

Advanced Research in Psychology
(PSY. 400, Sections 1, 2, 6)
Tuesdays (10 – 11:15 am and 11:30 – 12:45 pm)
Meetings will be posted on Blackboard

Prerequisites: Psy. 101 and Research Methods (Psy. 300)

Instructor: Prof. Eaaron Henderson-King
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Office hours: **Tuesday 4-5 pm or by appt.**

Readings:

- a) Crano & Brewer (2002). *Principles and Methods of Social Research* (pgs. 61-124). [Blackboard](#)
- b) Dillman, Smyth, & Christian (2009). *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method* (pgs. 65-181). [Blackboard](#)
- c) Fife-Schaw, C. (2008). Principles of Statistical Inference (Chapter 19). In Breakwell, G.M, Hammond, S., Fife-Schaw, C. & Smith, J.A. (Eds.) *Research Methods in Psychology (3rd edition)*. [Blackboard](#)
- d) Wilson J. H. & Joye, S. W. (2019). *Research Methods and Statistics: An Integrated Approach*.

Overview: The purpose of this course is to do an in-depth exploration survey design and experimental design methods. It is expected that you already have some knowledge of psychology, research methods and statistics. The course will be most useful for those who are interested in psychology as a career and research in general; however, it will also be useful for those who simply want to hone their critical thinking skills, and have a better understanding of what research results do and do not convey.

While I will try to make the course as interesting and topical as possible, it can be difficult and time consuming. You must also be able to think on your own, and work in an environment where you have more freedom and flexibility than you have had in the past. I will be setting up the course in a manner that will allow you to move through it at your own pace, or follow along as I move through each week. I will do lecture modules that will range between 10 – 20 minutes and videos that I have gathered that do a very nice job of discussing concepts that are central to the course. These videos will also vary in length with some being as short as 5-minutes and others being as long as 60 minutes (broken into three 20-minute segments) when watching these get some popcorn. I have chosen videos in which the person has explained the concept under consideration in a very clear and thorough way.

You watch them as frequently as you like. The creators of the videos are way more capable of creating an engaging and nicely produced video than I am, so I think you will enjoy them way more than ones that I would have attempted to make.

One concern that I have is the extent to which people will stay engaged in the course over the course of the semester. I would suggest that you block off 2-3 hours a week to listen/watch the lectures I'll have made. Give yourself another 90-120 minutes a week to do some of the course readings. To do both of these I would suggest using the Pomodoro Technique. The technique entails your focusing on a specific task for four 25-minute blocks with a 5-minute break between each block. For the 25-minutes you only work on the task you have set for yourself (no answering your phone, checking it, or answering emails or text messages). You can do whatever you want for the 5-minute break but what's that is over you are back to work for the next 25-minutes. I have used this method a lot over the past summer and I find it really does help me to focus on specific task for a two-hour period of time. Here's a link to an article about the technique: <https://www.themuse.com/advice/take-it-from-someone-who-hates-productivity-hacksthe-pomodoro-technique-actually-works>

Here's a video on the technique that is really worth watching:
<https://www.youtube.com/watch?v=114w7uHdNaQ>

Class Meetings

I will have meeting times available on Tuesdays (11:30 – 12:45 pm and 1 – 2:15 pm) to talk with people. I will also record these sessions and post them on Blackboard.

Things to Note

- a) Do not plagiarize anything. At this point in your academic career, you should know what plagiarism is and what constitutes plagiarism. If you do not, look it up. While you may work with other students to understand the various assignments, what you submit for grading must be your own writing (with the exception of the final project). Plagiarism will, at best, result in an “F” on the assignment. However, I will determine whether more severe consequences are called for.
- b) Substandard work will receive a grade that reflects that reality.
- c) I cannot, and will not, come up with something for you to do to improve your grade if you are not doing “well” or as well as you expected at the end of the semester. There will be various opportunities for extra credit points throughout the semester. These are your chances to enhance your final grade.
- d) If you are not doing well by the middle of the semester **seriously consider dropping the class**. There is very little evidence that students who are not completing assignments, completing assignments with grades that are in the D-F range, and who are doing poorly because of negative life events improve their scores to a significant degree midway through the semester. While it is certainly possible, it is rare and Covid-19 and remote learning has only made this harder.

Assignments

There will be **two** low stakes assignments and **one major** assignment over the course of the semester.

Below is the link to GVSU Winlab. This allows you to use your home computer to access the GVSU systems and STATLAB.

<https://winlab.gvsu.edu/index.pl>

Use your student sign-on information to access the system and then navigate to SPSS.

Low Stakes Assignments – Using SPSS (THE SPSS VIDEOS TO ASSIST YOU IN COMPLETING THE ASSIGNMENTS ARE ON PAGES 13-14)

1) **Correlational and Regression Analysis Assignment** – I will give you a set of raw data that you will have to input into SPSS, create indices for the variables (if needed), assess the internal reliability of the indices (if needed), and then conduct the appropriate correlational analyses and regression analyses.

- a) Copy the commands showing how you created each index, and assessed internal reliability for each in the SPSS syntax file you created into a Word document.
- b) Then, in the same Word document, briefly summarize the results of the correlational analyses. State what they indicate. Use APA style.
- c) Then, in the same Word document, briefly summarize the results of the regression analyses. State what they indicate. Use APA style.

SEE PAGE 18 FOR ADDITIONAL INFORMATION ON THIS ASSIGNMENT

2) **Analysis of Variance Assignment** -- I will give you a set of raw data that you will have to input into SPSS, create indices for the variables (if needed), assess the internal reliability of the indices (if needed), and then conduct a 2 x 2 Analysis of Variance. If needed, conduct the simple effect analyses as well.

- a) Copy the commands showing how you created each index, and assessed internal reliability for each in the SPSS syntax file you created into a Word document.
- b) Then, in the same Word document, briefly summarize the results of the Analysis of Variance. State what they indicate. Use APA style.

SEE MY LECTURE NOTES ON ANALYSIS OF VARIANCE FOR THE BASIC STRUCTURE ON REPORTING THE RESULTS OF AN ANALYSIS OF VARIANCE.

Major Assignment

In completing the major assignment, you can **either work individually or with another person(s) in the class**. A group can be no larger than three students and they will have the option of either submitting a single paper or submitting their own paper. Let me know if you are going to work with another person(s). The project will entail your designing a study using either a survey design or an experimental design. This is a

It will require you to discuss why you chose the particular methodology over the other (that is the advantages and disadvantages of each approach and why the methodology you chose would be better than the alternative).

A. Format/Structure of Project

I. Introductory Paragraph (**No more than half a page**)

- a. general problem
- b. what has previous research examined
- c. what is missing and why important to take into account
- d. Purpose of study is to examine X, Y, on Z (example)

II. Literature review (**One and a half to two pages**)

- a. relevant literature on X
- b. relevant literature on Y

NOTE a. and b. can be combined when you deem it appropriate

III. Overview of study followed by hypothesis(es)

IV. Method (**One and a half to two pages**)

1. Participants
2. Materials
3. Procedure

V Results (**No more than a half page**)

VI References (how many? Enough to show the reader that you have a good grasp of the literature.)

The reason for why you chose survey over experimental can be on a separate page or at the end of the introduction. **THIS SHOULD BE A ONE TO TWO PARAGRAPH DISCUSSION.**

B. Method Section Content

1) The method section for an EXPERIMENTAL DESIGN should take the following format (although it can differ as a function of the type of experiment you are proposing to conduct).

a) Participants and Design

- 1) How many subjects would you use
- 2) Where were they from (university students, community in Northern California, etc.)

3) Give relevant demographic (for example, how many females and males, race/ethnicity, age and age range, etc.

4) Paid or volunteers

5) Design

b) Materials (there will be times when you can combine the materials and procedure sections)

1) If you would use materials to manipulate the independent variables then you would discuss these first. For example, "Participants read one of two news stories that appeared in a student newspaper in which either a male or a female undergraduate (gender of target) either cheated on an exam or studied extremely hard in order to pass an exam." You would give more detail as to the content of the story.

2) you would then discuss the dependent variable or variables of interest. Did you choose a multiple response measure as opposed to a single response measure? Why? If you used a multiple response measure did you use one that was unidimensional or multidimensional? Why? How were the items scaled (i.e., nominal, ordinal, interval or ratio) and what are the implications of using such a scale? What about open-ended vs close-ended?

c) Procedure

1) Were the subjects run individually, in groups, on-line?

2) What were they told the study was about?

3) What did they complete first?

4) What did they complete second?

5) Were they debriefed after completing the study?

See Buck, Plant, Ratcliff, Zielaskowski, Boerner (2013) for one example of how to approach each of these sections. This manuscript will be in the course documents section of Blackboard.

You would also have a Results Section

a) What analyses would you conduct and why?

2) The method section for a SURVEY DESIGN should take the following format (although it can differ as a function of the type of experiment you are proposing to conduct).

a) Participants

1) How many subjects would you use

2) Where were they from (university students, community in Northern California, etc.)

3) Give relevant demographic (for example, how many females and males, race/ethnicity, age and age range, etc.

4) Paid or volunteers

b) Materials (there will be times when you can combine the materials and procedure sections)

Here you will have a separate paragraph for each measure that you will use to tap each construct that you are interested in. For each, did you choose a multiple response measure as opposed to a single

response measure? Why? If you used a multiple response measure did you use one that was unidimensional or multidimensional? Why? How were the items scaled (i.e., nominal, ordinal, interval or ratio) and what are the implications of using such a scale? What about open-ended vs close-ended?

c) Procedure

- 1) Were the subjects run individually, in groups, on-line?
- 2) What were they told the study was about?
- 3) What did they complete first?
- 4) What did they complete second?
- 5) Were they debriefed after completing the study?

See van den Berg, Paxton, Keery, Wall, Guo, & Neumak-Sztainer (2007) for one example of how to approach each of these sections. This manuscript will be in the course documents section of Blackboard.

You would also have a Results section

- 1)What analyses would you conduct and why?

C. Annotated Bibliography

The annotated bibliography should consist of no less than 10 articles that you have completed a summary between 100 – 200-words in length. The following link will bring you to Purdue Owl, it has an example of an APA style annotated bibliography (the example that says “Sample APA Annotation”). You should also explicitly state which section(s) of the introduction each article will be referenced in.

https://owl.purdue.edu/owl/general_writing/common_writing_assignments/annotated_bibliographies/annotated_bibliography_samples.html

D. Introductory Paragraph

The introductory paragraph should start by discussing the general issue. It should then TRANSITION into a very succinct discussion of the status of the research in the area at this point and WHAT IS LACKING in this work and why what is missing is important. It should then move to explicitly communicating the purpose of the study. In stating the purpose, you should be clear as to the constructs that you are examining and these should be connected to what you said was LACKING in the field – that is, you are telling the reader what you are adding to our understanding of the phenomenon. See van den Berg, Paxton, Keery, Wall, Guo, & Neumak-Sztainer (2007) for one example of how to approach the introductory paragraph.

E. Additional Information About Method Section

These are some very valuable resource materials that you *should/must* use in writing your Method section. The video, maps onto much of what I will communicate about writing a method section and the website gives you written documentation as to the structure.

Really Essential Information About Writing a Method Section

<https://www.verywellmind.com/how-to-write-a-method-section-2795726>

<https://belmont.edu/nursing/pdf/APA/2014SampleAPAResearch.pdf>

<https://papersowl.com/blog/how-to-write-the-methods-section-of-a-research-paper>

Video on Method Section

https://www.youtube.com/watch?v=eaoF_58hyO4

Exams

There will be two mid-term exams and a **cumulative** final exam. The midterms will be comprised of a 25-point application section in which you will have a week to complete, and a multiple-choice section consisting of 15 items. The multiple-choice section will be posted on the Sunday or the Monday of exam week and you will be given four days to complete that portion of the exam. Once you have started the multiple-choice portion you will have 20 minutes to complete it.

The final exam will be optional for students who have earned 82.5% or higher across all other course assignments. Those with scores below 82.5% **must** take the cumulative final exam. The final exam will consist of an application section and a multiple-choice section.

Review Sheet (EXTRA CREDIT) – For each exam, students can submit a thoughtful review sheet that covers the material for that exam. It should consist of key points, summaries, and concepts that you deem important. The review sheet can take any form that you would like (e.g., multiple-choice questions, crossword puzzle, note-cards, text, etc.). These reviews sheets will be worth up to 3 extra credit points. You should use these reviews to assist in your studying.

Grading

Exam 1	-- 40 points
Exam 2	-- 40 points
Quiz 1	-- 10 points
Quiz 2	-- 10 points
Quiz 3	-- 10 points
Quiz 4	-- 10 points
Final Exam	-- 70 points
Correlational & Regression Assignment	-- 20 points
Analysis of Variance Assignment	-- 20 points
Annotated Bibliography	-- 30 points
Introductory Paragraph	-- 20 points

Final Assignment	-- 100 points

Total Points	-- 400 points

Due Dates for all Assignments and Exams:

Assignment	Due Date
Quiz 1	1-29
Quiz 2	2-05
Introductory Paragraph	2-05
Annotated Bibliography	2-26
Quiz 3	2-26
Correlation and Regression Homework	3-05
Exam 1	3-05
Quiz 4	3-19
Exam 2	4-02
Analysis of Variance Assignment	4-16
Final Project	4-13

Grade Distribution:

A -- 100 -94%	A- -- 93.9-90%
B+ -- 89.9-87%	B -- 86.9-83%
B- -- 82.9-80%	C+ -- 79.9-77%
C -- 76.9-73%	C- -- 72.9-70%
D+ -- 69.9-67%	D -- 66.9-63%
D- -- 62.9-60%	F -- 59.9%-->

Course Objectives

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 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) Have clear sense of what some of the essential elements of writing a research paper are.
- 4) be able to understand why critical thinking and the objective analysis of issues and phenomena are important in the life of the citizen.

University Notice

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

The Semester

Week 1 (1-18 to 1-22)

Introduction & Research Methods Review

Module 1 -- The Scientific Method in Context – Ways of knowing

Readings:

Fife-Schaw (Chapter 19) [Blackboard reading](#)

Chapter 1 (Wilson & Joye)

Module 2 – Basic Assumptions of Scientific Approach

War on Science segment

<https://www.youtube.com/watch?v=Do-3WCKhdI0>

Module 3 – Developing Research Ideas

Week 2 (1-25 to 1-29)

Survey Design

Quiz 1 – Modules 1-3, Fife-Schaw (Chapter 19); Wilson & Joye (Chapter 1)

Module 4 – Overview

Module 5 – Sampling

Week 3 (2-1 to 2-5)

2-5 -- Introductory Paragraph Due

Quiz 2 – Modules 4-5

Module 6 – Questionnaire Design

Week 4 – Week 5 (2-08 to 2-12 and 2-15 to 2-19)

Module 6a – Questionnaire Structure and Item Wording

Readings:

Dillman, Smyth, & Christian (2009). *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method* (pgs. 65-181). [Blackboard](#)

Discussion of Exam Application Section and Proposed Project

Week 6 (2-22 to 2-26)

2-26 -- Annotated Bibliography Due

Quiz 3 – Modules 6 and 6a (NOT DILLMAN et al., these chapters will be on EXAM 1)

Module 6b – Using SPSS (**these will be a series of videos**)

Module 6c – Correlational Analysis

Week 7 (3-1 to 3-5)

Module 6d – Regression Analysis

3-5 SPSS Correlation and Regression Assignment Due

Exam 1 – Modules 1-6d AND ALL READINGS

Week 8 – Week 9 (3-8 to 3-12 and 3-15 to 3-19)

Experimental Design

Readings:

Crano & Brewer (2002). *Principles and Methods of Social Research* (pgs. 61-124).
[Blackboard](#)

Module 7 – Overview

Module 8 – Four Basic Building Blocks of Experimental Design

- Assigning Subjects to Conditions
- Pre-test – Post-test vs Post-test Only
- One-Way vs Factorial Design
- Between Groups vs Within Groups vs Mixed factors Designs
- Main Effects and Interactions

Really Helpful Videos: Main Effects and Interactions (Both are good but I like the second one a bit better than the first)

<https://www.youtube.com/watch?v=OE46w0RqmQA>
<https://www.youtube.com/watch?v=GGvuacZb-AQ>

Quiz 4 (End of Week 9) – Modules 7-8 (NOT Crano and Brewer those chapters will be on EXAM 2)

Week 10 (3-22 to 3-26)

Module 9 – Power Analyses

Readings:

Chapter 10 (Wilson & Joye)

Really Helpful Videos:

This one is good but at times a bit goofy --

https://www.youtube.com/watch?v=VX_M3tIyiYk

Module 10 – t-tests

Week 11 (3-29 to 4-2)

Exam 2 Modules 7-10 AND ALL READINGS

Module 11 – One-way Analysis of Variance

Really Helpful Videos: One-Way ANOVA

https://www.youtube.com/watch?v=q48uKU_KWas

Week 12 (4-5 to 4-9)

Module 12 – Factorial Analysis of Variance

Readings:

Ch. 14 Wilson & Joye

Really Helpful Videos: Two-Way ANOVA by HAND

<https://www.youtube.com/watch?v=cNIIn9bConY>

Week 13 (4-12 to 4-16)

Analysis of Variance Assignment Due

Major Assignment Due

Week 14 (4-19 to 4-23)

Review for final exam

Week 15 (4-26 to 4-30)

Study for final exam or take-final exam

Final Exam Cumulative

SPSS VIDEOS

1) Introduction to SPSS

https://www.youtube.com/watch?v=27pOf3_Kq3s

2) Recoding Variables in SPSS

<https://www.youtube.com/watch?v=K-eY-AXIERA>

3) Transforming variables to create a mean index (as well as Cronbach alpha)

In this video she shows you how to do a recode.

a. <https://www.youtube.com/watch?v=fnWG1C61oSk>

In this video she shows you how to obtain the Cronbach alpha

b. <https://www.youtube.com/watch?v=pJT9Ch93XSg>

4) Correlational Analyses in SPSS

<https://www.youtube.com/watch?v=rR99bpl0rKM>

5) Regression Analyses

a) Bivariate Regression (Gives you the foundation of regression)

<https://www.youtube.com/watch?v=1Md18jjKJCO>

b) Multivariate Regression (Gives you an understanding of Multiple Regression)

Part 1: Brandon Foltz Stats 101

<https://www.youtube.com/watch?v=dQNpSa-bq4M>

Part 2: Brandon Foltz Stats 101

https://www.youtube.com/watch?v=wPJ1_Z8b0wk

Part 3: Brandon Foltz Stats 101

<https://www.youtube.com/watch?v=px72eCYPuvc>

Multiple Regression using SPSS (Stepwise example but much of what he talks about applies to when we put all of the predictors in at the same time)

Part 1: How2Stats

<https://www.youtube.com/watch?v=IWYENu0kCYE>

Part2: How2Stats

https://www.youtube.com/watch?v=oi_oWh_4d78

Part3: How2Stats

<https://www.youtube.com/watch?v=IUtYadNLV3s>

Part4: How2Stats

<https://www.youtube.com/watch?v=pIgUOIHwRkk>

Part 5:

<https://www.youtube.com/watch?v=UiJ4G3rLIXA>

6) Analysis of Variance (ANOVA)

a) One-way

https://www.youtube.com/watch?v=q48uKU_KWas

b) Two-way

This is a really good one!!! It shows you how to conduct the simple effect analyses when you have an interaction.

<https://www.youtube.com/watch?v=0MoCt14isz0>

This one does not tell you how to conduct the simple effects analyses, but it is also good.

https://www.youtube.com/watch?v=q4IJtIzgg_Y

Major Assignment Winter 2021

Advanced Research Methods

The project will entail your designing a study using either a survey design or an experimental design. It is a research proposal and you are NOT collecting any data.

Introductory Paragraph

The introductory paragraph should start by discussing the general issue. It should then TRANSITION into a very succinct discussion of the status of the research in the area at this point and WHAT IS LACKING in this work and why what is missing is important. It should then move to explicitly communicating the purpose of the study. In stating the purpose, you should be clear as to the constructs that you are examining and these should be connected to what you said was LACKING in the field – that is, you are telling the reader what you are adding to our understanding of the phenomenon. See van den Berg, Paxton, Keery, Wall, Guo, & Neumak-Sztainer (2007) for one example of how to approach the introductory paragraph.

10 pts

b. No more than a page and a half where you discuss the relevant literature that helped you to formulate your hypothesis/hypotheses. At the end of the page and a half, you should have an Overview section where you present the essence of your study (how the variables will be assessed (survey design) or manipulated (experimental design)). **Remember, the reader should be able to guess your hypothesis from the theoretical and empirical research you discuss in this section!!!**

20 pts

c. State your expected hypothesis/hypotheses.

5 pts

d. Discuss why you chose the particular methodology over the other (that is the advantages and disadvantages of each approach and why the methodology you chose would be better than the alternative).

10 pts**Experimental Design (If you choose this approach)**

Method

a) Participants

- 1) How many subjects would you use
- 2) Where were they from (university students, community in Northern California, etc.)
- 3) Give relevant demographic (for example, how many females and males, race/ethnicity, mean age and age range, etc.)
- 4) Paid or volunteers

10 pts

b) Materials

1) If you would use materials to manipulate the independent variables then you would discuss these first. For example, "Participants read one of two news stories that appeared in a student newspaper in which either a male or a female undergraduate (gender of target) either cheated on an exam or studied extremely hard in order to pass an exam." You would give more detail as to the content of the story.

2) you would then discuss the dependent variable or variables of interest. Did you choose a multiple response measure as opposed to a single response measure? Why? If you used a multiple response measure did you use one that was unidimensional or multidimensional? Why? How were the items scaled (i.e., nominal, ordinal, interval or ratio) and what are the implications of using such a scale? What about open-ended vs close-ended?

20 pts

c) Procedure

- 1) Were the subjects run individually, in groups, on-line?
- 2) What were they told the study was about?
- 3) What did they complete first?
- 4) What did they complete second?
- 5) Were they debriefed after completing the study?

10 pts

Results Section

1) What analyses would you conduct and why?

10 pts

Survey Design (If you choose this approach)

Method

a) Participants

- 1) How many subjects would you use
- 2) Where were they from (university students, community in Northern California, etc.)
- 3) Give relevant demographic (for example, how many females and males, race/ethnicity, mean age and age range, etc.
- 4) Paid or volunteers

10 pts

b) Materials

Here you will have a separate paragraph for each measure that you will use to tap each construct that you are interested in. For each, did you choose a multiple response measure as opposed to a single response measure? Why? If you used a multiple response measure did you use one that was unidimensional or multidimensional? Why? How were the items scaled (i.e., nominal, ordinal, interval or ratio) and what are the implications of using such a scale? What about open-ended vs close-ended?

25 pts

Format Correlation and Regression Assignment

Section A – Present SPSS commands that were used for all recodes, compute commands, reliability analyses, correlational analyses, and regression analyses.

Section B

Part 1 – Discussion of reliability analyses include table of reliability coefficients

Discussion of what was found for each index. Was the Cronbach Alpha satisfactory for each?

Part 2 – Discussion of correlational analyses include table of correlation coefficients

Using APA style, discuss what the correlational analyses reveal about the relationships amongst the variables.

Part 3 – Discussion of regression analysis include table of regression analysis.

Discuss what the regression analysis shows about the relationship between the predictor variables and the outcome variable.

NOTE: Make sure you use APA style in formatting each table. You can find good examples of how to format the tables by watching the correlation video, using Purdue Owl APA Formatting, and examining published articles that present means, correlation matrices, and regression output.