

PSY 220A: Research Design and Statistics

Fall 2025

Class (SCC 245): TR 8:15-9:45am

Lab (SCC 245): T 10:00-11:45am

Instructor:

Jeff Coon

Office: Science Center 151

Email: coon@hanover.edu

Office Hours: MF 1:00-2:30pm, T 1:00-2:00pm, W 12:00-1:00pm [Book Time](#)

Course Description:

Consideration of the basic design of psychological research (experimental, correlational, survey, case study, etc.) and the analysis, interpretation and presentation of data. Prerequisites: 111 and MAT 217. Should be completed before junior year. Satisfies the QL ACE. Fee Charged.

Course Overview and Format:

In this course, you will develop the skills required to answer psychological questions. These are among the most fundamental and marketable skills for you to acquire as a psychology major. In class, we will be examining how to conduct ethical studies, how to design surveys and experiments, how to use statistics to analyze the results, and how to communicate findings.

This course also has a lab component in which we will be applying the research design and statistical concepts that we cover in class. These labs will allow you to make incremental progress towards completing your project and to receive feedback as you go.

By the end of this course, you should be able to...

- conduct a basic literature review.
- create and evaluate an online survey.
- create and evaluate basic experimental design.
- apply and interpret statistical analyses of surveys and experiments.
- present research findings, both as a paper and as a poster.

Course Materials:

1. Laptop with JASP installed (<https://jasp-stats.org/download/>); bring to class
2. Google account (<https://www.google.com/account/about/>) for Forms (<https://www.google.com/forms/about/>) and Sheets (<https://www.google.com/sheets/about/>)
3. Word processing software with .pdf, .doc, or .docx files (no Apple formats or .odf)
4. Access to Canvas (<https://hanover.instructure.com>) and a Hanover email account. Be sure to check both regularly for course news and updates.

Course Requirements: *Check rubric files on Canvas for more details*

In-class assignments - Graded on adequate completion (1 pt. each). These only make sense in the context of that day's activity, so I cannot accept them late. Your overall grade is calculated as 102/100 points, with the extra points providing a cushion here.

Practice Quizzes - Graded on adequate completion (1 pt. each for 7 total). Can be accepted late until the day of the relevant exam for ½ credit.

Article Discussion - Work in groups of 3 to lead a 25 min discussion of a peer-reviewed article.

Lab Assignments - Graded on adequate completion. These assignments are designed to break the final project down into bite-sized chunks and to give you feedback on your progress. **IT IS CRUCIAL TO STAY ON TOP OF INTERMEDIATE DUE DATES.** The project cannot be completed at the last minute. If working in pairs, it is best to write these assignments individually to make sure that you do not accidentally plagiarize each other in your report.

Project - You will design, run, and analyze your own psychological study and present your findings in (1) a written report and (2) a scientific poster. You may complete the project individually or in pairs. If working in pairs, you may submit a joint poster, **BUT THE REPORT SHOULD BE YOUR OWN WORK.**

Exams - There will be a traditional in-person midterm on Tue 10/14, covering how to design and evaluate a study. The midterm will be closed-note and a mixture of multiple choice and open-ended questions. The final exam will cover how to analyze results and will require you to use JASP. The exam will be open-note, remote, and asynchronous but must be completed on the assigned day, **which is determined by the registrar's office.** Do not commit to travel plans until you know when the final exam will be.

Evaluation and Grading:

Project: 50%

Report: 20%
Poster: 15%
Lab assignments: 15%
 Search terms: 1%
 Annotated bibliography: 2%
 Methods assignment: 2%
 Survey draft: 2%
 Methods draft: 2%
 Intro draft: 2%
 IRB: 2%
 Full rough draft: 2%

Exam: 25%

Midterm: 15%
Final: 10%

Other: 27%

Article Discussion: 10%
In-class assignments & practice quizzes: 17% (1 pt each)

Total: 102/100

Grade	Points
A	93+
A-	90-92.9
B+	87-89.9
B	83-86.9
B-	80-82.9
C+	77-79.9
C	73-76.9
C-	70-72.9
D+	67-69.9
D	63-66.9
D-	60-62.9
F	0-59.9

Grades rounded to 1st decimal
(92.95 → 93; 92.94 → 92.9)

MOST ASSIGNMENTS CANNOT BE ACCEPTED LATE IN THIS COURSE

The due dates are fundamental to the assignments. The initial survey helps me tailor the course to your needs, so I need your responses at the beginning of the course. The lab assignments

break the project into incremental steps to ensure that you complete it to your satisfaction and without unnecessary stress. Discussions must be on certain days so that they fit the course schedule. And the poster for your final project must be submitted in time to get printed.

The two exceptions are the Practice Quizzes and Project Report. The Practice Quizzes are still worth completing up until the day of the relevant exam (and will still receive ½ credit if completed before then). I can accept the Project Report until 12/12, but there is a late penalty.

Course Schedule:

	In-class Topic	Due Dates	Discussion
8/26 Lab 8/28	Course overview; scientific method Select topic; brainstorm ideas IMRaD format	Survey (8/26@11:59pm)	
9/2 Lab 9/4	Operationalizing a construct Finding and reading articles Correlation vs. causation	Search Terms WS (9/4@11:59pm)	
9/9 Lab 9/11	Experimental design Annotated Bibliography Factorial experiments	Annotated bib. (9/12@11:59pm)	
9/16 Lab 9/18	Patterns & randomness Methods plan Surveys	Practice quiz 1 Methods assignment (9/19@11:59pm)	
9/23 Lab 9/25	Reliability and validity Survey Methods workshop; Sampling	Methods wkshp in class 9/25 Survey draft (9/26@11:59pm)	
9/30 Lab 10/2	Qualitative & observational methods Writing a Methods section Ethics; Writing Intro	Practice quiz 2 (as homework) Methods draft (10/3@11:59pm) Intro draft (10/5@11:59pm)	
10/7 Lab 10/9	FALL BREAK FALL BREAK Review	Practice quiz 3	
10/14 Lab 10/16	Midterm Exam IRB; CITI training Describing & visualizing data	First IRB (10/16@11:59pm)	
10/21 Lab 10/23	Correlations pt. 1 Collect data Correlations pt. 2	Second IRB (10/23@11:59pm)	Discussion 1 (10/23)
10/28 Lab 10/30	Simple regression Collect Data T-tests pt. 1	Practice Quiz 4	Discussion 2 (10/30)

11/4 Lab 11/6	T-tests pt. 2 Writing a Results section Ethically reporting data	Practice Quiz 5	Discussion 3 (11/4) Discussion 4 (11/6)
11/11 Lab 11/13	ANOVA Writing a Discussion section Main Effects and Interactions	Practice quiz 6 Full rough draft (11/16@11:59pm)	Discussion 5 (11/11) Discussion 6 (11/13)
11/18 Lab 11/20	Multiple regression Creating poster Work on poster	Practice quiz 7 Final Poster (11/20@11:59pm)	
11/25 Lab 11/27	THANKSGIVING BREAK THANKSGIVING BREAK THANKSGIVING BREAK		
12/2 Lab 12/4	Finish writing Elevator pitches; poster session Review	<i>If you want your report graded before the final exam, submit it by 12/3@11:59pm</i>	
	Final Exam: Paper due: 12/7@11:59pm		

Accessibility Services for Students with Disabilities:

Hanover College offers accessibility services to students with documented physical, visual, hearing, learning, or psychiatric disabilities. Any Hanover student is eligible for special services or accommodations if: 1) The student self-identifies that he or she has a disability and needs accommodation; 2) The student provides appropriate and verifiable documentation of the disability; and 3) The student provides notification in a timely fashion. For accessibility services, [Email Accessibility Services](#) or call 812-866-6836. The Accessibility Services (AS) office is in the Gladish Center for Teaching and Learning on the first floor of Duggan Library.

Academic Integrity/Honesty:

In the event of academic dishonesty, students will receive a 0 for the assignment at minimum. All instances of academic dishonesty are reported to the chair of the Student Academic Assistance Committee, and repeated instances of academic dishonesty will subject a student to additional penalties up to and including dismissal from the College as outlined in the College Catalog.

As stated in the Hanover College Principles, students, faculty, staff, and trustees of Hanover College seek to promote academic, personal, and moral growth within a safe, challenging, and responsive community. This includes a commitment to academic integrity. Violations of academic integrity have a broad impact on the College and will result in College review and action.

Academic dishonesty includes any action with the intent to deceive in order to obtain an unfair advantage, as well as any act of aiding and abetting academic dishonesty. The Hanover College statement on academic dishonesty may be found in the Catalog and in the Student Handbook.

Artificial Intelligence: Tools such as ChatGPT can be quite helpful and are not going away. However, those tools are best used by someone who can evaluate and critique the output. As is commonly said, “you won’t lose your job to AI, you’ll lose your job to someone who uses it better than you.” The primary goal of this class is for you to understand key concepts in experimental psychology. Anything you submit in this class needs to reflect your own thinking. If AI tools are helpful in developing and refining your thinking, that is an acceptable usage. If you are relying on AI to do the thinking for you (e.g., writing an essay), that is counterproductive in the long term and defeats the purpose of the class. As such, it will be considered academic dishonesty. If you have questions about appropriate use of AI tools, please come speak with me.

Statement on Self-Care:

Your success in this course and throughout your college career depends heavily on your personal health and wellbeing. Stress is a common part of the college experience, and it often can be compounded by unexpected life changes outside the classroom. Your other professors and I strongly encourage you to take care of yourself throughout the term before the demands of midterms and finals reach their peak. Before circumstances and conditions become overwhelming, please don’t hesitate to speak with me about any difficulty you may be having that may affect your academic performance. Please know as well that there are several support services on campus available to assist you, as needed. You can make appointments with Health Services by calling x-6102. Appointments for Counseling Services can be made online at any time through [MyHanover](#).

Health Services

Christy Ownbey, APRN, CPNP-PC, Director of Health Services
812-866-7082 or ownbey@hanover.edu

Gladish Center for Teaching and Learning

Katy Lowe Schneider, Associate Provost for Student Outcomes
812-866-7215 or lowe@hanover.edu

Katie Wood, Director of Gladish Center for Teaching and Learning
812-866-6847 or wood@hanover.edu

Counseling Services

Sara Crafton, Director of Counseling Services
812-866-7074 or crafton@hanover.edu

Campus Food Pantry

Rev. Catherine Knott, Ph.D
812-866-7087 or knott@hanover.edu

Ball Family Chaplain

Rev. Catherine Knott, Ph.D
812-866-7087 or knott@hanover.edu

Levett Career Center

Jenny Moss, Executive Director
812-866-7397 or mossj@hanover.edu

Nondiscrimination:

Hanover College is committed to providing equal access to its educational programs, activities, and facilities to all otherwise qualified students without discrimination on the basis of race, national origin, color, creed, religion, sex, age, disability, veteran status, sexual orientation, gender identity, or any other category protected by applicable state or federal law. An Equal Opportunity employer, the College also affirms its commitment to nondiscrimination in its employment policies and practices. In compliance with Title IX (20 U.S.C Sec. 1681 et seq.) Hanover College prohibits sex discrimination, including sexual harassment. For student related disability discrimination concerns, contact the Gladish Center for Teaching and Learning at 812-866-6840. For other discrimination complaints, including any arising under Title IX, contact the Title IX Coordinator at 812-866-6740 or the Deputy Title IX Coordinator at 812-866-7097.