

Research Methods in Cognitive Psychology (85310)
Fall 2018
Tuesdays and Thursdays. 12:00-1:20 pm. Baker Hall 336A.

INSTRUCTOR:

Dr. Catarina Vales

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Office hours: Tue, 11am-12pm (or by appointment)

Course Description & Goals

Making sense of how and why people feel, think, and act the way they do is something we all do every day. But how do we know if our impressions are correct? In this course, we will practice how to gain unbiased knowledge about human behavior and cognition. This course will provide you with hands-on experience developing questions, constructing solid research designs to answer those questions, and communicating your findings. This will help you learn how to be a *producer* and a *consumer* of psychological science.

We will conduct studies and collect data to answer empirical questions, and you will convey your findings through scientific reports. Writing good scientific reports requires lots (really, lots!) of practice, which means that this course will include a considerable writing component. Fear not – we are in this together and will help each other improve!

You will develop many skills in this course. Your efforts will help you learn to:

- ✓ Use basic principles of scientific research, measurement, and experimental design
- ✓ Master best practices for scientific transparency and reproducibility
- ✓ Avoid ethical difficulties in research
- ✓ Communicate research findings effectively, both orally and in writing
- ✓ Evaluate others' research critically and constructively

Instruction Philosophy

You come to this course with more skills than you may realize. You have learned about some psychological phenomena, you have tackled statistics, and you have years of experience noticing science news headlines. I want to help you develop the ability to understand those headline, and to make your own research headlines.

I strongly believe that we all benefit from each other's success. Science is a group endeavor, and we all gain from helping each other. Throughout the semester, there will be in-class time dedicated to working on your projects and writing assignments, and you will be encouraged to ask each other questions and to give each other feedback.

I enjoy working hard to teach students who are working hard to learn. I promise to try to make this class engaging, and to adapt to your feedback. I expect you to devote genuine intellectual energy to the material, complete the assignments, help each other improve, and asks lots of questions.

Course Materials

Textbook: Morling (2018). *Research Methods in Psychology* (3rd edition). W.W. Norton.

Canvas: Research articles, assignments, important announcements, grades, and general course information will be posted on Canvas. It is your responsibility to check the platform regularly for updates.

Assignments & Grading

In this class, you will replicate and extend a published experimental result, chosen from a list of published papers provided by the instructor. You will work in teams (likely, of two students; subject to change based on class enrollment) to design, collect, and analyze the data of this project. This project is the backbone of most class assignments, so you will be referring to and thinking about your project often – like naming a child or a pet, you may want to pick a name for your project that you will love (or at the very least, not hate).

Project proposal (group): Your team will submit a short, 1-page research proposal (including hypothesis and study design) before you start implementing and collecting data. This is due by 12pm on Sept 27, 2018 (Canvas submission).

Scientific writing assignments (individual): You will complete 4 writing assignments during the semester. The goal of these assignments is to practice how to present and discuss empirical evidence in written form. Each assignment will focus on different sections of a journal article, with the last assignment including all sections of the paper. You will write about your team's project, but all work for these writing assignments should be individual (Canvas submission; see the schedule for deadlines).

Presentations (group): You will complete 2 group presentations. The goal of these is to practice how to present and discuss empirical evidence in an oral format. For the first presentation, you will present your research proposal to the rest of the class; there will be some time for questions and feedback. At the end of the semester, you will present your research project in a poster format to the Psychology Department community (including faculty, post-docs, and graduate students). More details about these will be given in class (see the schedule for dates).

Poster draft (group): Your team will submit a draft of your poster before you print it. This is due by 12pm on Nov 29, 2018 (Canvas submission).

Quizzes (individual): We will have 3 quizzes during the semester (see the schedule for dates; first 15 minutes of class). These quizzes are designed to help you use knowledge throughout the course. Quizzes will cover material presented in class and in the readings. Your best strategy to prepare for the quizzes is to come to class and do the readings. Students may drop one quiz grade, no questions asked. This could be because you missed a quiz day (and so you received a 0 score) or it could be the lowest quiz grade of your 3 quizzes. Because of this generous policy, make-up quizzes will only be offered in extraordinary circumstances with documented proof of medical or family emergency. If you happen to miss a quiz day, you will drop that quiz.

Final letter grades will be weighted like this:

Project proposal: 4%

Scientific writing assignments: 60% (first three=10% each; final paper=30%)

Presentations: 18% (in-class=3%; poster=15%)

Poster draft: 3%

Quizzes: 15% (each quiz=5%)

grade	percent
A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	< 69%

NOTE: Grade calculations displayed in Canvas may not be accurate for various reasons. You should not rely on Canvas's grade summaries to display accurate information about course standing.

General Information

Academic honesty

The short version: Don't cheat. Don't plagiarize. If you are unsure, please ask me.

Instances of academic dishonesty will not be tolerated and will result in an F grade for the class. Further information can be found in the following website: <https://www.cmu.edu/policies/student-and-student-life/academic-integrity.html>

Disability accommodations

This class will follow CMU policies for students with documented disabilities. If you have a disability and have an accommodations letter from the Disability Resources office, please discuss your accommodations and needs with me within the first two weeks so that I can provide appropriate accommodations. If you suspect that you may have a disability and would benefit from accommodations but are not yet registered with the Office of Disability Resources, I encourage you to contact them at access@andrew.cmu.edu as soon as possible.

Disclaimer

This syllabus is an outline of the course and its policies. Although I do not expect it to happen, the syllabus may be changed for reasonable purposes during the semester at the instructor's discretion. You will be notified in class and/or via email if any changes are made to this syllabus and an updated syllabus will be provided on Canvas.

FAQ

What if I miss a quiz?

With the exception of extreme or unforeseen circumstances, contacting the instructor on the day of (or even worse, after) the quiz will be considered an unexcused absence and will result in a 0 on the quiz. If you have a scheduling conflict due to a university-sanctioned activity (e.g., religious observance) and cannot take a quiz at its appointed date and time, you must tell the instructor by the end of the first week of classes. Your best strategy is to take quizzes on their scheduled date/time.

What if I turn in an assignment late?

If you submit an assignment after the due date/time, your grade on the assignment will be reduced by 50%. This is true whether you submit your assignment 1, 2, 3, 4, or 5 days late. After 5 days, late work will no longer be accepted without a documented medical/family emergency. Your best strategy is to submit assignments on time.

Do you grade on a curve? Offer extra credit?

No, I do not grade on a curve. No, I do not offer extra credit. Your best strategy is to focus your energy on doing your best on all of your work.

Do you take attendance?

No, I do not take attendance. I expect you to make responsible decisions about managing your time. This class is designed with the goal of helping you understand the material and master scientific research skills. Your best strategy is to show up and reap the benefits.

Course Schedule

Day	Date		Topic	Readings	Deadlines/Quizzes
Tues	28-Aug	design & create experiment	intros. course overview.	Frank & Saxe, 2012; chapter 1; chapter 2	
Thur	30-Aug		using library databases & reading papers; interrogation tools	chapter 2; chapter 3	
Tues	4-Sep		interrogation tools	chapter 3	
Thur	6-Sep		ethics in research; replicability & open science	chapter 4; Simmons et al., 2011	<u>quiz 1</u>
Tues	11-Sep		good measurement; sample size/power; exclusions.	chapter 5; Cohen, 1992	<i>decision about which paper to replicate</i>
Thur	13-Sep		intro to experiments	chapter 10	<u>quiz 2</u>
Tues	18-Sep		confounding and obscuring variables	chapter 11	
Thur	20-Sep		interactions	chapter 12	
Tues	25-Sep		in-class individual meetings about projects		<u>quiz 3</u>
Thur	27-Sep		project class presentation		project proposal (due by 12pm)
Tues	2-Oct		implement your experiment		
Thur	4-Oct		implement your experiment		
Tues	9-Oct	analyze & write	troubleshooting and quality assurance		<i>ready to start data collection</i>
Thur	11-Oct		the anatomy of a paper. how to write a methods section.	pp. 505-539; Clark, 1999	
Tues	16-Oct		in-class writing & peer-review (methods)		
Thur	18-Oct		how to write an introduction. in- text citations.		methods (due by 12pm)
Tues	23-Oct		in-class writing & peer-review (intro)		
Thur	25-Oct		data analyses	pp. 457-504	
Tues	30-Oct		data analyses		introduction (due by 12pm)
Thur	1-Nov		data analyses		<i>finish data collection</i>
Tues	6-Nov		how to write results + discussion section.		
Thur	8-Nov		in-class writing & peer-review (results/discussion)		
Tues	13-Nov		in-class writing & peer-review (results/discussion)		

Thur	15-Nov	present your findings	how to make a poster	results & discussion (due by 5pm)
Tues	20-Nov		Thanksgiving week (no class)	
Thur	22-Nov			
Tues	27-Nov		in-class poster prep	
Thur	29-Nov		poster practice	poster draft (due by 12pm)
Tues	4-Dec		poster practice	<i>send poster to print by 3pm</i>
Thur	6-Dec		POSTER SESSION	between 4:30 and 6pm

FINAL PAPER: due on Wednesday, December 12 2018 by 5pm.