

Lab Information

PSYC 150-LAB: RESEARCH METHODS & DATA ANALYSIS

University of Nebraska-Lincoln

Overview

Psychology Laboratory 350 Lab Meetings 233/234 Burnett Hall Lab Research Methods & Data Analysis Office hours in 230 Burnett Hall

Lab details



Fall 2025



Burnett 230



1:30pm-12:30pm

Welcome!

The purpose of this laboratory is to reinforce the information presented in lecture and to give you a chance to experience and practice many of those procedures and techniques. While the timing and approach to topic coverage will not be perfectly matched between lecture and lab, the content of the two is very close. Also, topics and techniques covered in successive laboratory meetings are often interrelated and dependent upon what you were to learn from the previous laboratory.

The policies (attendance, late attendance, preparedness, assignment completion, etc.) here are designed to encourage you to be prepared to fully participate and learn as much as possible from each laboratory and to get credit for everything that you've learned.

Objectives & Strategies

In Psychology 350 you will learn about two important skill sets:

1. the ability to design, complete, interpret, and report empirical research to test hypotheses derived from Psychological theory or its application, and
2. the ability to critically evaluate research produced by others and to propose changes in the design, analysis, or interpretation of it.

Justification

You might not be planning a career as a research psychologist, and many professional psychologists do not themselves contribute to the research literature. However, all psychologists must be competent “consumers” of the psychological research literature in their area of expertise, whether it is clinical, counseling, consulting, educational, law-psych, I/O, human resources, human factors, or some other area of psychology.

Also, most jobs held by professional psychologists require a substantial amount of data analytic skill and report writing ability, whether it is to document decision making, obtain funding, to provide evidence for the efficacy of service delivery, or to contribute to the professional literature. In addition, the ability to produce competent, theoretically relevant empirical research is usually the “ticket for admission” to a career as a professional psychologist.

Completion and presentation of your own independent research (say, an Honors Thesis or presentation/poster at a student research conference) is often helpful evidence that you can “do research” when applying to graduate school. Most Ph.D. programs require at least two empirical research projects—the Master’s thesis and the Ph.D. dissertation.

Classroom Climate

We have to be able to talk forthrightly about the topics of this class and to explore the history, current, and likely future approaches of our trade. Some obvious sensitive topics are the variables & labels we use to define our target populations and describe who is in our samples. In particular we have to be sure we are aware of the standards and preferences in our own research/application communities, as well as differences across communities.

Our class will welcome students from multiple colleges and programs, not all of whom use either the same “descriptive categories” nor the same “labels” for those categories. And there will be several other sensitive parts (e.g., researcher motivations & bias). So, we must find, as a group, a balance between “comfort & coverage”. Be sure to let me know when/if we’re

bumping up against one or the other. Showing empathy and compassion for each other can help. Listen to one another, be aware of other people's needs, and cut each other slack.

Everyone who attends this class is entitled to feel welcome and to feel safe from intimidation, insult, bullying, harassment, or discrimination of ANY sort and safe from unwelcome sexual contact or advances. We will consistently treat each other with respect and support. Both agreement and disagreement drive learning, understanding and successful application, and both are best done with mutual respect, patience and occasionally grace.

Emphasis

With respect to design issues, we will pay special attention to the "rules of evidence" for the quantitative analysis of cause-and-effect relationships and the important differences between experimental and nonexperimental designs. With respect to data analytic issues, we will particularly pay attention the family of ordinary least-squares techniques that includes analysis of variance and linear regression. We will emphasize the pragmatics of hypothesis testing, data analysis and the communication of findings, at a level that is more like "driver's education" and less like "mechanical engineering." As data collectors and data analysts, we have a particular obligation to avoid treating the data and results from our samples as "representing everybody".

In particular, we need to avoid generalizing results from majority-dominated samples as if they were "universal" or "sufficient". We must always ask, "From whom were the data sampled." In fact, we will expand the usual meaning of "sampling" to include not only "who?" but also "where, when, and how?"

General Goals of the Laboratory

By the completion of this course students should be able to:

- Find existing literature on a topic in psychology, choose relevant articles or chapters, use that literature to write a review of that topic as a basis to propose novel research with specific hypotheses
- Identify and evaluate the components of a research report or a summary of one, including the purpose and research hypotheses, the sampling and subject assignment procedures, manipulation and measurement procedures, and the statistical analyses & interpretations of those analyses
- Given a research question and/or a set of data, to select, perform, and communicate the results of the appropriate statistical analysis (including the statistical null hypothesis) in written or oral form

- Employ a computer statistical package to perform analyze of data, including a knowledge of the limitations of the package and how and when to augment that package with hand-calculated analyses
- Communicate the purpose, hypotheses, procedures, data, analysis results and interpretations of a research project using the conventional written format and style (e.g., APA-style papers and posters)
- Become familiar with the internet and other forms of “instructional technology” that are likely to be used during other courses during your education or in your research

How Psyc350 fits into ACE Outcome(s)

SLO10: Generate a creative or scholarly product that requires broad knowledge, appropriate technical proficiency, information collection, synthesis, interpretation, presentation, and reflection. Research Paper: Students will submit a major research paper in which they introduce the topic by connecting their research to reports that have been published in the scientific literature, describe the research methods, report the results including appropriate statistical analyses, and discuss the implications of the findings in light of other research on that topic.

Reinforcements

Writing

Writing will be reinforced by means of several reports submitted as required projects in the laboratory, and by the final research paper.

Mathematics and Statistics

Mathematics and Statistics will be reinforced throughout the semester as students learn to identify appropriate statistical tests to be used in specific research situations. Students will learn some of the mathematical groundwork for statistical tests, but more importantly they will learn the pros and cons of various tests and whether their assumptions are met in certain applications. Students will learn to compute statistical tests using common statistical software packages, and how to interpret the results.

Critical Thinking

Critical thinking will be reinforced by reading research reports to identify the authors' research designs, evaluate the validity of their measurements, and critique the appropriateness of their conclusions in light of the data.

Important Details/Policies:

This laboratory requires a lot of work, and getting behind usually leads to getting further behind, and further, etc. So, work hard, ask questions, and keep up—it is the best way to succeed in this laboratory!

i Note

- You cannot receive a passing grade in the class unless you complete all of the take-home laboratory assignments
- A “C” is the minimum grade for this course to count toward a Psychology major (a “C-” will not count and the course will have to be retaken).
- Consideration of “Withdraw” and “Incomplete” grades will be according to the guidelines provided in the Undergraduate Bulletin and the Schedule of Classes.

Laboratory Schedule, Topics, and Assignments Responsibility Policy

The topics, materials, assignments, etc. for each laboratory meeting are given in your laboratory (assignment links) and lecture (materials) Canvas Courses . You are responsible for all material and assignments for each laboratory meeting, including all changes that are mentioned in lecture, in laboratory or emailed to you.

Laboratory Attendance Policy

You must complete the laboratory section to receive credit for Psyc350. You are required to attend to all portions of each of the meetings of the specific laboratory section for which you enrolled.

You may not switch laboratory sections—you are to attend the section in which you enrolled.

Inclement Weather Policy

The UNL Inclement Weather policy can be found at: <https://bf.unl.edu/policies/inclement-weather>. If in-person classes are canceled, you will be notified of the instructional continuity plan for this class by Canvas notification and plans for proceeding with the laboratory will be explained at that time.

Laboratory Late Attendance Policy

Part of each laboratory meeting will likely involve the TA lecturing about and/or demonstrating topics and techniques. Many laboratory meetings involve students working together on in-laboratory exercises and assignments. You are expected to be on time for all laboratory meetings. If you have to be late, please contact your TA ahead of time.

Laboratory Materials Policy

The instructional and assignment materials for each laboratory meeting are available in your Canvas Lab Course. Having them with you is important for your participation in the laboratory meeting. You are expected to have all the materials for that laboratory meeting with you at the beginning of each laboratory meeting, either as paper copies or, more likely, as digital copies that you can access.

In-Laboratory & Take-Home Laboratory Assignment Policy & Late Penalties

You should assume that all laboratory assignments are due by the laboratory meeting after they are assigned. You are expected to complete all the portions of each assignment and to submit the completed assignment electronically by the deadline set by the TA. If you are not sure when an assignment is due, ask your TA. Assignments turned in before the submission deadline will not be graded upon submission. Grading will not be begun before the submission date & time for each assignment.

An assignment that is submitted electronically on the date that it is due but after the time deadline set by the TA, will lose up to 10% of the value of the assignment and will lose an additional 10% for each weekday it is late. For example, consider an assignment due to be submitted Wednesday at 11:00am:

1. the assignment submitted before 11:00 AM is on-time
2. an assignment submitted after 11:00 AM is late and would lose 10%, 3. an assignment submitted on Thursday would lose 20% and
3. an assignment submitted on Monday would lose 40% (the late penalty is only applied to weekdays).

In-Laboratory & Take-Home Laboratory Assignment Grading Policy –Incomplete Assignments-

Only completed assignments will be graded. If you leave parts of an assignment blank or incomplete, your TA will not grade any of the assignment and will return the assignment to you with a grade of “0”. You should complete the assignment and submit it electronically. Late penalties apply for assignments returned because they were incomplete.

Feedback on Graded In-Laboratory & Take-Home Laboratory Assignments

Feedback on graded assignments will primarily identify the errors or mistakes that you made. The correct answers will not be provided by the TA. It is expected that you will consult the related handouts and identify the correct answer and rewrite your assignment. If you can't figure things out from the related handouts you should email your TA or meet with your TA during their office hours for specific help. Your TA won't give you the correct answer then either, but will direct you to the related handout and help you figure out what is the correct answer. The re-write option is provided as an opportunity for you learn and apply material that you either didn't learn the first time or didn't apply correctly. The goal is for you to use the information from the class meetings, laboratory meetings and various handouts to complete the exercise better and to get a higher grade. The important part is that you do the learning and the work, not the TA. The TA is there to facilitate your use and understanding of the material, but you have to do the learning and the work.

Re-writes of Graded In-Laboratory & Take-Home Laboratory Assignments

Any assignment may be re-written and the higher score will count toward your laboratory grade. Re-dos of take-home assignments will be due the laboratory meeting after the graded assignment is returned and will not be accepted after this time.

Two important things:

- The late penalty for re-writes is the same as for submission of the original assignment. That is, a re-write that is submitted electronically on the date that it is due but after the time deadline set by the TA, will lose 10% of the value of the assignment and will lose an additional 10% for each weekday it is late
- Points lost because of late submission cannot be "recovered" by re-writing the assignment. Say you submitted an assignment the day after it is due, and the assignment was scored 80%. You would lose 20% for the late submission and would have a grade of 60% for the assignment. If you re-write the assignment and submit the re-write on time, the highest grade you could receive is 80% (100% for a perfect paper -20% for the original late submission).

You should do the very best you can on each assignment and submit the assignment on time. Use the re-write option only to "clean up" a few things that you misunderstood or misapplied. You should not adopt the strategy of doing a sub-par job on a take-home assignment and expect that you'll "make up" the points on the re-write. There are several reasons for this. First, remember that incomplete assignments will be returned to you to complete before they are graded, and will usually end up being submitted late -costing you points. Second -the TAs will not give you the answers to the parts you got wrong -neither when grading the assignment nor if you email them or come meet with them during their office hours. Third, time will have passed between when you did the assignment and when you will get a chance to re-write it -making it harder to do a better job on the re-write than you did the first time. There will be additional new work assigned during the time you have to re-write earlier assignments.

Laboratory Assignments & Laboratory Grade Policy

You will notice that there are many lab assignments, and so, no one assignment contributes very much to your overall Psyc350 grade. During particularly busy times of the semester you might be tempted to “ditch” an assignment or two and “take the 0”. However, I consider each Laboratory assignment to be important, and so... **You can not receive a passing grade in this class unless you complete all of the take-home laboratory assignments.**

Academic Honesty, Plagiarism, and “Working Together”

You are expected to provide appropriate citations and references for all information and ideas taken from others’ work. The first occasion of plagiarism, or any other form of cheating, by a student will result in an opportunity to re-write the assignment for credit. The second occasion of plagiarism or cheating by a student will result in a failing grade for that assignment, referral of the matter to the office of Student Life for possible action by the Judicial Board as provided for in the UNL Student Handbook. The policy for the laboratory is somewhat complicated by the nature of many laboratory assignments. You are strongly encouraged to work together on some parts of the laboratory homework assignments! Most of these assignments have two differentiable parts: a “working” part and a “writing” part. The working parts are usually some type of exercise or calculation for which there is a single correct answer. Naturally, those who work together will be expected to have the same answer –everybody who does the work correctly should have the same answer! Hopefully, the work will be somewhat independent, so that errors can be caught within the group. The writing parts are where you must be careful. For all writing parts of any homework and especially for the papers, you are expected to do your own writing for every part of every homework you turn in. Different students are expected to produce different writing.

Individual Needs Accommodation

Students with disabilities are encouraged to contact the instructor for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.

One Last Thing

All of the laboratory sections and TAs are supervised by Dr. Manda Williamson. You are encouraged to contact her at any time during or after the semester with any suggestions or concerns about the laboratory materials, requirements, or any issues related to your laboratory classmates or TAs. You can contact her via email at mwilliamson3@unl.edu

Grading

You can find descriptions for all the assignments on this site or on canvas. But the breakdown is as follows:

Assignment	Points	Percent
Personal Information Survey	50	5.0%
Social Annotations	120	12.0%
Learning Checks	120	12.0%
Unit Activities	240	24.0%
Exam 1	115	11.5%
Exam 2	115	11.5%
Group Poster Project	240	24.0%
Total	1000	—

Grade Range

Grade	Range	Grade	Range
A	93–100%	C	73–76%
A–	90–92%	C–	70–72%
B+	87–89%	D+	67–69%
B	83–86%	D	63–66%
B–	80–82%	D–	60–62%
C+	77–79%	F	< 60%