Experimental Research Methods (Psyc 314)  
William Breland, Ph.D.  
Fall 2012  
Office: SGM 529; e-mail: wbreland@usc.edu  
Office hours: Monday & Wednesday – 1 pm to 2 pm; Tuesday – 9:30 am to 10:30 am; and by appointment

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.

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.

Required Texts  

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:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-term examination I</td>
<td>13%</td>
</tr>
<tr>
<td>Mid-term examination II</td>
<td>13%</td>
</tr>
<tr>
<td>Final Examination (comprehensive)</td>
<td>18%</td>
</tr>
<tr>
<td>Attendance and participation (participation points, responsiveness in discussion)</td>
<td>10%</td>
</tr>
<tr>
<td>Group grade – article critique – presentation and questions combined</td>
<td>11%</td>
</tr>
<tr>
<td>Lab assignments (typical weekly assignments &amp; research report rough drafts)</td>
<td>20%</td>
</tr>
<tr>
<td>Final Research Report</td>
<td>15%</td>
</tr>
</tbody>
</table>

In percentages your letter grade will be assigned as follows:

- A = 92.5 (and above), A- = 89.5 to 92.4,
- 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.

**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 second Sunday 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**

<table>
<thead>
<tr>
<th></th>
<th>Presentation Articles</th>
</tr>
</thead>
</table>

**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 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. Each of these components will count for approximately one-third of your total Lab grade. 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.
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.

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.

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 a first tardy, each time a student is late for class, his/her class grade will be dropped by 1% on the final grade.

Cell Phone and Electronic Device Policy
Cell phones should be turned off during class. Computers may be used for note taking purposes only. Any other usage (such as accessing Facebook, email, or gaming in class) is not permitted and will result in disciplinary action.

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 and DSP Arrangements
Students are held to the highest standards of ethical conduct. 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). Note that plagiarism includes the use of another's writing without proper use of quotation marks, the borrowing of a word or phrase, the use of an idea, or the paraphrasing of material if that phrase, idea, or material is not properly introduced and/or documented (including merely rearranging phrases into an original form), and presenting a paper written by or produced in collaboration with someone else (friend, colleague, professional writer) as solely your own work.

Students with disabilities and/or special needs should be registered through the University DSP and should meet with me regarding the arrangements approved through the DSP within the first week of entering the course.

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. 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. 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 are 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.
Course Schedule -- Fall, 2012

1. Please be aware that changes in the required readings, topics and schedule may be made at the discretion of the professor.

2. CRP refers to your course textbook: Conducting Research in Psychology (Pelham & Blanton).


<table>
<thead>
<tr>
<th>Date</th>
<th>Topic(s)</th>
<th>Required reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction to the class</td>
<td>CRP Chp. 1</td>
</tr>
<tr>
<td></td>
<td>Psychology as a science</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO LAB during first week of semester</td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td>Variables, hypotheses, theories, and laws</td>
<td>CRP Chp. 2</td>
</tr>
<tr>
<td></td>
<td><strong>USC Holiday on 9/3 – Labor Day</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LAB: Introduction to your research report and computerized literature searches</td>
<td></td>
</tr>
<tr>
<td></td>
<td>** Midnight 9/8 – deadline for sign-ups for journal articles critical groups via self-selection on Blackboards (Groups folder) **</td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>* Bonus-prep #1 during week’s first lecture period (Topics – weeks 1 &amp; 2)</td>
<td>CRP Chp. 3</td>
</tr>
<tr>
<td></td>
<td>Construct validity &amp; operational definitions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reliability and validity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LAB: Continued lit search; Introduction Locke 12-step+1 lit summaries</td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td>Types of scales of measurement, measuring psychological constructs, &amp; creating specific scales</td>
<td>CRP Chps. 3 &amp; 4</td>
</tr>
<tr>
<td></td>
<td>LAB: Exercise in constructing measurement scales / Considering the Introduction to the research report</td>
<td></td>
</tr>
<tr>
<td>Week 5</td>
<td>* Bonus-prep #2 presented during first lecture period (Topics – weeks 3 &amp; 4)</td>
<td>CRP Chp. 5</td>
</tr>
<tr>
<td></td>
<td>Internal validity</td>
<td>CRP Chps. 1,2,3,4, and 5</td>
</tr>
<tr>
<td></td>
<td>LAB: Construct Validity: Factor analysis &amp; Inter-item reliability / Explicit specification of research questions / Continued consideration of Introduction to the research report</td>
<td></td>
</tr>
<tr>
<td>Week 6</td>
<td>* Examination #1 during week’s 1st lecture period (Topics for weeks 1 -5)</td>
<td>CRP Chp. 7</td>
</tr>
<tr>
<td></td>
<td>The basics of experimentation: the simple experiment (two-group between subjects design)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LAB: Constructing the general design of the course “experiment” via consistency with its specified scales of measurement</td>
<td></td>
</tr>
</tbody>
</table>
Week 7 (10/8 – 10/12)  
* Bonus-prep #3 during week’s last lecture period (Topics for weeks 6 and 7)  
  Experiments vs. quasi-experiments  
  CRP Chps. 7 & 8  
  LAB: Considering how to write the research report’s Methods section

Week 8 (10/15 – 10/19)  
  Factorial designs, between- & within-subject  
  CRP Chp. 9  
  LAB: Short stat review: different statistical tests imply different types of experimental designs and hypotheses

Week 9 (10/22 – 10/26)  
Non-experimental investigations  
  CRP Chp. 6  
  LAB: Re-thinking the “experiment” as a “non-experimental” design / Correlations and Regressions  
**The rough draft of the introduction and methods section for the research report is due**

Week 10 (10/29 – 11/2)  
  Analyses and statistical considerations; reviewing and extrapolating some basic ideas  
  CRP Chp. 10  
  LAB: Improving first rough draft / Considering how to write the Results section of the research report

Week 11 (11/5 – 11/9)  
* Bonus-prep #4 during week’s first lecture period (Topics – weeks 8-10)  
  Review  
  CRP Chps 6, 7, 8, 9, and 10  
  LAB: Analyzing the simulated research data

Week 12 (11/12 – 11/16)  
* Examination #2 during week’s 1st lecture period (Topics for weeks 6-10)  
  Reading and evaluating research  
  CRP Chp. 11  
  Overview of scientific writing  
  APA Chp. 5 (pp. 306-320)  
  LAB: Considering how to write the Conclusion to the research report

Week 13 (11/19 – 11/23) **USC Holiday 11/21-11/24 Thanksgiving**  
* Bonus-prep #5 during week’s first lecture period (Topics – weeks 11 & 12)  
  Ethics in scientific research  
  CRP Chps. 2 & 11  
  Preparing for the critical evaluations  
  p. 8 of this syllabus,  
  NO LAB during week of Thanksgiving  
** Rough draft of results section and your conclusions to research report is due**

Week 14 (11/26 – 11/30)  
* Journal Article Critical Evaluation  
  Groups 1 (questions from group 5), 2 (questions from group 6), and 3 (questions from group 7)  
  Groups 5 (questions from group 2), 6 (questions from group 1) and 4 (questions from group 8)  
  LAB: APA requirements for references, graphs, etc.  
    (rough draft of research report results section will be returned)
Week 15  (12/3 – 12/7)
  * Journal Article Critical Evaluation
    Groups 7 (questions from group 4) & 8 (questions from group 3)
  * Course Review
    * Final Draft of Research Report is Due per TA Directions*
      
      *NO LAB during last week of semester*

**Final Examinations**

Section 52505 (TTh 8:00 am) Final Examination: 12/18, Tuesday, at 4:30 pm.

Section 52515 (MW 8:30 am) Final Examination: 12/12, Wednesday, at 8:00 am.

Section 52520 (MW 3:30 pm) Final Examination: 12/17, Monday, at 2:00 pm.