

RESEARCH METHODS IN PSYCHOLOGY

PSY 395 – Summer 2023

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I. Course Overview

Research methods are foundational to the study of psychology. The scientific method is what allows us to ask and answer questions about how the mind works, why humans behave the way they do, and how we can best structure society and the workplace to support human flourishing. Some students believe that studying research methods is boring and difficult. This needn't be the case, and this course is designed to be very hands-on, so that students can learn about research by doing research. Students in this course will learn how psychologists come to know the things they know. They will learn how to tell the difference between good and bad research designs. They will learn how to report on the results of research using APA style. Most important, this course will lay the groundwork for future study and research in psychology.

Through successful completion of this course, students should:

- Understand the fundamentals of scientific research
- Recognize the characteristics of published research (e.g., experiments vs. non-experiments)
- Describe the details of and summarize the essence of research articles
- Be able to critique their own and others' research for strengths, weaknesses, and opportunities for better research practices
- Have an understanding of basic statistical thinking and how to choose and use statistical tests as part of research
- Understand how to generate hypotheses as a part of scientific process
- Be able to design empirical studies to test hypotheses using an understanding of the tools psychological science, and consistent with the standards of psychological science
- Understand the fundamentals of APA style as applied to the reporting of research
- Be able to produce a full research paper in APA style, writing clearly in a scientific manner
- Become more comfortable presenting results of their work
- Become familiar with statistical software through hands-on use in data processing and analysis

II. About Your Instructor

- A. Contacting me.** The best way to contact me is via e-mail. I typically check e-mail throughout the day, but only during normal business hours (9 am – 5 pm). If you send me an email in the evening, or on the weekend, you should not expect to get a response until at least the next business day.
- B. Office hours.** Office hours are listed above, but I am available to meet with you during other times, if you make an appointment with me by e-mail.

III. Required Reading

Required Text: *Research Methods in Psychology, 4th edition*
RAJIV S. JHANGIANI; I-CHANT A. CHIANG; CARRIE CUTTLER;
AND DANA C. LEIGHTON. KWANTLEN POLYTECHNIC UNIVERSITY
SURREY, B.C.

You can download (for free) or buy a print copy here:

<https://kpu.pressbooks.pub/psychmethods4e/>

Required Readings: Additional required readings will be posted on the course website.

Recommended:

1. *A Short Guide to Writing about Psychology, 3rd Edition* (2011) by Dana S. Dunn, ISBN: 978-0-205-75281-2
2. *Publication Manual of the American Psychological Association, 6th Edition*

IV. Course Objectives

This course is designed to help students develop their skills in the following areas:

- A. Psychological research, from start to finish.** In addition to those skills mentioned in the course overview (above), students will learn how to think like a psychological scientist. They will learn how to recognize a good research design from a poor one. They will learn how to select valid and reliable instruments for their research. They will learn how to recognize confounds in research design. In short, they will learn everything they need to know to ask and answer questions using psychological research methods.
- B. Analytic writing.** Students will develop their capability to present an argument persuasively in written language. Research papers, like many other forms of writing, seek to pose a question and answer it. That is, they contain a central argument supported by evidence. Furthermore, they tell a story – taking the reader on a journey along a line of reasoning. In this course, students will begin to learn how to craft such arguments persuasively.
- C. Quantitative reasoning.** Students will review a basic grounding in statistics as used in psychological research. This course focuses on measures of central tendency, variability, correlation, and simple null hypothesis significance testing (*t*-test, ANOVA). Students will apply this knowledge to the interpretation of statistical reporting in the psychological research literature.
- D. Graphical displays and interpretation.** Students will learn to interpret graphical displays of data, as well as produce graphical displays and figures for their lab reports.
- E. Oral presentation and civil discourse.** Oral communication is a critical skill for success in your life at MSU and beyond. Students in this course will work to improve their formal presentation skills, as well as hone their ability to speak candidly and civilly when discussing psychological research. Upon completing this course, students should be able to verbally explain the design of a research study, emphasizing what makes the study important and interesting as well as elaborating on strengths and weaknesses in the study's design.

It is the instructor's goal that students become proficient in each of these key areas. Evaluations are designed to assess the extent to which proficiency in these areas has been attained.

V. Evaluation

- A. **Exams.** There will be 3 exams throughout the semester. The exams during the semester will be non-cumulative, and cover only the material picking up where the prior exam ended. There is no final exam in the class.
- B. **D2L Quizzes.** In order to incentivise reading assigned materials and coming to class for lecture, there will be online quizzes (on D2L) throughout the semester. Quizzes are due at the end of each week. These quizzes will be short, and should be fairly easy if you have been keeping up with class material. You may take quizzes as many times as you want before the deadline, and your score will be the highest score you achieve.
- C. **Homework assignments and other papers.** This component of the course will be a combination of small assignments as assigned throughout the semester. This will include assignments handed out in class or assigned on D2L. These assignments will always be mentioned in class slides, so if you miss class it is up to you to make sure you are keeping up to date on D2L.

IT IS VERY EASY TO LOSE A LARGE PART OF YOUR POINTS IN THIS CLASS BY NOT DOING ANY OF THE HOMEWORK ON D2L. I warn you about this because students regularly fail the class because they simply don't pay attention to lectures and/or D2L, and miss a lot of these assignments.

- D. **Research Participation:** Learning about Psychological Research.

NOTE: It is very easy for you to say 'I'll take care of this later', and then forget to do it all semester. If you simply forget to do this part of the class, you should note that your grade - by simple virtue of this component of the class being worth 10% of the grade - will automatically be two steps lower on the grading scale than if you had done it (e.g., a 87% or 3.5 would become a 77% or 2.5). Don't put this off - get it done early!

Students are required to participate in activities designed to acquaint them with the nature and variety of research in psychology. Students must participate in two and a half (2.5) credits worth of enrichment activities. In addition to this, students will write a short paper about any one (1) of the studies they participate in as part of this grade component. As a research methods class, this is an invaluable opportunity to see research being conducted through first-hand experience, and a very useful way to get you thinking about research in the real world.

Objective

The objective of this assignment is for you to gain direct experience with psychology research studies and what it is like to participate in them. In class, we shall discuss the social psychology of psychology research and how experimental designs take into account the expectations and beliefs of the participants. By participating in studies yourself, you can gain an understanding of the strengths and limits of psychological research. Psychology

Department faculty and their research assistants perform the studies, all of which have been reviewed and approved by the university's Institutional Review Board.

Online Registration

To participate in studies, you must register on the Study Scheduling System, accessible from the Psychology Department website (<https://msu-psychology.sona-systems.com/>). The vendor maintains a strict policy protecting privacy and confidentiality. (This policy is available for review in the Psychology Office.) Navigating the Study Scheduling System is straightforward, and if you need guidance, detailed instructions are available on the Psychology Department website.

Participating in Studies

You will register for studies on the Study Scheduling System. Before you sign up to participate in a study, review any listed restrictions (for example, "left-handed people only"). If you sign up for a study and you do not meet the posted eligibility requirements, you will not receive credit for the study.

Arrive before the scheduled time, as studies start punctually. You will be given a description of what participating in the study will involve, and you will be asked for your consent before the study begins. If you then choose not to participate, you may leave without penalty. You can check to see that you have received credit by selecting My Schedule/Credits, where credits are typically posted within a week after you participate in a study.

If you sign up for a study but cannot attend, please cancel your session on-line.

Under 18?

Special rules apply to students who are under 18. If you are under 18, please contact Audra Jeffrey (jeffre22@msu.edu), for information about permission requirements before participating in studies.

Need Help?

If you need assistance registering for studies, please contact Audra Jeffrey (jeffre22@msu.edu). Your instructor generally cannot be of help with the SONA system, as instructors only get information about SONA participation at the end of the semester, and do not have access to student records or participation information during the semester.

Deadline

The last day to participate in studies is when the SONA system closes for the semester, which can be as early as the Friday before the last week of classes. Do not wait until this time, as many studies finish before this and you may not have any opportunities to participate left. Get this done quickly so that you don't have to continue to worry about it.

Section Numbers

MAKE SURE THAT WHEN YOU SIGN UP FOR SONA, YOU SIGN UP FOR THIS SECTION OF THE CLASS! There are many sections of each class, and if you sign up for the wrong one, I won't receive any of your credits at the end of the semester. This can be fixed after grades are in, but it takes more paperwork and can have impacts on your transcript in weird ways. If you sign up for the wrong section you can change this throughout the semester, but it is your responsibility to know what section you are in and make sure this is correct in SONA. Check this more than just when you initially sign up.

Alternative to Research Participation

If for any reason you do not want to participate in the above research, an alternative exists that involves writing a series of papers on existing psychological research. If you want to engage in this option instead of research please contact the instructor for more information. Take note that this alternative assignment is not an effective solution for finding yourself at the end of the semester without having participated in research, as the alternative is likely to be more time consuming than simple participation. More information can be found by contacting the instructor or on D2L once this assignment is posted.

Any alternative assignments completed this way are due at the end of unit 12. This alternative to research is not meant to be a failsafe for those who completely forget about this component of the grade all semester, but rather for those who choose not to participate in research (for whatever reason).

- E. Lab Exercises.** A large part of this class is getting hands on experience working with data in the lab component of this class. As part of this, each lab will have associated exercises and assignments that will help guide you through that lab content. These will be exercises that you will work on during these lab sessions, and will generally be due at the end of each week.
- F. Late policy.** Unless otherwise noted above, the late policy for written work is as follows. Work may be submitted early, via Blackboard, for any assignment. The deadline for all assignments, unless otherwise specified, is 11:59pm on the day prior to class.

Work that is submitted past the deadline FOR ANY REASON receives a one full letter grade (10%) deduction per day late (e.g., a paper that earns an A is worth a B if 0-24 hours late; a paper that earns an A is worth a C if 24-48 hours late).

Furthermore, no work may be submitted after the official close of the semester without an approved course extension. (Such extensions are granted in only the most extreme, and documented, circumstances.)

G. Point breakdown by category.

ASSIGNMENT	% OF TOTAL
Quizzes	20%
D2L Assignments	10%
Research Participation	10%
Exams	30%
Lab Exercises	30%

VI. Grading Scale

GRADE	PERCENT
4.0 (A)	90%-100%
3.5 (B+)	85%-89%
3.0 (B)	80%-84%
2.5 (C+)	75%-79%
2.0 (C)	70%-74%
1.5 (D+)	65%-69%
1.0 (D)	60%-64%
0.0 (F)	<60%

THESE ARE FIRM CUT-OFFS. I round up to the nearest percent (e.g., 89.5% rounds up to 90% and equals a 4.0, but 89.4% rounds down to 89% and equals a 3.5). The point categories listed above reflect this rounding. **DO NOT** attempt to negotiate grades with me. It is your responsibility to make sure your grade ends up where you want it to be. I have provided ample extra credit opportunities for students who wish to improve their grades. Students who want to improve their *learning* (and therefore their grades) should see me *early* in the class for assistance. I will *not* negotiate grades with you, but I will do everything in my power to help you put in the necessary work to be as successful as you desire.

VI. Disability Accommodation

Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at rcpd.msu.edu. Once your eligibility for an accommodation has been determined, you will be issued a Verified Individual Services Accommodation ("VISA") form. Please present this form to the instructor at the start of the term and/or two weeks prior to the accommodation date (test, project, etc.). Requests received after this date may not be honored. Please contact the professor to coordinate what accommodations will be made in your individual case for this class.

VII. Academic Honesty

Unless otherwise noted, all work for this course should be independently completed. Students should take special care to provide proper citation of sources when submitting written work. Adopting words, passages, or ideas without citation is plagiarism and will be treated as such per

MSU guidelines. Furthermore, students should not self-plagiarize, that is, reuse their own work from another course. In addition, unless explicitly stated that it is allowed, students should not use their own work from within the course.

Letting any other student in this class see your work, even if you're only 'comparing' or 'checking it', or doing whatever you want to say you're doing, is a clear violation of academic integrity. The easiest way to make sure that no other students turn in your work without your knowledge is to not let your work out of your hands. Your work is your intellectual property (IP), and you should protect it as such. Sharing your work with other students may very well lead to you failing the class if they turn it in as their own.

Doing work with another student and then turning in the same (or slightly altered) work, using the work of another student to complete your own work, submitting another student's work as your own, having another student do your work, or copying direct wording from another student or other source, are only some examples of cases that are essentially definitions of plagiarism. If no one has ever told you this, now I have. Copy-pasting anything while completing an assignment is quite possibly plagiarism, and it is not hyperbole to say that while you are in college you should think deeply about what you are doing any time you copy-paste anything for a class assignment.

Copy-pasting things from the internet 'as a start' for completing assignments is one of the worst strategies you could ever hope to apply in a classroom setting, and doing so will likely also lead to some degree of plagiarism. **YOUR WORK IS YOUR WORK.**

Penalties for plagiarism and cheating include a range of outcomes, up to and including automatic failure of the course. Please read that again. If you commit an academic integrity violation, you may simply fail the course, regardless of how much of it you have completed, or in what capacity. This happens frequently, despite all my warnings.

Penalties for academic integrity violations generally start in the range of a 'double zero' - a zero for the assignment that counts worth double. This is meant to make academic integrity violations more impactful than simply not doing the work at all. Please read that again. If you cheat on an assignment, the grade you will receive will be worse than if you turned in nothing at all, but, depending on the infraction, you're also likely to simply just fail the course.

In addition to all of the above, plagiarism and cheating are reported to the university and a record of these events is held by the university. There is an office of the university specifically dedicated to this, and one of your goals in college should be never interacting with it. This goal is relatively simple to achieve: maintain appropriate standards of academic integrity and honesty.

I do not claim to be able to catch everyone that cheats in any class, so when I do catch individuals I make sure that the penalties are sufficient to attempt to deter this behavior in the future. I do not enjoy in the slightest entering failing grades for students who have committed academic honesty infractions - it is in fact one of my least favorite parts of teaching. I do it because it is my responsibility to all of you to do so.

You should also consider, at this point, if you haven't before, that cheating in any class here in college means that you have not actually earned a college degree. While you may get a diploma in this way, it thus renders it pointless, as the diploma then comes with an asterisk: 'this student cheated to get this degree.' While no one but you might ever know this, you should contemplate if that's the only way you can actually complete a college career.

I recognize that cheating is often situational. You have multiple jobs, you have family issues come up, you have relationship issues come up, you have other class commitments, or you simply didn't budget your time well. College is stressful, and demanding. If you find yourself in these situations in any class: TALK TO YOUR PROFESSOR. I guarantee that they are happier to work with you ahead of time and find ways for you to complete work rather than having to fill out academic integrity paperwork.

In addition, here is some University language:

The Spartan Code of Honor states, "As a Spartan, I will strive to uphold values of the highest ethical standard. I will practice honesty in my work, foster honesty in my peers, and take pride in knowing that honor is worth more than grades. I will carry these values beyond my time as a student at Michigan State University, continuing the endeavor to build personal integrity in all that I do." In addition, Article 2.III.B.2 of the Student Rights and Responsibilities (SRR) states that "The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards." The (insert name of unit offering course) adheres to the policies on academic honesty as specified in General Student Regulations 1.0, Protection of Scholarship and Grades; the all-University Policy on Integrity of Scholarship and Grades; and Ordinance 17.00, Examinations. (See Spartan Life: Student Handbook and Resource Guide and/or the MSU Web site: www.msu.edu.)

Therefore, unless authorized by your instructor, you are expected to complete all course assignments, including homework, lab work, quizzes, tests and exams, without assistance from any source. You are expected to develop original work for this course; therefore, you may not submit course work you completed for another course to satisfy the requirements for this course. Also, you are not authorized to use the www.allmsu.com Web site to complete any course work in this course. Students who violate MSU academic integrity rules may receive a penalty grade, including a failing grade on the assignment or in the course. Contact your instructor if you are unsure about the appropriateness of your course work. (See also the Academic Integrity webpage.)

VIII. Our Social Contract

In order for this course to function optimally, we both have parts to play, and when we each do our part, everyone benefits.

As professor, I promise to always do my very best to select interesting and thought-provoking course material. I will prepare course materials to the best of my abilities, and I will make decisions about the course according to the learning goals I have outlined here. I will act fairly – holding every student to the same high standard and providing equal opportunities for success.

As student, you promise to prepare diligently for class, to always contribute to the best of your abilities, to never cheat or act dishonestly, and to treat your classmates and me with the highest respect. You will do your best to attend class and be on time. You will not ask me to grant you special privileges that aren't available to the rest of your classmates, in order that I may adhere to my promise to be fair and just to all of you.

IX. Limits to confidentiality.

Essays, journals, and other materials submitted for this class are generally considered confidential pursuant to the University's student record policies. However, students should be aware that

University employees, including instructors, may not be able to maintain confidentiality when it conflicts with their responsibility to report certain issues to protect the health and safety of MSU community members and others. All instructors are mandatory reporters in these cases, and are obliged by contract not to maintain confidentiality as such. As the instructor, I must report the following information to other University offices (including the MSU Police Department) if you share it with me:

- Suspected child abuse/neglect, even if this maltreatment happened when you were a child,
- Allegations of sexual assault or sexual harassment when they involve MSU students, faculty, or staff, and
- Credible threats of harm to oneself or to others.

These reports may trigger contact from a campus official who will want to talk with you about the incident that you have shared. In almost all cases, it will be your decision whether you wish to speak with that individual. If you would like to talk about these events in a more confidential setting you are encouraged to make an appointment with the MSU Counseling Center.

XII. Course Calendar

Unit	Date	Topics	Reading/Homework/Due	Lab
1	5/16-5/17	Introduction Course Overview	Read: Chapter 1	No lab
2	5/18-5/19	Science I Ethics and Science	Read: Chapter 3	Lab 1
3	5/22-5/23	The Process of Scientific Research Basic Statistics	Read: Chapter 2 SPL: Stats Book Ch. 1-4	No lab
4	5/24-5/25	Style Guidelines APA Style From Research to Publication Reading Research	Read: Chapter 11 SPL: APA Style 7th Edition	Lab 2
5	5/26-5/30	Statistics for Science I	Read: Chapter 12 SPL: Stats Book Ch. 5-7 EXAM 1	No lab
6	5/31-6/1	Sampling Theory External Reliability & Generalizability	Read: Chapter 7, part 36 SPL: Stats Book Ch. 4-5	Lab 3
7	6/2-6/5	Psychological Measurement Reliability and Validity of Measurement	Read: Chapters 4 & 7	Lab 4
8	6/6-6/7	Experimental Designs I	Read: Chapter 5	No lab
9	6/8-6/9	Experimental Designs II Threats to Validity	Read: TBD	Lab 5
10	6/12-6/13	Statistics for Science II	Read: Chapter 13 SPL: Stats Book Ch. 8-14 EXAM 2	No lab
11	6/14-6/15	Multivariate Research	Read: Chapter 9 SPL: TBD	Lab 6
12	6/16-6/19	Pseudoscience to the Modern Era	Read: Feynman 1974	No lab
13	6/20-6/21	Non-Experimental Research	Read: Chapter 6	Lab 7

14	6/22-6/23	Other Research Designs	Read: Chapters 8 & 10	No lab
15	6/26-6/27	Wrap-up	EXAM 3	No lab

Note: Quizzes are due at the end of each unit (at 11:59pm) over the prior unit's material

Note: Exams and larger papers are generally due at the end of a unit (at 11:59pm), and will clearly be marked as such on D2L.

Make sure you are checking D2L, and understand how to check and track deadlines on D2L.