

Experimental Research Methods (Psyc 314)

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Zoom conference hours general availability: Tues & Thur: 1pm to 2pm; other times are available
- students should always email to schedule time for conferences -

Course Objectives

Psychology is a science. A basic goal of Psyc 314 is to qualify each student to competently and comprehensively argue why and how psychology is a science. In realizing this goal, students will learn the fundamentals of how to design valid experimental research and how to critically evaluate published research. The principal emphases in the course will examine the philosophy of the scientific method, the essential elements of research design, the analysis and interpretation of data, and the writing up of scientific studies according to the standards set by the American Psychological Association. A constant, supportive emphasis across the semester will encourage each student to self-identify those areas of psychological research in which he or she is most interested; each student is expected to begin building a foundation of theoretical concepts in his or her self-identified area of research interest. Students will also become oriented to the Code of Research Ethics that has been adopted by the American Psychological Association.

Course Prerequisites

Introduction to Psychology (General Psychology) and Statistics for Psychology must have been successfully completed (grade of C- or better) prior to enrollment in this class. Note: you may not take these prerequisites concurrently with Psyc 314.

Required Texts

- (1) Pelham, B.W., and Blanton, H. (2007). *Conducting Research in Psychology*. Belmont, CA: Thomson Wadsworth.
- (2) American Psychological Association (2001). *APA Publication Manual* (5th ed.). Washington, D.C.

Evaluation Criteria

Grades for this course are based on seven major components. Each of these will be assessed separately and posted in the Blackboard grade-book on the basis of 100 points. This approach to posting grades provides a form of scoring with which each student should be quite familiar. For example: a score of 100 is the best score possible; a score of 70 indicates 70% correct; and so on. However, the proportionally weighted importance of each in computing the final total course score is not the same for each separate component.

The weighted importance for each component on your final total course grade will be as follows:

Mid-term examination I	13 %
Mid-term examination II.....	13 %
Final Examination (comprehensive).....	18 %
Attendance and participation (participation points, responsiveness in discussion).....	10 %
Group grade – article critique – presentation and questions combined.....	11 %
Lab assignments (typical weekly assignments & research report rough drafts).....	20 %
Final Research Report.....	15 %

Cut-Points for Letter Grades

In percentages your letter grade will be assigned as follows:

A = 93.5 (and above), A- = 89.5 to 93.4,
B+ = 86.5 to 89.4, B = 82.5 to 86.4, B- = 79.5 to 82.4,
C+ = 76.5 to 79.4, C = 72.5 to 76.4, C- = 69.5 to 72.4
D = 60 to 69.4, F = below 60.

Examinations

There will be three examinations (see course schedule for dates). The examinations will test your understanding of the major concepts in the course and focus on both the details and the "big picture." All examinations are based on a combination of lecture material, class discussions, textbook, student oral presentations, video-presentations, assignments, and handouts. Study guides to prepare for the exams will be provided in the form of *Think Tanks*; these identify the important vocabulary and concepts that will be covered on the exams. Real-time classroom practice for the exams will be provided in class with multiple *bonus preps*. The *think-tank* study guides and the *bonus-preps* are the best

representation of what you can expect on the examinations. The exams may consist of multiple-choice questions, matching, and short essays. The two mid-term exams will each separately cover five different textbook-chapters of lecture material. The final exam will comprehensively cover everything that has been addressed in the course.

Bonus-Preps

“Bonus-preps” will be scheduled throughout the semester as preparation for the exams. The bonus-preps are presented in a multiple choice and short answer format. These preps *very closely* approximate what students can expect to see on the mid-term exams. They are provided as practice for the mid-term exams. They also provide an opportunity for students to earn bonus points to supplement and improve their mid-term exam scores. The better a student performs on the bonus-preps, the more bonus points he or she will earn toward improving his or her mid-term exam raw score. Students cannot disadvantage their final course grade by participating in the bonus-prep opportunities; however, they can advantage their mid-term exam scores by preparing well for the bonus-preps. Furthermore, by keeping up with the readings, by completing and studying the weekly *think-tanks* (the course “study guides”), and by participating in the class discussions and bonus-preps, students should be well prepared for the exams – they should *not* need to schedule intense study-time (i.e. cram) for the exams.

Blog Points

Internet Blog exercises will be offered throughout the semester as additional conceptual stimuli in the course. The Blog is located via the Tools folder on the course Blackboard. Though Blog participation is completely voluntary, students who decide to participate in these exercises will gain supplemental points to apply to their final exam scores. Similar to the manner in which bonus-preps act to increase mid-term exam scores, *blog points* act to increase the *final exam* scores. The difference in the two is that blog points are earned simply via “appropriate” responses, not by the correctness of a blogger’s response.

Attendance/Participation Points

Reading the assigned material, engaging the course Blog, and working on the think tanks before class are important to understanding the lecture topics and to participating in the classroom 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 Assignments and Rough Drafts of the Research Report

The typical lab assignments are designed for you to gain weekly experience in applied aspects of research methodology, such as the conceiving of a topic for investigation, conducting literature searches, understanding that which should be included in an APA-style research report, managing databases, and analyzing data using commercially available statistical programs such as SPSS. The primary goal of the lab is for you to “put into practice” the principles of science as they apply to your own individual research interests. This goal will culminate in your production of an APA-style research report. You will complete lab assignments in a step-wise fashion that help you to write this final report across the full expanse of the semester rather than quickly at the end. Your Lab grade will be derived from the sum of all *typical* lab assignments and from the two rough drafts of the research report. The typical assignments will count for approximately 60% and the rough drafts will count for the approximate 40% remainder. Your best efforts should be applied throughout the typical lab assignments and on both rough drafts. The rough drafts are termed “rough” only because your teaching assistant will be providing feedback and indicating where you can make corrections/additions/alterations to improve the final version of your research report.

Final Research Report

One of the major assignments in Psyc 314 is to write a publishable quality, APA-style research report. The report will be due close to the end of the semester (see dates in course schedule). The assignment includes strategic elements that are quite real while some elements will be simulated. Each student is expected to construct a real research proposal that is relevant to their own self-identified area of research interest. This effort conforms to actual research behavior. After explicitly providing the theoretical foundations for the hypotheses and precisely specifying all the procedures that must be implemented, the students will be provided simulated data for their data analysis, *as-if* the specified procedures have actually been executed. The students will then analyze the data, identify significant results, evaluate whether hypotheses have been supported or not, draw conclusions from the results, and modify their theoretical perspectives in a manner that is consistent with the results of the analysis. Again, this effort conforms to actual research behavior. The lab has been constructed to guide each student toward a successful completion of his or her research report.

There are constraints specified in the course for the experimental design that will shape each student’s research report. As one example, the proposed research must be experimental in nature. Also, a specific number and types of variables

are expected to be identified in each student's design. All of these requirements will be made clear as the semester progresses. Each of the concerns will be presented in a step-wise fashion across the semester so that knowledge of the requirements will always precede that which is needed for students to complete the assignments.

The final research report should include the SPSS analysis printout as an *appendix to the report*.

Journal Article Critiques

One of the best ways to learn about research design is to read and critically evaluate research articles. Eight research articles (downloadable from **ARES** – electronic reserves) have been selected (each student will choose one pre-matched pair of articles) – to critique and present in class as part of a student group project. The articles are listed below and the dates for their discussion are indicated in the course schedule (see p.6 of this syllabus). The presentations will be led by groups of students; presentations will be 10 minutes in length. Each student is required to be included in a group.

Each student must *self-select* the presentation group of his or her choice via the Group folder on the course Blackboard. This must be done before the third lecture of the semester. The size of each group will depend on class enrollment, but no group will be larger than five members. For this reason, the earlier a student decides which article he or she would like to present, the more likely he or she will be able to successfully self-select that group. The self-selection task is based on a first-come-first-served procedure. **DO NOT SELF-SELECT YOURSELF TO MORE THAN ONE GROUP.** If you wish to work as a group with other specific students, you should first determine which group has enough vacancies open to include all of you; then, all should try to self-select to the same group at the same time.

Grades for this assignment will be based partly on group performance and partly on individual performance. Guidelines to help students function well together within a group context will be provided by the beginning of the third week of the semester. Guidelines specifying the information that is expected to be included in the presentation will also be provided.

Each presenting group must provide a one-page presentation-summary of the article to all in attendance at the time of your presentation. Your presentations will be assessed on clarity, accuracy, and professionalism. The use of PowerPoint is required. Each presentation group has also been assigned a date on which its members are to pose questions to one of the other presentation groups (see course schedule). Each group member is expected to ask at least one question of the other group. The questions should address experimental research design issues as relevant to the other group's article critique presentation.

Articles for Critical Evaluation (downloadable from ARES)

Groups	Presentation Articles
1	Morewedge, C.K., Gilbert, D.T., & Wilson, T.D. (2005). The least likely of times. How remembering the past biases forecasts of the future. <i>Psychological Science</i> , 16(8), 626-630. (group 1 questions group 6)
2	Von Hippel, W., & Gonsalkovale, K. (2005). "That is Bloody Revolting!" Inhibitory control of thoughts better left unsaid. <i>Psychological Science</i> , 16(7), 497-500. (group 2 questions group 5)
3	Dias, M., Roazzi, A., & Harrio, P.L. (2005). Reasoning from unfamiliar premises. A study with unfamiliar adults. <i>Psychological Science</i> , 16(7), 550-554. (group 3 questions group 8)
4	Cardinu, M., Maas, Rosabianca, & Kiesner, J. (2005). Why do women underperform under stereotype threat? Evidence for the role of negative thinking? <i>Psychological Science</i> , 16(7), 572-578. (group 4 questions group 7)
5	Wong, R.Y., & Hong, Y. (2005). Dynamic influences of culture on cooperation in the Prisoner's Dilemma. <i>Psychological Science</i> , 16(6), 429-434. (group 5 questions group 1)
6	Sangigoli, S., Pallier, C., Argenti, A-M., Ventureyra, A., & de Schonen, S. (2005). Reversibility of the other-race effect in face recognition during childhood. <i>Psychological Science</i> , 16(6), 440-444. (group 6 questions group 2)
7	Sheese, B.E., & Graziano, W.G. (2005). Deciding to defect. The effects of video-game violence on cooperative behavior. <i>Psychological Science</i> , 16(5), 354-357. (group 7 questions group 3)
8	Van Overschelde, J.P., Rawson, K.A., Dunlosky, J., & Hund, R.R. (2005). Distinctive processing underlies skilled memory. <i>Psychological Science</i> , 16(5), 358-361. (group 8 questions group 4)

Missed assignments and/or examinations

Missed participation/class-exercises and examinations cannot be made up and will result in a grade of zero. Students who experience medical emergencies preventing them from attending class on days where class exercises, quizzes, or examinations are scheduled are required to provide original documentation from their physicians within one week explaining their absence. USC athletes should meet with Dr. Breland by the end of the second week of the semester regarding their scheduled athletic events that may conflict with course requirements. *Students honoring religious holy*

days are treated in a similar fashion. Exams will be rescheduled for those whose absences are excused. Participation and class-exercises can be made up (when excused) by writing four-page papers on topics as assigned by Dr. Breland.

Special Notes

- 1 *This course is challenging, and 100% attendance is expected of all students. It is clear that students who attend class regularly, stay up with the readings, complete the assignments with full effort, and who do not leave studying until the last moment typically find that they enjoy the course more and achieve at least a C or better in this course. As in any course, work of a significantly high caliber in each of the components of this course is considered to be B (good) or A (exceptional) work.*
- 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. They are due at the beginning of class on the due date. Word-processing and data management 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 may be available for this course through the Center for Academic Support (213-740-0076) and through the Writing Center (213-740-3691). If you should find that you are not doing as well in this course as you would like, please see me immediately. The longer you delay, the more you will disadvantage your ability to do well.*

Statistics Background

All students in this class are required to have achieved a C- grade or better in their Statistical Methods course and should have an introductory level of familiarity with descriptive and inferential statistics (parametric and nonparametric), their interpretation, and writing and interpreting statistical results. Psyc 314 builds upon your background in statistics; students without an adequate background in statistics and/or who have difficulty reading the output of analyses may find some elements of this course difficult. There will be a review of statistics in about the tenth week of the course and several lab assignments will also serve as review to help in this regard.

Tardy policy

There is a large amount of material to cover in this course. Tardy students (more than 5 minutes late) are disruptive to the class, and significantly retard the flow of information. After being warned of excessiveness tardiness, each time a student is late for class, his/her course grade will be dropped by 1% on the final grade.

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).

Academic Dishonesty

Students are held to the highest standards of ethical conduct. All the materials presented for this course in lecture, lab, discussion, sent via email, or posted on Blackboard are "all rights reserved" by the course instructor. Some of it may be copyrighted and distributed by a publishing corporation for in-class use only. You should be aware that it is a violation of student ethics to store, post, distribute, sell, or purchase any course materials with the intent of offering that material to or receive it from any student who is not presently enrolled in this course (applicable to commercial Internet sources).

You may not submit work for this class that you or anyone else has presented, even in part, for this or another class. You should be especially vigilant with regard to plagiarism (presenting someone else's ideas as your own, whether deliberately or accidentally – in whole or in part, without appropriately citing the authors in APA format).

Office of Student Accessibility Services

To receive accommodations in the academic environment, students with disabilities and/or special needs must be registered with the University Office of Student Accessibility Services (OSAS). A letter verifying approved accommodations can be obtained from OSAS when adequate documentation supporting a need for accommodation is filed. OSAS is open Monday-Friday, 8:30-5:00; their phone number is (213) 740-0776. Students with approved accommodations from OSAS should meet with Dr. Breland as soon as possible after receiving their letter of approval. Requests for accommodations can be submitted at any time during the semester but may not be applied retroactively to work completed prior to approval.

Psyc 314 Course Schedule

Wk #	Date	Lectures	Labs	Assigned Readings
1	8/22	Introduction to class Psychology as a Science	<i>No Lab first week of semester</i>	<u>Reference:</u> <i>Conducting Research in Psychology- Pelham and Blanton</i> – Chapter 1
2	8/29	* Bonus Prep #1 – 2nd lecture of week Variables, hypotheses, theories, and laws **Midnight 9/6 – deadline for self-selection to article critique groups on Blackboard (Groups folder)	Introduction to your research report and computerized literature searches	<u>Reference:</u> <i>Conducting Research in Psychology- Pelham and Blanton</i> – Chapter 2
3	9/5	Monday – University Holiday – Labor Day Variables, hypotheses, theories, and laws	Continued literature search; Introduction to Locke 12 step + 1	<u>Reference:</u> <i>Conducting Research in Psychology- Pelham and Blanton</i> – Chapter 3
4	9/12	Types of scales of measurement, measuring psychological constructs, & creating specific scales	Exercise in constructing measurement scales / Discuss Introduction to the Research Report	<u>Reference:</u> <i>Conducting Research in Psychology- Pelham and Blanton</i> – Chapter 3 & 4
5	9/19	* Bonus Prep #2 – 1st lecture of week Internal Validity Threats <i>Also: Overview of Scientific Writing and Review for Mid-Term</i>	Construct Validity: Factor Analysis & Inter-item reliability / Explicit specification of research questions / Continued discussion of RR Intro	<u>Reference:</u> <i>Conducting Research in Psychology- Pelham and Blanton</i> – Chapter 5
6	9/26	* Mid-Term Exam #1 (topics of 1st 5 wks) administered over the entire 1st lecture period 2 nd lecture: The basics of experimentation The simple experiment	Constructing the general design of the course “experiment” via consistency with the expected RR variables	Mid-Term Exam: BonusPreps & Think Tanks <u>Reference:</u> <i>Conducting Research in Psychology- Pelham and Blanton</i> – Chapter 7 (note: chapter 6 is being skipped temporarily)
7	10/3	Continued Discussion of Experimental Design with Brief Consideration of Sampling Theory Introduction to Quasi-Experiments * Bonus Prep #3 – 2nd lecture of week	Considering how to write the RR Methods section	<u>Reference:</u> <i>Conducting Research in Psychology- Pelham and Blanton</i> – Chapter 8
8	10/10	Factorial Designs - between & within subject Thur. & Fri. – University Holiday – Fall Recess	Take Home Lab: Short Stat Review: different experimental hypotheses imply different statistical tests	<u>Reference:</u> <i>Conducting Research in Psychology- Pelham and Blanton</i> – Chapter 9
9	10/17	Contrast: Experimental vs. Non-Experimental Designs * Bonus Prep #3 – 2nd lecture of week	Non-Experimental Lab * Intro/Method rough draft due by Weekend	<u>Reference:</u> <i>Conducting Research in Psychology- Pelham and Blanton</i> – Chapters 6 & 10

Psyc 314 Course Schedule

Wk #	Date	Lectures	Labs	Assigned Readings
10	10/24	Statistics Review: Inferential Tests and Conceptual Discussions of Test Coefficients - Implications for Evaluating Significance (statistical and substantive)	Improving the first rough draft / Considering how to write the Results section of the RR	<u>Reference:</u> <i>Conducting Research in Psychology- Pelham and Blanton</i> – Chapter 10
11	10/31	Continued Statistics Review * Bonus Prep #4 – 2nd lecture of week Mid-Term Review - Topics from Weeks 6 - 11	Initiate Analyses of Research Report Simulated Data	<u>Reference:</u> <i>Conducting Research in Psychology- Pelham and Blanton</i> – Chapter 10
12	11/7	* Mid-Term Exam #2 – 1st lecture of week Reading and evaluating research Recap of <i>scientific writing</i> concerns	Continue Analyses of Research Report Simulated Data Considering how to write the Discussion section of the RR	Mid-Term Exam: BonusPreps & Think Tanks
13	11/14	Ethics in Scientific Research Preparing for Critical Evaluations * Bonus Prep #5 – 2nd lecture of week	* Results/Discussion rough draft due by Weekend No lab / TA appointments available	<u>Reference:</u> <i>Conducting Research in Psychology- Pelham and Blanton</i> – Chapter 11.
14	11/21	<u>Journal Article Critiques (1st lecture period)</u> Group 1 (questions from group 5); Group 2 (questions from group 6); Group 3 (questions from group 7); Thanksgiving – University Holiday – Wed thru Fri	No lab / TA appointments available < Re: Improving 2 nd rough draft >	Published articles as assigned to groups (see page 3 of syllabus) In order for the transitions between presentations to go smoothly, you MUST email your PowerPoint slides to Dr. Breland the night before your presentation
15	11/28	<u>Journal Article Critiques (1st lecture period)</u> Group 4 (questions from group 8); Group 5 (questions from group 2); Group 6 (questions from group 1); Group 7 (questions from group 4); <u>Journal Article Critiques (2nd lecture period)</u> Group 8 (questions from group 3) * Final course review *	** Lab WILL Meet ** Lab Wrap-up Opportunity for Final Exam Bonus Points * Final Version of Research Report Due	In order for the transitions between presentations to go smoothly, you MUST email your PowerPoint slides to Dr. Breland by the night before your presentation
Final Exam		Lecture Section 52520 (MW 2:00 pm) Exam on Friday 12/9 at 2:00 pm	No Lab Final	Cumulative Exam