Advanced Research in Psychology
(PSY. 400, Sections 5, 6, 9)

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

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Office hours: T 2-3 pm and Th 1-2 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=1l4w7uHdNaQ

Class Meetings

I will have meeting times available on Tuesdays (2 – 3 pm) and Thursdays (1 – 2 pm) to talk with people but please email ahead of time, so that I can have some sense of how many people are going to be in attendance and what questions people have.

Assignments

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

Low Stakes Assignments – Using SPSS

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.

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.

Major Assignment

In completing the major assignment, you can **either work individually or with another person in the class.** Let me know if you are going to work with another person. The project will entail your designing a study using either a survey design or an experimental design.

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).

Discuss the appropriate methodology you would use to address the question(s) being explored. For instance, if you decide to use **experimental design** to examine a hypothesis, or set of hypotheses, you would have each of the following:

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 man females and males, race/ethnicity, ag and age range, etc.

4) Paid or volunteers

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?

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?

You would also have a Results Section

1)What analyses would you conduct and why?

If you decide to conduct a **survey** to examine the hypothesis then you would have the following sections:

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 man females and males, race/ethnicity, ag and age range, etc.
4) Paid or volunteers

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?

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?

You would also have a Results section

1)What analyses would you conduct and why?

Grading

Class Participation	-- 30 points
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
Final Assignment	-- 100 points

Total Points	-- 360 points

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 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-3WCKhdl0

Module 3 – Developing Research Ideas

Week 2 **Survey Design**

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

Module 4 – Overview
Module 5 – Sampling

Week 3

Quiz 2 – Modules 4-5

Module 6 – Questionnaire Design

Week 4 – Week 5

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

Week 6

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

Module 6d – Regression Analysis

SPSS Correlation and Regression Assignment

Exam 1 – Modules 1-6d AND ALL READINGS

Week 8 – Week 9 **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 – Modules 7-8 (NOT Crano and Brewer those chapters will be on EXAM 2

Week 10

Exam 2

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

Module 11 – One-way Analysis of Variance

Really Helpful Videos: One-Way ANOVA
https://www.youtube.com/watch?v=q48uKU_KWas

Week 12

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

Analysis of Variance Assignment Due

Major Assignment Due

Week 14

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-AXlERA

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

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

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

https://www.youtube.com/watch?v=1Md18jjKJCQ

b) Multivariate 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

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!!!

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