Research Methods

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**Lecture:** TR 2-3:15, Chem-Phys 222 **Lab:** W 3-4:50, Whitehall 217

# Course goals:

*We’ve arranged a global civilization in which most crucial elements profoundly depend on science and technology. We have also arranged things so that almost no one understands science and technology.*

*--Carl Sagan*

The purpose of this course is to acquaint you with the methodological toolkit of psychological research. In a narrow sense, this will help you better understand and apply scientific principles when thinking about social psychological research. For example, many students take this course to learn about research methods in the hope of creating their own research in the future (e.g., graduate school). More broadly, however, this course is very important because it will give you a solid foundation to help you think critically about the world. How do we come to know what we know about the human mind? Which claims should we trust? Which should we treat more skeptically? How can we become more informed as consumers of social psychological research, and scientific information in general? In name, this is a course about research methods in social psychology psychology. It is my hope that the course can also serve the broader goal of helping you all develop and strengthen the critical thinking skills that you will be able to apply to many areas of your life.

We will discuss what a psychologist does and why: how psychologists decide on a research plan, how to choose a method, how to evaluate information and data, and then how to draw conclusions regarding why folks behave the way they do. Whether we realize it or not, we encounter and apply principles relevant to psychological research every day. The topics covered in this course will provide you with a toolkit that will aid in thinking critically about these principles and research results. Finally, this course will also give you all the chance for firsthand engagement with the research process, as you will all design, implement, and communicate the results of your own novel research.

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| Course Description: |
| Emphasis will be placed on learning and applying experimental and nonexperimental methods to social psychological issues. In the laboratory component, students will design, conduct, and write up their own social psychological study. Lecture/ discussion, three hours per week; laboratory, two hours per week. |
| Student Learning Outcomes: |
| After completing this course, the student will be able to: |
| 1. Locate and describe primary research articles 2. Critically evaluate popular accounts of scientific research 3. Describe, apply, and integrate the principles of the scientific method 4. Design and execute social psychological research 5. Effectively communicate the results of social psychological research |
| Required Materials: |
| There is no assigned textbook for this course. There will be occasional required readings posted on Blackboard. |
| Description of Course Activities and Assignments |
| This course contains both a lecture component and a lab component. During the lecture, you will learn about various aspects of social psychological research (e.g., how to manipulate variables, how to measure variables, how to design questionnaires). Along the way, I’ll try to give you both a broad overview of the concepts of research methods, as well as a cutting-edge view of methods and debates occurring today.  The lab component of the course will encompass a number of separate activities. However, all of these activities are broadly directed towards a single, overriding lab project in which you will design, run, and summarize the results of your own social psychological experiments.  In an effort to make the assessments in this class more reflective of the kinds of tasks that social psychological researchers actually need to do to be successful, this course will NOT follow a typical exam format. Researchers rarely, if ever, take exams. They are judged primarily on the strength of their ideas, and their effectiveness at communicating those ideas. As a result, the majority of the assignments in this course are communicative in nature. That is, they rely on writing and on other forms of presentation. There will not be a midterm exam. There will not be a final exam. To gauge understanding of lecture material, there will be a number of topically-focused (read: not cumulative) quizzes. In addition, there will be two short Critical Evaluation papers, two Lab Assignments, and a final paper. This course will have roughly the same amount of work as other courses. It just breaks that work up into small chunks, rather than relying on two or three giant assignments that require intense bursts of cramming and stress. |
| Course Assignments |
| The point breakdown for each assessment is as follows: |
| * 6 quizzes (worth 20% total. Only best 5 count) * 2 short Critical Evaluation papers (worth 10% each) * 1 Final Paper (worth 25%) * 2 Lab Assignments (worth 10% each) * NCUR research evaluation (5%) * Group Presentation (10%) |
| Summary Description of Course Assignments This course contains both lecture-based assignments and lab-based assignments. Each accounts for 50% of your final grade.  Lecture Assignments |
| **Quizzes:** Instead of relying on two or three giant, stressful exams to assess your learning, this course will have six brief quizzes. Each quiz will take only 15 minutes of time to complete, and each quiz will only focus on material covered since the previous quiz. The quizzes are NOT cumulative in nature. Instead, they will assess only what we have covered in class in the most recent week or two. In addition, only your top five scores will count towards your final grade. Every student gets to drop one quiz. This means that (unlike courses with a midterm and a final exam) one bad day cannot sink your boat. Q**uizzes will account for 20% of your total grade.** The quizzes are individually brief, but **do not take them for granted**. In a normal class, you’d spend a lot of time studying for a midterm and a final. The six quizzes combined should take about as much preparation as you’d normally allot to a midterm and a final exam, just broken into six chunks rather than two.  **Critical Evaluation (CE) papers:** This course teaches you about social psychology research methods. Beyond this, however, this course aims to equip you to more critically consume scientific information. The first Critical Evaluation paper is worth 10% and the second is worth 10%, so **Critical Evaluation papers will account for 20% of your total grade.**  **NCUR research evaluation:** This year, UK is hosting the National Conference on Undergraduate Research. In lieu of class on April 3, you will go check out some fantastic undergraduate research projects. You will then write a brief summary of 2 social psychology-relevant research projects.  Lab Assignments  Throughout the lab, you will design, run, analyze, and communicate the results of your own research. During lab, you will work with a teammate to design and run your own social psychological research. Although designing and conducting the experiment is a team project, all assessments will be based on individual assignments. A key component of the research process is communicating your ideas to your peers in the scientific community. Lab assessments are designed with this in mind. At the culmination of the course, you will present your own social psychological findings.  **Final Paper:** Research articles are the primary medium in which scientific findings are disseminated. Each student will prepare an APA format manuscript to report the results of their own lab-based research. Because the Final Paper is the most comprehensive and important assignment in the course, it will **be worth 25% of your final grade.** The body of the paper will be no more than 6 pages in length (more info on this later). The paper will be due at the start of the final examination period.  **Final Presentation:** Conference presentations are the secondary medium in which scientific findings are disseminated. Each lab group will give a 10-minute presentation on their research project. This will **be worth 10% of your final grade.**  **Lab Assignments (LA):** During the lab, there will be two short Lab Assignments. Think of these assignments as preparation for your final paper. In each assignment, you will basically turn in a section of an APA-format manuscript reporting your work. They are stepping-stones that will make the final paper much easier. Each assignment is worth 10%, so the assignments combined will **account for 20% of your final grade.**   * One of these lab assignments does require some light statistical calculations. The statistics in this course will not go further than some of the simple tests you learned about in PSY 216. You do not need any fancy statistical software (e.g., SPSS) to perform the calculations needed in this class. All statistical calculations can be performed in lab. All you need is a computer with internet access for your research team to perform the analyses. |
| Course Grading |
| 90 – 100% = A  80-89% = B  70-79% = C  60-69% = D  Below 60% = E |
| Final Exam Information |
| The final examination is scheduled for Thursday, May 8. Since this course does not have a final examination, this will be the official due date for the final paper. Papers not submitted by 5:00 on this date will be counted as late. |

# Tentative Lecture Schedule

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| Lecture Week | Dates | Topic | Assignments |
| 1 | 1-16 | Introduction to course | -- |
| 2 | 1-21  1-23 | Philosophy of science | -- |
| 3 | 1-28  1-30 | Parsimony, operationism  The nature of social psychology | -- |
| 4 | 2-4  2-6 | Ethics | Quiz 1: 2-4  Philosophy of Science stuff |
| 5 | 2-11  2-13 | Measurement  (No class 2-13) | Quiz 2: 2-11  Ethics |
| 6 | 2-18  2-20 | Types of measurements  Issues in measurement | -- |
| 7 | 2-25  2-27 | Correlation, causation, and correlational research | Quiz 3: 2-25  Measurement |
| 8 | 3-4  3-6 | Basic experimental design | LA 1: 3-5 |
| 9 | 3-11  3-13 | Choosing manipulations  Further issues in manipulation | CE 1: 3-12 |
| 10 | 3-18  3-20 | Spring Break (No class) |  |
| 11 | 3-25  3-27 | Complex Designs  No class (3-27) | Quiz 4: 3-25  Experimental Design |
| 12 | 4-1  4-3 | Complex Designs  NCUR | CE 2: 11-13 |
| 13 | 4-8  4-10 | Process  Validity | NCUR write-ups: 4-9 |
| 14 | 4-15  4-17 | Probability and chance  Statistical Inference | Quiz 5: 4-15 Complex  LA2: 4-16 |
| 15 | 4-22  4-24 | Statistical Inference  Generalizability |  |
| Dead Week | 4-29  5-1 | Presentations | Quiz 6: 4-29  Presentations |
| Finals Week | 5-8 |  | Final Paper: 5-8 |

# Tentative Lab Schedule

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| Lab Week | Activity |
| 1 | No Lab |
| 2 | Intro to lab. Form Groups. |
| 3 | The research process. Literature searches. |
| 4 | Brainstorming group research ideas. |
| 5 | Mock ethics board. |
| 6 | APA format. Introducing Introduction Sections. |
| 7 | Designing a questionnaire/measure |
| 8 | LA1 due. Brainstorm experimental design. |
| 9 | CE1 due. Refining and piloting the experimental design. |
| 10 | Spring Break |
| 11 | Collect Data |
| 12 | Analyze experimental data \*\*\*Location TBD\*\*\* CE2 due |
| 13 | Writing Methods and Results |
| 14 | LA 2 due. Format of final paper. |
| 15 | Troubleshooting papers |
| Dead Week | Generalizability debate. Troubleshooting. |