Psychology 410
Experimental Psychology
Fall 2008

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Course Description and Learning Objectives

This course provides an intensive, hands-on overview of research methods in psychology. In this class, you will be asked to participate in psychological research and to run participants through studies of your own. You will learn to identify critical strengths and weaknesses of different kinds of research designs and why experiments are the "gold standard" for testing causal hypotheses. You also will be required to come up with your own hypotheses and to design an experiment to test them. You will learn (or re-learn) appropriate statistical tests for analyzing experimental data—including sign tests, Cronbach's alpha, correlation coefficients, *t* tests, and one-way and two-way ANOVAs—and how to report the results of these analyses. You will learn how to write professional-style research reports using the latest edition of the *Publication Manual* of the American Psychological Association. You also may have quite a bit of fun.

This is a very demanding course and it will take a lot of your time, both in class and out. This course is particularly relevant for students who are intending to apply for graduate school in psychology, but is also relevant for anyone wanting to develop their critical thinking skills, to learn about how (and why) research in psychology is done, to become better "consumers" of psychological research, to enhance their ability to communicate in written and oral presentations, and to experience the excitement of scientific discovery.

Prerequisites

As indicated in the Class Schedule, students wishing to enroll in Psychology 410 are required to have completed the Graduation Writing Assessment Requirement or be eligible to enroll in an upper division writing course. Additional prerequisites include Psychology 211 and grades of B or better in both Psychology 270 (or an equivalent statistics course) and Psychology 271.

Required Texts

1. Mook, D. (2001). *Psychological research: The ideas behind the methods.* New York: Norton.

2. American Psychological Association (2001). *Publication manual (5th ed.*). Washington, DC: Author.

Summary of Requirements

1. *Tests and Quizzes.* There will be twelve quizzes, and APA quiz, and one final exam (all cumulative), all within the first eight weeks (!) of the semester. The quizzes serve three goals: (1) they help make sure that you keep on top of the readings, (2) they provide you with a sense of what topics I find most important (as well as a sense of how I write test questions), which should help prepare you for the final, and (3) the quizzes provide me with a clear indication of how well the course material is being understood. The final exam is scheduled near the end of October, but is cumulative, and will cover the *entire text* and *all lectures*.

   Please note: To do well on the quizzes and on the final, you will need to show that you have done more than just memorized the material: you will be expected to demonstrate, through example and argument, that you understand and can apply the concepts you have learned.

2. *Attendance and Research Participation*. This class requires that you be actively involved in collaborative research projects. On some days, you will be asked to participate (as a participant) in in-class demonstration studies, and on other days, you will be asked to recruit volunteers to participate in class experiments. These experiments will serve as the basis for class discussions and required papers, so it is critical that you contribute to their completion.

3. *Research Reports.* There are a total of four written reports required for this class. Three of these reports will be based on studies that we will design and run in class. The fourth will be based on an experiment that you design with a small group of classmates as part of a final team project. ***Please note:*** *Although all research projects will be designed, run, and analyzed in groups, each student is responsible for writing his or her own research report.* All research reports must be written in the format of an APA-style paper.

4. *Final Project.* The final project must be an experiment. These experiments will be designed by small groups of two to four laboratory partners. The full project will involve a group-designed proposal, a group poster (presented publicly), and *independent, individually-written research reports*. Each student must turn in their own final paper.

Point Breakdown

Tests		*Participation*		*Research Reports*		*Final Project*	
Quizzes (12@10ea)	120	As Participant	20	Measurement Rep	50	Group Proposal	50
APA Quiz(es)	30	As Experimenter	50	Experiment 1	50	Group Poster	50
Final Exam	250	Attendance	30	Experiment 2	100	Individual Paper	200

Grading

Your grades will be based on percentage of total points. In general, I am a tough grader, but it is certainly possible for everyone to do well in this class. In general, scores of 85% or better earn grades in the A range (e.g., 85.0 to 87.9 = A-; 88 on up = A), scores between 75% and 85% earn grades in the B range (e.g., 75.0 to 77.9 = B-; 78 to 81.99 = B; 82 to 84.99 = B+), scores between 65% and 75% are in the C range, and so on. There will *not* be a curve.

Course Code of Ethics

Plagiarism. Plagiarism is defined at SDSU as "the act of incorporating ideas, words, or specific substance of another, whether purchased, borrowed, or otherwise obtained, and submitting same to the University as one's own work to fulfill academic requirements without giving credit to the appropriate source." Plagiarism constitutes both a violation of the University Judicial Code and of the APA Ethics Code. Plagiarism in this course refers to copying and presenting as your own any material from published or unpublished sources, or any material that is actually the original work of another student. *With the exception of the final project proposal (done in teams) and the poster presentations (also done in teams), it is expected and required that you independently prepare all other assignments for this course, including your final project paper.* If you plagiarize work from any source, including from another student, you will receive at minimum a grade of 0 (zero) on the assignment with no opportunity for remediation, and you may receive a failing grade for the semester, at the instructor's discretion.

Other Rules and Regulations

1. Papers are due at the beginning of class (i.e., at 9:30 a.m., no later) on the day they are due. Any paper turned in after 9:30 will be marked LATE and will lose 5 points, and late papers will lose another 5 points for each class they are late. *Please do NOT miss a class in order to finish your paper—your paper will still be late, and you will also lose attendance points for missing class. It is far more important that you be in class so that you don't get further behind.*

2. There will be no unscheduled do-overs. This means that:

    a. There will be NO MAKE-UP QUIZZES. If you miss a quiz, you will miss the points. Please try to attend all classes, and to take all quizzes. *Please note that most quizzes will be given promptly at the beginning of class, so don't be late!*

    b. A make-up of the final exam will be granted in only the rarest of circumstances (deaths, documented extreme illness, etc).

    c. Papers are final. You will not have an opportunity to re-write your papers, so please do your best with each paper you turn in. And remember that you will have the opportunity to show improvement with subsequent papers.

3. Absences must be excused in advance. I need to be contacted, either by phone or by email, at least an hour before the start of class. If you do not contact me in advance of missing a class, at the least, your participation grade will be negatively impacted, and you may lose the opportunity to earn any points from the day's activities.

Class Schedule

Date	Lecture	Lab
9/2	Course Introduction: What to Expect	Discussion: Why studying research methods is better than learning Latin *For Next Time: Mook Ch.1 (incl. MFw/S)*
9/4	Quiz 1 (Mook 1); Why we need research methods; ways of knowing	Class Project: Collect data (administer survey to SDSU student volunteers); intro to SPSS; tabulate and discuss results *For Next Time: Mook Ch. 2 (incl. MFw/S)*
9/9	Quiz 2 (Mook 2); Introduction to the "Philosophy of Science"	In-Class Study: Are you psychic? Also: The "sign test" and statistical significance *For Next Time: Mook Ch. 3 (incl. MFw/S); write questions for class survey*
9/11	Quiz 3 (Mook 3); An introduction to measurement; Operationalization Also: Importance of comparison and the "present/present" bias	Develop materials for measurement study. *For Next Time: Mook 4 (incl. MFw/S) and Appendix C; APA Manual Ch. 1*
9/16	Quiz 4 (Mook 4 & Appendix C, APA 1); Reliability and validity	Discuss survey details *For Next Time: Administer surveys*
9/18	Data screening; preview of data entry and analysis	Enter and analyze data for measurement study; work on Measurement Study Worksheet *For Next Time: Mook Ch. 5 (incl. MFw/S)*
9/23	Quiz 5 (Mook 5); Sampling, observer bias, and correlations and causality	Correlation and causality exercise; the "good story heuristic"; final questions about Measurement Study Worksheets *For Next Time: Mook Ch. 6 (incl. MFw/S); also Measurement Study Worksheet*
9/25	**DUE: Measurement Worksheet** Quiz 6 (Mook 6); Logic of experimental design; importance of random assignment; statistics focus: one-way ANOVAs & *t*-tests	Experiment 1: Run experiment; enter and analyze data; work on Method and Results sections *For Next Time: Mook Ch. 7 (incl. MFw/S)*
9/30	Quiz 7 (Mook 7); Experimental reliability: obscuring factors and significance tests; more on experimental design	Experiment 1 catch-up (analysis and write-up) *For Next Time: Mook 8; finish M&R*
10/2	**DUE: Methods & Results (Exp 1)** Quiz 8 (Mook 8); Experimental validity, confounded variables	More on confounded variables; introduction to Experiment 2; begin collecting data *For Next Time: Mook Ch. 9 (incl. MFw/S)*
10/7	Quiz 9 (Mook 9); Factorial designs, main effects, interactions and more interactions	Experiment 2: Data screening; hypotheses and literature review; more interactions *For Next Time: Review Ch. 9 (incl. MFw/S)*
10/9	Quiz 10 (Mook 9 again); More interactions and factorial ANOVA designs	Enter and analyze data for Experiment 2; work on Method and Results; displaying results graphically; Discussion sections *For Next Time: Mook Ch. 12 & 13*

10/14	Quiz 11 (Mook 12 & 13); reliability and generalizability of research results; ethics	Writing; Experiment 2 catch-up (everything you need to know about Exp 2) *For Next Time: Draft Exp 2 report*
10/16	Experiment 2 wrap-up	Experiment 2 wrap-up *For Next Time: Mook Ch. 11 (incl. MFw/S)* *Finish Exp 2 report; review Mook Ch. 8*
10/21	**DUE: Complete Experiment 2 Report** Quiz 12 (Mook 11 & 8); Alternatives to the "true" experiment	Experimental validity in retrospect; exam review (esp. Chapters 6, 7, 8, 9, 11 & 12) *For Next Time: Mook Ch. 14 (last one!)*
10/23	Coming full-circle: How the scientific method helps us from fooling ourselves	Review for final exam (bring questions) *For Next Time: Study, study, study…*
10/28	**FINAL EXAM** (cumulative)	Take the rest of lab off… you deserve it! *For Next Time: Sleep!*
10/30	Introduction to final project; strategies for hypothesis generation	Form groups for final projects; select topic area; begin brainstorming ideas *For Next Time: Hypotheses / Proposals*
11/4	**DUE: Group Hypotheses (double attendance);** Meet with group and decide on research hypothesis; conduct literature search; formulate experimental design and materials	
11/6	**DUE: Project Proposals (double attendance);** must describe hypotheses; have sample experimental materials, and describe procedure	
11/11	**Veteran's Day Observance: No Class**	**Veteran's Day Observance: No Lab**
11/13	Groups meet with Dr. Armor for final approval of project; continue literature review; begin working on intro and methods sections; begin data collection	
11/13 to 11/20	Data collection (groups must be finished running participants by 11/20 to begin data entry); work on final paper (complete introduction and methods sections, reference list)	
11/20 to 11/25	Data analysis (groups must be finished analyzing data by 11/25); work on final paper (complete results and discussion sections, abstract, tables and/or figures); coordinate with group to prepare final poster presentations	
11/27	**Thanksgiving: No Class**	**Thanksgiving: No Lab**
12/2 & 12/4	Draft posters; complete draft of final paper	
12/9	**DUE:** Complete draft of poster (penultimate)	
12/11	**Poster Presentations (formal poster session)**	
12/16	**DUE: Final Paper (10:00am): Please Bring to SSE 2307K**	