➤ Collect Data ➤ Begin Inputting Data into SPSS ➤ Analyze Data if Available
Week 14	11/25/2013	11/27/2013	NO LAB
Chapter 12	➤ Maximizing Validity	➤ Thanksgiving Break!	➤ Thanksgiving Break!

Week 15	12/02/2013	12/04/2013	LAB #13
Tashakkori et al. (2013)	➤ Developmental Designs & Working with At-Risk Populations	➤ Mixed Methods	➤ Analyze data ➤ Begin Results & Discussion Sections for Final Research Paper
Week 16	12/13/2013		
	Presentations: 2:00 p.m. to 4:00 p.m. Research Paper Due TODAY at 11:59 p.m.		

Syllabus as a Contract

The purpose of this syllabus is to provide a contract between the instructor and the student. By enrolling in this class, you agree that you have read, understand, and will adhere to the syllabus guidelines and complete the assignments given in the class. I reserve the right to change the schedule of topics and readings and I will give notice to you of such changes well in advance of those changes.

ANOVA: ANALYSIS OF VALUE

IS YOUR RESEARCH WORTH ANYTHING?

Developed in 1912 by geneticist R.A. Fisher, the Analysis of Value is a powerful statistical tool designed to test the significance of one's work.



am i wasting my time?

The test involves computation of the $F'd$ ratio:

$$F'd = \frac{\text{sum(people who care about your research)}}{\text{world population}}$$

This ratio is compared to the F distribution with $I-1, N_I$ degrees of freedom to determine a $p(\text{in your pants})$ value. A low $p(\text{in your pants})$ value means you're on to something good (though statistically improbable).

Significance is determined by comparing one's research with the Dull Hypothesis:

$$H_0: \mu_1 = \mu_2 ?$$

where,

- H_0 : the Dull Hypothesis
- μ_1 : significance of your research
- μ_2 : significance of a monkey typing randomly on a typewriter in a forest where no one hears it.

Type I/II Errors

The Analysis of Value must be used carefully to avoid the following two types of errors:

- Type I: You incorrectly believe your research is not Dull.
- Type II: No conclusions can be made. Good luck graduating.

Of course, this test assumes both Independence and Normality on your part, neither of which is likely true, which means *it's not your problem*.

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