ADVANCED RESEARCH IN PSYCHOLOGY

PSY 400 – Fall 2021

Prof. Katie Corker
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Section 09, T/Th 1:00-2:15p, Mackinac Hall A2165
Section 06, T/Th 2:30-3:45p, Mackinac Hall A2165

Prerequisites: PSY 101 or HNR 234, STA 215 or STA 312, PSY300

Office Hours: T/Th 11:30a-12:45p, Online Monday 2:30p-3:00p
Appointments during Office Hours:
https://katiecorker.youcanbook.me/
Appointments at other times (email to request)
Meet me on Zoom: https://is.gd/katiecorker

Office Location: 2128 Au Sable Hall
Office Phone: (616) 331-2932 (but email is recommended)

Note: This course is subject to the GVSU policies listed at
http://www.gvsu.edu/coursepolicies

I. Course Overview

This course is designed to teach you, in a very hands-on and practical way, what you need to know to conduct research in psychology. From conceptualizing a research question, to searching the psychological literature, designing a study, obtaining ethical approval, analyzing the data, and writing up/presenting results, you will learn the ins and outs of conducting research. Even for those students who do not intend to continue to graduate study, this course will provide access to a set of skills that you will be able to use in conducting high quality research on any topic in the future.

The way in which we will accomplish these goals is by actually conducting research. You will learn how to design and analyze a *between-subjects, factorial experiment*. In small groups, students will replicate and extend an existing experiment. Students will individually conduct a complete write-up of the project and present the results orally near the end of the term. You will find this course challenging! To perform well, you will need to actively engage in course activities, including assigned readings. There will be very little lecture in this course.

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, you should not expect to get a response until 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.

C. My expertise. I was trained as a personality and social psychologist with a specialization in quantitative methods. I earned a Ph.D. and a master's degree from Michigan State University and a bachelor of arts from the University of Northern Iowa. I have conducted research in the areas of motivation, goal setting, academic achievement, and the role of personality in influencing all of these variables. Much of my current research pertains to replicability in psychological research, what has been termed "meta-science" (the study of science and scientists).

III. Required Reading

Required Readings:

Crump, M. J. C., Price, P. C., Jhangiani, R., Chiang, I-C., A., & Leighton, D. C. (2017, August 18). *Research methods for psychology (Brooklyn College edition).* Retrieved from https://crumplab.github.io/ResearchMethods/Methods_Crump.pdf

All other required readings will be posted on the course website.

Recommended Supplements:

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, 7th Edition*
3. *Research Methods in Psychology: Evaluating a World of Information* (2017; 3rd Edition) by Beth Morling, ISBN: 978-0393617542

IV. Learning Objectives

[From the syllabus of record] Upon completion of this course, students will be able to:

(1) Explain research methods issues including ethical issues, measurement, reliability and validity of methods, experimental, quasi-experimental and survey research designs, biases in experimentation, and univariate and multivariate data analysis
(2) Demonstrate the ability to design and conduct an empirical study in psychology.
(3) Write a research paper describing a psychology experiment.
(4) Discuss their studies in critical ways by recognizing limits and problems.

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 and learning objectives (above), students will learn how to think like psychological scientists. They will learn how to distinguish 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 what 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 reinforce a basic grounding in statistics as used in psychological research. This course takes your knowledge of measures of central tendency, variability, correlation, null hypothesis significance testing (*t*-test, ANOVA), and effect sizes (*d*, *r*), and it extends them to include factorial ANOVA and multiple regression. Students will

apply this knowledge to the interpretation of statistical reporting in the psychological research literature. This course also emphasizes understanding cumulative science.

D. **Graphical displays and interpretation.** Students will learn to interpret graphical displays of data, as well as produce graphical displays and figures for their research reports.

E. **Oral presentation and civil discourse.** Oral communication is a critical skill for success in your life at GVSU 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 understand and critique a variety of research designs and modal research practices in psychology.

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

V. Evaluation

A. **In-class exercises.** Students will complete in-class exercises that will help them (1) practice needed techniques and (2) make progress towards their research projects. There are eight such assignments scored on completion. Attendance or alternative attendance required for credit; the lowest assignment is dropped.

B. **Discussion preparation.** For four discussions throughout the semester, students will complete a worksheet and bring it to class with them. Attendance or alternative attendance required for credit; the lowest assignment is dropped.

C. **Lab worksheets.** Students will complete exercises during classes that are held in the computer lab. There are eight such assignments scored on completion. Attendance or alternative attendance required for credit; the lowest assignment is dropped.

D. **Research proposal, report, and presentation.** Students will replicate and extend a psychological research

study. In small groups, students will work together to propose a test of a hypothesis. Although students will work together to design and analyze their studies, students will individually report their findings in an APA style paper. Presentations will occur in groups, but will be individually evaluated. Evaluations may include a peer assessment component.

E. Exams. There will be two midterm exams and one cumulative final exam. The purpose of the midterms is to give early feedback on your understanding of course material and make sure you are keeping up with the material. Exams will be a mix of multiple choice and short-answer format. The dates of the exams are firm – I will not change them on you at the last minute.

F. Attendance. This class functions best when you can attend every class. It will be much easier for you to be successful if you can attend every class. However, given the current circumstances, some students may need temporary remote accommodations to be able to complete the course. Please contact me at your earliest convenience if you anticipate needing to miss multiple classes due to illness, injury, or other circumstances.

1. Masks: It is expected that students will follow GVSU policy on wearing masks during class. Please ensure that your mask is correctly secured over your nose and mouth. Please, no food or drink in the classroom when masks are required. Students not following masking rules will be asked to leave class.

2. Symptomatic illness or COVID exposure: Please do not come to class if you are ill or have a known exposure to someone with COVID. Instead, follow the class procedures for an absence.

3. Exams: Students should make every effort to take exams in person at the designated time. In the event of illness or injury, please contact me at your earliest convenience. If you anticipate an excused absence for an approved extracurricular/ religious holiday, please make arrangements with me at least one week before the exam to take the exam early.

4. Course modality: This is an in-person course. We will continue to meet in-person, in the absence of any new orders from the university or the state of Michigan. It is not possible for me to offer this course remotely to some of you, while continuing to teach in person to the remaining students. If circumstances conspire to make it impossible for you to attend in person, we will consider a variety of options including (a) dropping the course with a "W" (withdrawal), which does not affect your GPA and lets you take the course at another time when you are able, (b) remote completion (my ability to offer this option will depend on how much of the course has been completed, as well as what percentage of the class requires this support), and (c) grade of incomplete (granted only at the end of the semester to students who are unable to complete the course, due to unexpected emergency circumstances, and who are near to completion of the course).

G. Extra credit. Students may complete article critiques on a subject unrelated to their main research topic for extra credit, worth up to 5 points each. Additionally, students may identify research methods concepts in popular culture or the news, and then write a one page reflection explaining the concept and its relation to the event in question. <u>These Cultural Applications are to be submitted on Blackboard no later than 7 days after the news story or event in question</u>. Reflections are worth up to 5 points each. Students may earn no more than 20 points of extra credit through any combination of extra credit possibilities. <u>All extra credit is due, via Blackboard, no later than 12 pm on 12/10/21.</u> Students found guilty of academic dishonesty are ineligible for extra credit.

H. Late policy. *In class assignments, discussion worksheets, and lab worksheets <u>may not be</u> late (but we do drop the lowest of each assignment).* **Other work that is submitted late receives a two full letter grade (20%) deduction (e.g., a paper that earns an 80% is worth a 60% if 0-24 hours late; a paper that earns an 80% is worth a 40% if 24-48 hours late).** Students with extended illness/injury should work with the instructor to

develop an alternative schedule. 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.)

I. Point breakdown by category.

ASSIGNMENT	POINTS	% OF TOTAL
In-Class Activities	7*8 = 56	11%
Discussion Prep	3*6 = 18	4%
Lab Worksheets	7*8 = 56	11%
Proposal (Group)	40	8%
Final draft	100	20%
Final presentation	30	6%
Exams (3x)	(60*2)+80 = 200	40%
Extra Credit	Up to 20 pts.	4%

VI. Grading Scale

GRADE	POINTS	PERCENT
A	463-500	93%-100%
A-	448-462	90%-92%
B+	433-447	87%-89%
B	413-432	83%-86%
B-	398-412	80%-82%
C+	383-397	77%-79%
C	363-382	73%-76%
C-	348-362	70%-72%
D+	333-347	67%-69%
D	313-298	60%-66%
F	<297	<60%

THESE ARE FIRM CUT-OFFS. I round up to the nearest percent (e.g., 86.5% rounds up to 87% and equals a B+, but 86.4% rounds down to 86% and equals a B). 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.

VII. Disability Accommodation

Any student in this class who has special needs because of a learning, physical, or other disability, please contact me and Disability Support Services (DSS) at (616) 331-2490. It is the student's responsibility to request assistance from DSS.

VIII. 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 GVSU guidelines. Furthermore, students should not self-plagiarize, that is, reuse their own work from another course. The penalties for academic dishonesty range from zero on that assignment to failure in the course.

A note about collaboration: Collaborative work is sometimes allowed in this course. Collaborative work means sharing ideas with your peers. Collaboration does not mean giving completed work to your peers to use.

For additional details on academic honesty, please see the student code.

IX. 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.

X. Course Calendar

WS = Worksheet; DSW = Discussion Worksheet; LWS = Lab Worksheet

Wk.	Date	Topic	Reading/Homework/Due
1	8/31	Introduction & Syllabus	-
	9/2	Purpose and basics of research	*Drop by 9/3 for 100% refund*
2	9/7	Factorial Designs	-
	9/9	APA style & literature search; Writing intros and discussions	WS1
3	9/14	Factorial Designs	WS2
	9/16	Discussion 1 & Form Groups	**Read:** Schooler & Engstler-Schooler (1990) DWS1
4	9/21	Discussion 2	**Read:** Knobe (2003), DWS2
	9/23	Validity and reliability (operationalizations)	WS3
5	9/28	**Exam 1**	**-**
	9/30	Proposal generation	-
6	10/5	Groups meet with instructor & Groups work on lit review	WS4
	10/7	Methods section & descriptive statistics	LWS1
	Due 10/11, noon, BB: Proposal (one per group)		
7	10/12	Statistical significance and effect sizes	WS5
	10/14	*t*-test, ANOVA, chi-square	LWS2
8	10/19	Factorial ANOVA	LWS3
	10/21	**Exam 2**	-
Fall Break			
9	10/28	Using Qualtrics and making codebooks; Ethics	WS6
Due 11/1, Noon, Email: Qualtrics Questionnaire			
10	11/2	Tables and figures	LWS4
	11/4	Hypotheses and results sections	WS7
11	11/9	Correlation and regression	LWS5
	11/11	Catch up	-

12	11/16	Reliability	Data collection complete LWS6
	11/18	Comp Lab 7	LWS7
13	11/23	Comp Lab 8	LWS8
Thanksgiving Break			
14	11/30	Peer Review: Bring 2 paper copies of your draft with you to class	WS8
	12/2	Registered replication reports	**Read:** Schooler RRR DWS3 - do before class
Due 12/6, Noon, BB: Final draft of research report			
15	12/7	Final Presentations	-
	12/9	Science 2.0	**Read:** Nosek, Spies, & Motyl, 2012 DWS4 - do before class
16	Tues. 12/14	CUMULATIVE FINAL EXAM	**Sec 09 - FINAL EXAM** (12p-2p)
16	Thurs. 12/16	CUMULATIVE FINAL EXAM	**Sec 06 - FINAL EXAM** (2p-4p)

Reading Schedule

Open Access [OA] Textbook:
https://crumplab.github.io/ResearchMethods/Methods_Crump.pdf

Week 1: Basics of research (pp. 19-47, 87-132)
Week 2-3: Factorial Designs (pp. 133-157); Literature review (pp. 48-62)
Week 3: Theories (pp. 165-187); Schooler & Engstler-Schooler (1990); [Published version; OA version]
Week 4: Measurement (pp. 63-86); Knobe (2003) [Published version; OA version]
Week 5: None
Week 6: Methods section (pp. 291-321)
Week 7: Data analysis (pp.323-351)
Week 8: Ethics (pp. 189-205)
Week 9: None
Week 10: Tables & figures (Dunn, Ch. 8); Results sections (pp. 353-381)
Week 11: Reliability (Measurement matters)
Week 12: None
Week 13: Verbal overshadowing RRR [Published version; OA version]
Week 14: Nosek, Spies, & Motyl (2012) [Published version; OA version]

Statistical Software

This class uses SPSS. You can obtain your copy of SPSS by following the steps at this link:
https://www.gvsu.edu/it/how-to-download-and-install-spss-224.htm

There are two steps to complete. First, you will download the program. Second, you will license the program. Only Windows and Mac computers can install SPSS (Chromebooks are not compatible).

Alternatively, you can access SPSS by using a "virtual computer lab." Simply log on to the lab here: https://winlab.gvsu.edu/ The lab connects you to a computer through a web browser. Any operating system (including Chrome OS) is compatible.