

Experimental Psychology I

Psychology 201
Section PS201-01
Fall, 2008

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I. Introduction

This course is designed to give the serious sophomore level student an in-depth look at the field of psychology as a science and way of knowing. Although it's content area concerns the study of human behavior, the principals are applicable to most any area of scientific inquire. This course is designed to teach many of the concepts needed to understand, conduct, and interpret common experiments in psychology.

This course is designed around several objectives: First, to teach students what it means to explain or understand behavior and how and why psychologists rely on the scientific method for studying human behavior. Second, to expose the student to the varieties of procedures and measures available for the study of human behavior. Finally, and perhaps most importantly, a central objective of this class is to help the student gain an appreciation of psychology, in particular, and of all the sciences, in general, by focusing as much on the discovery process of science as on the results.

Students in this course will be exposed to and ultimately expected to comprehend: 1) basic psychological research methodology; 2) basic statistical design and analysis; 3) psychophysical methods; 4) measures of perceptual and attentional processes; and 5) measures of memory and basic cognitive processes. As such, this is not a "comfortable" course, but rather one that will at times be time-consuming and psychologically as well as intellectually taxing. However, students who sincerely apply themselves will gain rich rewards. First, they will acquire basic research skills and a deeper understanding of the nature of science and human behavior. Second, sound methodological skills will prove invaluable for later study in psychology, physical sciences, social sciences and they are applicable to practically any vocation. Finally, as research and data based conclusions come to have a greater impact on our everyday lives, students who apply themselves to this course will acquire skills that are valuable for critically evaluating and interpreting such claims.

This course is divided into two parts: the regular class meetings, and a laboratory component. The lecture-discussion sessions will stress research procedures and findings. This will give students an overview of the procedures, methods, and theory of experimental psychology. The laboratory sessions will provide the student with in-depth practice in designing, conducting, analyzing, and writing up psychological experiments. The course is designed so that by integrating the components of the course the student will come to understand the complexities and subtleties of research and experimental design.

II. Texts and Other Materials

The required reading and study material will be from several sources including one basic text and a book for theoretical discussion. Additional reading and study material are placed on reserve in the library, or are available in the department.

A. Required Text: The required text for the class is listed below. These books may be purchased at the university bookstore. Most reading assignments listed in Section IV come from these texts.

Kantowitz, Barry H., Roediger, Harry L., Elmes, David G. (2008) *Experimental Psychology* (9th Edition). Belmont, CA: Wadsworth Thompson

B. Supplemental Texts: Several supplemental texts are available from the bookstore, at the library or from the department.

American Psychological Association. (2001). *Publication Manual of the American Psychological Association* (5th Ed.). Washington, DC: Author

Kendler, Howard H. (1963) *Basic Psychology*. New York, NY: Appleton-Century-Crofts.

Stanovich, Keith E. (1998). *How to think straight about psychology* (6th Ed.). Glenview, IL: Scott, Foresman, & Company.

Woodworth, R.S. & Schlosberg, H. (1954). *Experimental Psychology*. New York, NY: Henry Holt Co.

C. Other Materials: Several other supplementary materials will be used in this course. Most will be provided by the university at no or minimal cost to the student. Others must be acquired from local vendors First, the student must purchase a Texas Instruments[®] Model 36X (**TI-36X**) or comparable pocket calculator (a good price is about \$28.00). The student is responsible for having the manual and knowing how to use their calculator. **If you don't have the manual, you don't have a calculator!** The student should also purchase ruled **non spiral-bound** notebook paper for doing assignments.

The university will provide the student with access to Macintosh[®] computers and software including Microsoft Word[®], Excel[®], a web browser (Firefox recommended) and SPSS from SPSS Inc. These software packages are all protected by US copyright laws and may not be copied or distributed in anyway. It is a violation of the policies stated in the Butler University Student Handbook to copy these programs. The student is directed to that publication for further information. Many materials for the class will be made available via the course Web site at <http://rpadgett.butler.edu/ps201>. Students should be familiar with how to access materials via the Web.

III. Course Requirements

A. Reading and Study Assignments: Assignments are from the basic text and are listed in Section IV of this syllabus. It is the student's responsibility to adhere to the prescribed assignments. **The most serious error a student can make in this course is to not meet these assignments on a regular basis.** This means not only reading, but studying and assimilating the material to the point of thorough understanding. Many of the topics can be tedious and complicated. It can not be learned well in two or three bursts of work during the semester.

B. Examinations: There will be four examinations during the 16 week session. Because a thorough understanding of experimental psychology requires the integration of many component parts, a **comprehensive final exam** will be given.. The exams will be divided into two parts. Part I is always closed book and composed primarily of objective and short answer type questions. Part II is open book and will consist primarily of short answer and computational / computer type items. Expect in class exams to take 1 hour. Longer open-book exams may become take-homes. Students are expected to bring a no. 2 pencil to all examination sessions. Exams will be given on the dates specified in Section IV of this syllabus. Take-home exams will be due at the next class meeting and must be checked in by the instructor, or at his direction, the department secretary. **Take-home exams may not**

be turned in when the instructor is unavailable.

C. Homework: Research methodologies and statistics are learned best by doing, not by just reading. **YOU ARE EXPECTED TO DO EVERY HOMEWORK PROBLEM BY ITS ASSIGNED DATES.** Homework assignments will be given on a regular basis throughout the class and the due dates will be announced in class. Computer assignments can be completed in JH280 or at the Computer Lab located on the second floor of the Holcomb building on campus. Several other computer labs are available on campus. Check at the Computer Center for a complete list. The instructor will be available after class to help in the computer lab. At **RANDOM INTERVALS** some homework problems will be collected at the **BEGINNING OF THE CLASS** without discussion. Students who fail to turn in their homework on time will receive zero points for that assignment. For more information see Section VI of this syllabus. **LATE HOMEWORK ASSIGNMENTS WILL NOT BE ACCEPTED.**

D. Class Attendance: Class **ATTENDANCE** and **PARTICIPATION** is mandatory if the student is to grasp complex concepts and principles. No more than three absences are expected without **SERIOUS GRADE DETERIORATION including failing the course.** Students must attend **all laboratory** sessions. For more information see Section VI of this syllabus. **STUDENTS SHOULD BE PREPARED FOR ALL CLASS SESSIONS.** That is, you should have **completed your homework, read the assignment, and have your calculators, books, and papers with you for all class sessions.** Classroom sessions may not be video or audio recoded without the express written consent of the instructor. Students should be ready to start work immediately at the beginning of class. Students should not be reading newspapers, textbooks, materials for other classes, or otherwise occupied during class time. **STUDENTS USING COMPUTERS DURING CLASS TIME FOR ANYTHING OTHER THAN PS-201 MATERIAL AS ASSIGNED BY THE INSTRUCTOR WILL BE INSTRUCTED TO LEAVE THE ROOM.** Do not come to class and interfere, hold back, or distract students who come to class prepared to learn. **CELLULAR PHONES PAGERS AND OTHER PERSONAL ELECTRONIC DEVICES MUST BE DEACTIVATED DURING ALL CLASS AND LABORATORY SESSIONS.**

NO MAKE-UP EXAMINATIONS are allowed. If you are unable to attend a scheduled examination, appropriate arrangements must be made with the instructor **IN ADVANCE.** Because of their content, only some laboratories may be made-up. All laboratory make-ups must be completed within **three class days.**

E.. Discussion Papers: To help the student better understand the role of science in psychology, a set of three discussion papers are prescribed. These papers should be **THOUGHTFULLY PREPARED** and **INTEGRATIVE** of what the student has learned. The papers should be **NEATLY TYPED IN DOUBLE-SPACED FORMAT, CAREFULLY PROOFREAD** (very important!) and **CHECKED** for spelling and grammatical errors. Macintosh and Windows computers with Microsoft Word® word processing software and internet access are available to all students in several locations on campus. Students should make themselves familiar with the location of these resources and their hours of availability in the first week of class. Discussion papers are due at **BEFORE CLASS** on the dates specified in Section IV. As a primary purpose of the paper is to prepare students for the an in-class discussion of the topic, papers will not be accepted after the respective due dates and times. Discussion paper topics and submission format requirements are described in Section V.

F. Laboratory Reports: A set of three laboratory reports are assigned and the due dates are listed in Section IV below. Laboratory reports are due at the **BEGINNING OF LAB** on the dates assigned. Reports not turned in at the beginning of class will be considered late. Late laboratory reports will be accepted with a 10 percent (one letter grade) penalty per each 24 hour calendar period. Laboratory report formats are described in Section V.

G. Office Visits: The student is encouraged to seek help whenever he/she runs into problems with this course. For help over and beyond in class questions, get an appointment with the instructor. The instructor can be reached via email at rpadgett@butler.edu or via phone at his office in the Psychology Department, JH296, at 317-940-9239 or by calling the main office number 317-940-9266 and leaving a message.

IV. Course Schedule and Assignments

Week	Date	Topic	Assignment	Lab
1	1-Sep	Introduction; Basic Research Design; Measurement Scales; Distributions	Kantowitz. Appendix A, Ch 1	Website Use Müller-Lyer Lab
2	8-Sep	Measures of Central Tendency; Measures of Dispersion; Notation; Z-scores	Kantowitz Appendix B, Ch 3	School Spirit
3	15-Sep	Calculator Z-Scores; Population vs. Sample; Sampling error; Confidence Intervals	Discussion Paper #1	Data Entry School Spirit
4	22-Sep	Correlation; Regression	Kantowitz Ch. 3	Sampling Lab
5	29-Sep	Hypothesis Testing; T-Tests; One-tail vs. Two-tail; Type I&II Error	Kantowitz Ch. 10 Discussion Paper #2	Levels of Processing (Levin Ch. 7)
6	6-Oct	First Exam (3-Oct) ANOVA	Kantowitz Ch. 5	Data Analysis: Levels of Processing
7	13-Oct	ANOVA	Kantowitz Ch. 13	APA Style Reports Reading Break Personality Lab Lab Report #1 due
8	20-Oct	Philosophy of Science Non-Statistical Aspects of Design	Readings	Data Entry / Analysis Personality Lab
9	27-Oct	Second Exam (23-Oct) Spring Break		
10	3-Nov	Experimentation in Mental Chronometry	Kantowitz Ch. 8 Discussion Paper #3	Sternberg Memory Lab Report #2
11	10-Nov	Experiments in	Reading TBA	Data Analysis:

Perception and Attention

Sternberg Memory
Lab report issues

12	17-Nov	Scaling Methods;	Kantowitz Ch. 7	Subliminal Perception Lab Report #2 due
13	24-Nov	Classical Psychophysics	Kantowitz Ch. 7	TBA
14	1-Dec	Classical Psychophysics; Signal Detection Theory	Kantowitz Ch. 4 Readings	SDT Lab Lab Report #3
15	8-Dec	Signal Detection Theory	Readings	TBA
		Third Exam (TBA)		Lab Report #3 Due
16	15-Dec	Final Exam Comprehensive		

Tue. 16-Dec, 1:00pm-4:00pm

V. Laboratory Reports Requirements

The discussion papers (DPs) and laboratory reports (LRs), as described in Section III of this syllabus, at the beginning of class (DPs) or lab (LRs) period on the dates listed in Section IV The student will find doing these projects very interesting and integrative of what she/he has learned if she/he starts on them early and puts considerable effort and serious thought into them relative to the material covered in the course. The format and content of these reports are precisely prescribed.

A. Format: All papers must be type using Microsoft Word® on a Macintosh or Windows computer and must be written following the guidelines specified by the American Psychological Association's *Publication Manual* 5th Edition This format will be covered in class and much of the evaluation will be based on how well the format is followed. The Butler University library has a handout of basic information about the format and referencing style that may also be helpful.

B. References: All sources used must be appropriately referenced. Outside references should be referenced as specified in the *Publication Manual*. It is the student's responsibility to be familiar with the College of Liberal Arts and Sciences' policy on cheating and plagiarism, it will be **STRICTLY ENFORCED**. In such cases, the instructor will file a report in the student's record with the Dean of Student Affairs and reserves the right to impose grade penalties, including failing a student in the course, for any violation of the policy.

C. Submission Requirements: Discussion papers and laboratory reports must be bound or stapled, neatly typed in double-spaced format on standard paper. The word count for the document must appear on the first page. Electronic submissions are also required. For laboratory reports, the word count is exclusive of the abstract, references, tables and figures. The submitted papers may be held by the instructor throughout the semester so students are encouraged to keep a copy of their papers for their records.

E. Discussion Paper Description: In the discussion papers, the student should briefly describe the reading they are assigned. On the occasion where students find their own readings, be certain to give a complete enough description so that others who may not have read the work can understand your topic. Following the description, you should **CRITICALLY EVALUATE IT IN LIGHT OF COURSE MATERIAL**. How is the source related to material presented in the course? What does the source tell you about science, human behavior, or the field of psychology. What was your reaction to the situation? Was the information presented consistent with similar phenomenon as described in

class? For example, if your writing about a research study you read, what are the defining measures and procedures used? How was the data analyzed and presented? The exact nature of the discussion and evaluation will, of course, depend on your topic but these general questions should provide some initial guidance. The student should be prepared to **DISCUSS THEIR PAPERS ORALLY IN CLASS** on the due dates. These in-class discussions can make a significant contribution to the student's final participation grade so it is important that you attend these sessions (see section VII for more information).

F. Laboratory Description: The laboratory reports should be APA style summaries of the experiments conducted in the lab. The papers require a well written introduction, a detailed description of the methods and results, and an integrative discussion section. The result section must include all statistical analyses performed and any necessary tables and figures. The instructor will provide significant guidance with all sections, especially on the first report. Grading of these assignments will be based equally on format and content.

VI. Optional Research Participation

All students enrolled in this course may gain extra bonus credit toward their final grade through experimental participation opportunities, **IF AND AS THEY BECOME AVAILABLE** during the term of enrollment. There are several ends to be gained by experimental participation:

- 1) It gives the student an opportunity to view on-going research to learn more about the nature of psychological research.
- 2) Learning more about conducting research may motivate the student to conduct their own research at a later date.
- 3) The student will be contributing her/his part to the advancement of scientific knowledge in this field.

If Psychology Department approved research is scheduled during your enrollment in this course, you may earn bonus credit for participating. Experimenters may describe their projects in class or simply make them available via Butler's online research participation registration system. You will receive credit **ONLY FOR APPROVED** research projects that are listed as being available to students enrolled in this class and on the online system. During the first week of classes, all students should enroll themselves for this course with the Sona Systems® web-based participant enrollment system at <http://butler.sona-systems.com> website. Click on New Participant? Request an Account Here in the lower left corner and fill out the requested information. Once registered, students can read descriptions and sign-up for experiments. The description should briefly outline the participant's task in the research and the amount of time the experiment will take. ***Do not sign up to participate in an experiment unless you really plan to attend.*** Students who fail to show up or do not at least call their experimenters IN ADVANCE risk loss of credit. Students may earn 3 bonus points for every hour (maximum of 3) they participate for a total of 2.25% bonus credit. See Section VII for more information. A research participation form is attached to the end of this syllabus. **BE SURE TO TAKE THIS FORM WITH YOU TO ALL EXPERIMENTS IN WHICH YOU PARTICIPATE AND HAVE IT SIGNED BY THE EXPERIMENTER.** Loss of your form may result in loss of credit.

VII. Grading

Performance evaluations will be affected by the four exams, homework assignments, discussion group evaluations and lab reports. Class attendance and participation can also have a substantial effect hence, truancy may lead to serious grade problems.

A total of 500 points may be earned on the exams. The first three exams are worth 100 points each. The final exam will be worth 200 points. The three discussion paper evaluations are worth a total of 75 points (25 points each). **THE DISCUSSION PAPER PARTICIPATIONS ARE GRADED ON A LETTER GRADE BASIS ONLY.** Letter grades will be converted to point equivalencies. The first laboratory report is worth 25 points, the other two are worth 50 points each. An additional 25 points will be allocated across all homework assignments.

Students who do any of the optional research projects will have the points added to their total. An additional 9 points may be earned by research participation. Students with excessive truancy may have their final grade lowered one letter grade. Final grades in the course will be based on the following scale:

- A = 90% or more of total points
- B = 80% to 89% of total points.
- C = 70% to 79% of total points.
- D = 60% to 69% of total points.
- F = below 60% of total points.

Students in the upper 2% of a range will receive a + added to their final grade while students in the lowest 2% of a range will have a - added to their final grade. For example 88-89.99% is a B+ and 90-91.99% is an A-. Sorry, the university does not utilize the A+ grade. The instructor reserves the right, at his discretion, not to assign the C- grade.

VIII. Disclaimer

While every attempt was made to ensure that this syllabus is accurate and complete, some errors or omissions may remain. The instructor reserves the right to make any corrections or adjustments to this syllabus if circumstances dictate its necessity. Any such changes will be announced in class.

Research Participation Form

Student Name: _____

Student ID: _____ - _____ - _____

Please take this form to all experiments in which you participate. Have your Experimenter sign this form **before you leave**. You are responsible to keep this form until the last class meeting, when you should turn it into the instructor. If you lose this sheet with the signature(s) on it, you may lose the bonus credit you earned.

1. Date: _____ Required: ____ Hr(s)

Experiment Title: _____

Experimenter's Name: _____

Signature: _____

2. Date: _____ Required: ____ Hr(s)

Experiment Title: _____

Experimenter's Name: _____

Signature: _____

3. Date: _____ Required: ____ Hr(s)

Experiment Title: _____

Experimenter's Name: _____

Signature: _____

To All Experimenters:

This person is a student in Dr. Padgett's Psychology class and is eligible for extra credit points by participating in approved research experiments. Students should arrive on time and be credited a minimum of 1/2 hour of participation for every session attended. Please list the title of your project and sign and date the form when the student has completed the experiment. By signing this form, you are assuring me that the above named student actually participated in your **Psychology Department approved** experiment.