

**Grand Valley State University**  
**Psychology 400: Advanced Research Methods in Psychology**

**Professor:** Todd Williams, Ph.D.

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Sections:        400 (05) 11:30-12:45  
                     400 (02) 1:00 - 2:15

Location: Lake Superior Hall 233

Location: Lake Superior Hall 229

\*Please specify your course number in the subject section of your emails

**Office Hours:** 3:00 - 4:00 pm TR and by appointment

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**Course Description:** Experimental and survey methods in psychology. Topics covered include philosophy of science; theory development; measurement; reliability and validity of methods; experimental, quasi-experimental, and survey research designs; biases in experimentation; univariate and multivariate data analysis; and research ethics.

**Course Objectives:** The course is designed to accomplish three main objectives: (1) To teach students how to evaluate real-world claims like those presented in the media (e.g., Does cell phone use increase the frequency of car accidents? Does playing violent video games cause aggressive behavior?); (2) To teach students how to critically evaluate and summarize empirical research findings; (3) To provide students with the basic skills to conduct research in the social sciences.

**Course Prerequisites:** **PSY 101, STA 215, WRT 150 and PSY 300.** You may not take any of these prerequisite courses concurrently with PSY 400.

**\*\*\*Please ask me during the first class about the cheapest options for purchasing the required texts.**

**Required Texts:**

Mitchell, M. & Jolley, J. (2007). *Research Design Explained* (7th ed). Belmont: Wadsworth

American Psychological Association (2010). *Publication Manual of the American Psychological Association*. (6<sup>th</sup> ed). Washington, DC: Author. *Copies are available in the Zumberge:*  
BF76.7 .P83 2010

\*Please DO NOT use pocket or non-APA published versions of this manual. Most have a number of mistakes (this includes some guides that are assigned in writing classes)

Research articles, supplemental readings and my lecture notes will be posted online.

**Tentative Grade Evaluation:**

	<b>Description</b>	<b>Weight</b>
Homework	Assignments and homework will be administered on a random basis throughout the semester.	10%
Midterm and Final	There will be a midterm and a final. They will be multiple choice, short or long answer depending on the material being tested.	20% each
Research Proposal Initial Submission	This will be the initial submission of your research project write up.  Additional information concerning this assignment will be posted on BlackBoard.	10%
Research Presentation	With a partner, you will present and critique a research article.	10%
Peer Evaluations	You will be evaluated by your peers based on your contribution to both your research proposal and your research presentation	10%
Research Proposal Final Draft	The final draft of your APA style research proposal.	20%

Final grades are determined after combining scores from the assignments, peer evaluation, class participation and the final exam. Students are ranked in order of total scores and a grade is assigned so that the class average falls between the 75th and 79th percentiles (Letter grade = B)

**This is a *tentative* grade distribution**

<b>Rating</b>	<b>Letter Grade</b>	<b>Grade Point Value</b>	<b>Percentage Grades</b>
Excellent	A	4.0	90-100%
Excellent	A-	3.7	85-89%
Good	B+	3.3	80-84%
Good	B	3.0	75-79%
Good	B-	2.7	70-74%
Satisfactory	C+	2.3	65-69%
Satisfactory	C	2.0	60-65%
Satisfactory	C-	1.7	55-59%
Poor	D+	1.3	50-54%
Minimal Pass	D	1.0	45-49%
Failure	F	0	0-44%

**Missed Exam/Assignment:**

Unfortunately, many of you do not have adequate health insurance. Because if this, I typically will not require a note from a health professional to document your absence. However, documentation is necessary if you miss more than one major assignment or exam, or in the case you miss the final exam. A registered health professional must provide the medical certificate, acknowledge the date of the missed exam/assignment, and provide his/her contact information. If you miss any class component, you must report your illness to me within 48 hours of the exam/assignment due date, however your documentation may be provided at a later date. If a single class component is missed, the student will be given an extension or have the weight of the missed examination/assignment added to the final examination.

**Student Responsibilities:**

**ACADEMIC INTEGRITY:** Grand Valley State University is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the *Code of Student Behaviour* (online at <http://www.gvsu.edu/studentcode/index.cfm>) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University. No student shall represent another's substantial editorial or compositional assistance on an assignment as their own. Furthermore, no student shall submit in any course or program of study, without the written approval of the course instructor, all or a substantial portion of any academic writing, essay, thesis, research report, project assignment, presentation or poster for which credit has been obtained by the student or which has previously been or is being submitted by the student in another course or program of study in the University or elsewhere. All forms of dishonesty are unacceptable at the University. Cheating, plagiarism and misrepresentation of facts are serious offenses. Anyone who engages in these practices will receive a grade of zero for the exam or paper in question and no opportunity will be given to replace the grade or redistribute the weights. Any offense will be reported to the Dean of the CLAS who will determine the disciplinary action to be taken.

**CELL PHONES:** As long as you are not disruptive, feel free to use it.

**STUDENTS WITH DISABILITIES:** If there is any student in this class who has special needs because of a learning, physical, or other disability, please contact me and Disability Support Resources (Room 200 STU; 616 331 2490). Furthermore, if you have a physical disability and think you will need assistance evacuating this classroom and/or building in an emergency, please make me aware so that I can develop a plan to assist you.

**ACADEMIC SUPPORT CENTRE:** Students who require additional help in developing strategies for better time management, study skills or examination skills should contact the Advising Resource Centre (200 STU).

**WRITING CENTER:** <http://www.gvsu.edu/wc/>

The writing center has a number of my ex-students who provide advice and support in scientific writing and composition of research reports. Please contact the writing center directly to make an appointment.

*Disclaimer: This syllabus is subject to change. Any changes will be announced in class.*

<b>Tentative Lecture Schedule &amp; Assigned Readings:</b>		
<b>January 7/9</b>	<p><i>Course Introduction</i></p> <p><i>Psychology as Science</i></p> <p><b>Discussion:</b></p> <ul style="list-style-type: none"> <li>• Karl Popper and Thomas Kuhn</li> <li>• Objectivity in Science</li> <li>• Results versus Theory Driven Research</li> <li>• Formulating Research Ideas</li> </ul>	<p><b>Syllabus</b></p> <p><b>Assigned Readings:</b></p> <p>Hergenhahn (2001)</p> <p><b>Recommended Review Readings:</b></p> <p><i>Remler &amp; Ryzin</i> (Chapter 10)</p> <p><i>Stangor</i> (Chapter 5)</p>
<b>January 14/16</b>	<p><i>Review of Experimental Methods</i></p> <ul style="list-style-type: none"> <li>• Variance</li> <li>• Hypothesis Testing</li> <li>• Correlation/Causation</li> <li>• Validity</li> <li>• Review of within vs between subject experimental designs</li> <li>• Order Effects</li> <li>• Counterbalancing</li> <li>• Covariates</li> </ul>	<p><b>Assigned Reading:</b></p> <p><i>Mitchell &amp; Jolley</i> (Chapter 10 &amp; 15)</p> <p>Homework 1 (due 16<sup>th</sup>)</p>
<b>January 21/23</b>	<ul style="list-style-type: none"> <li>• Review of within vs between subject experimental designs</li> <li>• Order Effects</li> <li>• Counterbalancing</li> <li>• Covariates</li> </ul>	<p>Homework 2 (due 23<sup>rd</sup>)</p>

<b>January 28/30</b>	<b><i>Factorial Designs</i></b>  <b>Activity:</b> Form research groups  In-Class Exercise  Plotting, Interpreting and Describing Interactions	Mitchell & Jolley (Chapter 12)  Mitchell & Jolley (Chapter 13)  Homework 3 (due 30 <sup>th</sup> )
<b>February 4/6</b>	From Theory to testing Hypotheses	Group meetings
<b>February 11/13</b>	<b><i>Survey Methodology</i></b>  <b>Discussion:</b> <ul style="list-style-type: none"> <li>• Elements of constructing a survey</li> <li>• Item Construction</li> <li>• Survey Error</li> <li>• Survey Sampling</li> </ul>	Mitchell & Jolley (Chapter 11)  Sinclair et al. 2001  Homework 4(due 13 <sup>th</sup> )
<b>February 18/20</b>	<b><i>Survey Methods / Midterm</i></b>	
<b>February 25/27</b>	<b><i>Conducting Experiments</i></b>	Mitchell & Jolley (Chapter 11)
<b>Spring Break March 2-6</b>		
<b>March 10/12</b>	<b><i>Survey Sampling/Research Projects</i></b>	
<b>March 17/19</b>	<b><i>Research Ethics</i></b> The power of the situation on human behavior	Mitchell & Jolley (Chapter 2)
<b>RESEARCH PAPER DRAFT DUE</b>		
<b>March 24/26</b>	<b><i>Analysis of Variance</i></b> <ul style="list-style-type: none"> <li>• Review of T</li> <li>• One way ANOVA</li> </ul>	Jackson & Verberg (2009; Chapter 8)

<b>March 31/ April 2</b>	<b><i>Statistics (ANOVA)</i></b> <ul style="list-style-type: none"> <li>• Two way ANOVA</li> <li>• Post Hoc and Planned Comparisons</li> </ul>	Christensen (Chapter 14) Stangor (Chapter 8)
<b>April 7/9</b>	<b><i>Regression</i></b> <ul style="list-style-type: none"> <li>• <i>Testing interactions Using Regression</i></li> <li>• <i>Mediational Analysis</i></li> </ul>	
<b>April 14/16</b>	<b><i>RESEARCH PRESENTATIONS</i></b>	<b>Final Research Proposal due Peer Evaluations due</b>
<b>April 21</b>	<b>FINAL EXAM</b>  <i>Section 05</i> <i>Section 01</i>	<i>10:00 – 11:50</i> <i>12:00 – 1:50</i>

# RESEARCH PROPOSAL

## **Research Proposal Objectives**

The research proposal in this class is designed to stimulate critical scientific thinking and to introduce you to a new area of psychology while simultaneously developing your understanding of research methods and introducing you to APA format and proper standards in scientific writing. In this assignment you will propose a study that will test a novel hypothesis. Completing this project will involve a series of sequential steps that will lead you to your final product; A 6-12 page APA style paper that will outline the theoretical rationale, methods, results and conclusions pertinent to your research question.

## **Description of Research Proposal**

You propose a novel study in any area of psychology and, in doing so, will conduct a literature review and utilize psychological theory and your knowledge of research methods to test a hypothesis that follows from a research question that you are interested in.

Both the development of your idea and the process of writing an APA style research report will occur through in-class and group discussions, homework assignments (below), lecture instruction and iterative feedback on your proposal drafts.

*Homework 1* – Drawing from personal interest, popular media, reputable news outlets, or class lecture, submit two paragraphs outlining two topics in psychology that you are interested in and may serve as the topic of your research proposal (e.g. Persuasion, Body Image, Lying). In your description of these two topics, provide clear operational definitions of the phenomena and explain the importance of understanding this topic for the betterment of society.

*Homework 2* – Use the PsycInfo database to find four peer-reviewed, empirically based research articles/reviews of your research topics (two articles per topic). Provide a half-page summary of each topic that your articles discuss. Explain any ideas that you have that might extend the ideas discussed in the research articles that could serve as the basis for Homework 3

*Homework 3* - Read 3 additional articles on your topic and propose a two-condition experiment that will provide a useful extension or test a novel question related to your topic.

- You should include:
- A paragraph summarizing the research you've reviewed.
- A paragraph summarizing what your study will demonstrate and how it will extend past research on the topic.
- Your proposed design (within or between subjects)
- Your hypothesis. (in statement and written form)
- Details on what variables will be controlled or randomized in order to ensure the internal validity of your study.
- Your predictions

*Homework 4* – **With a partner** choose a topic and propose an experiment or quasi-experiment with two independent variables and a single dependent variable that tests an interactive prediction. The first paragraph will introduce your topic and the background research related to it. A second paragraph will provide your research question, and operational definitions of your variables. You will also provide a 2x2 table showing your experimental conditions and the predicted results of your study (similar to the in-class factorial exercises). You will receive feedback on your ideas and will be asked to revise this assignment until your proposed design is free of confounds and provides a systematic test of your research question. One proposal will be submitted per research team.

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### **Research Paper Draft**

You and your partner must propose an *experimental* or **quasi-experimental** design to test your hypothesis. The proposed study should predict an *interaction* and contain two independent variables. One or both of these variables *should be manipulated*. (That is, there should be a treatment and a control condition.) Your *independent* variables can be categorical (nominal) or continuous (ratio, interval or ordinal), but your dependent variable must be continuous. You are permitted to use one non-manipulated variable if it suits your design (ie: age, self-esteem, gender, personality characteristics).

Your proposed study in APA manuscript format. Include a cover page (title, header, running head, page numbers, authors, institution affiliation etc.) abstract, introduction, methods, proposed results, and a reference section. You do not need a discussion section at this point, but feel free to include one if you're feeling keen.

What I am expecting is a draft of an APA paper. In each section, simply provide an effective description of what you're planning. I am not expecting that this draft be perfect, but the more comprehensive it is, the better feedback (and grade) you will earn.

*Abstract* – 150-250 word summary of the project

*Introduction* – An introduction describing previous literature in the area and the relevance of what you want to do. End this section with a summary of the literature reviewed, your research question and predictions.

*Method* – Tell me what type of design you are using (within/between subjects?) Explain your cover story, consent, procedure, equipment, participants, and materials.

Hint: While you are not going to actually run this study, I do expect that you make an effort to propose something that would be reasonable to do in real life.

*Results* – What are you expecting to find? Be sure to predict an interaction between your two independent variables. Please provide a graph or table of your predicted results. You do not need to describe your data analysis techniques in this draft.

*Discussion* – While it should be clear from your introduction, you could include a paragraph on why finding the predicted results would be important. This is an **optional** section for Assignment 1 (required for Assignment 2)



References – Use in-text citations throughout the paper and include an APA format references section.

***Tentative Grading Scheme Research Proposal Draft (Assignment 1):***

APA formatting (Includes references section)	No one has ever gotten perfect marks on this...I dare you to be the first.	10 Marks
Literature Review	Does it cover a reasonable amount of research in the area (ie: 10 articles that are pertinent)	20 Marks
Research Idea	Is idea explained relative to the previous literature?	20 Marks
	Is the studies novel contribution explained?	
	Is the idea conveyed clearly?	
	Is the idea psychological?	
Methods	Are the variables operationalized well?	20 Marks
	Are the proposed methods suitable for testing the idea?	
Results	Do the predicted results match with the theoretical background?	20 Marks
	Is an interaction predicted?	
	Are the expected results communicated scientifically?	
	Is a table or figure provided?	
Readability	Overall scientific tone, parsimony, grammar and clarity of communication	10 Marks

**Assignment total /100**

**Final Research Proposal (Assignment 2)**

This paper should be APA format research report that addresses a novel research question. Paper length is not set, however most projects that receive good grades are approximately 8-12 pages in length. The originality and relative contribution of the research will be graded in addition to the cohesiveness and clarity of the paper, the accuracy of the statistical techniques employed and the strength of the literature review and discussion sections.

Note: Carefully review my feedback from Assignment 1 to improve your paper as best you can. Most papers improve substantially from their first drafts, so expect that the grading standard will be much higher for final proposal versus the initial draft.

APA formatting – 10 marks

Overall readability of the paper – 10 marks

Relative contribution of research idea -20 marks

Research design and methods – 20 marks

Proposed Analysis and Predicted Results – 20 marks

Discussion, implications and directions for future research – 20 marks

**Assignment total /100**