

**Psychology Research & Data Applications – PSY 350 – Winter 2024**  
Grand Valley State University, Department of Psychology

<b>Section 05</b>	<b>Section 06</b>
10:00 – 11:15 am	11:30 – 12:45 pm
Tuesday & Thursday	Tuesday & Thursday
A2165 Mackinac Hall	A2165 Mackinac Hall

**Instructor: Naomi J. Aldrich, PhD**

**Office:** 2205 Au Sable Hall

**Email:** [aldrichn@gvsu.edu](mailto:aldrichn@gvsu.edu)

**Office Hours:**

In person or via Zoom

1:15 - 2:15 pm (T/TR)

(Additional hours available per request)

**To Make Appointment Go To:**

<https://aldrichn.youcanbook.me/>

**Prerequisites:**

PSY 101 (or HNR 234)

STA 215 (or STA 312)

PSY 300 (taken before or in same semester as this course)

**Required Readings:**

All required readings will be posted to our Blackboard course.

**Strongly Recommended Materials:**

Access to a computer and SPSS software for use outside of class times

I highly encourage that you download SPSS onto your computer (if possible) during the first week of class. This will help reduce stress if there is an unexpected classroom computer issue. This will also give you the ability to work around your own schedule and save to your computer.

SPSS is free for current GVSU students (and is available in computer labs across campus as well).

**How to get access on your computer:**

- 1) You may download the program directly onto your computer  
<https://www.gvsu.edu/it/how-to-download-and-install-spss-224.htm> or
- 2) You may use GVSU's virtual computer lab. If you have a windows computer, you can go to the virtual lab here <https://winlab.gvsu.edu>, and if you have a Mac computer you can get to the lab here (however, you will need a VPN) <https://maclab.gvsu.edu>. If you need to set up pulse secure you can find instructions to do so here <https://www.gvsu.edu/it/downloading-installing-and-setting-up-pulse-secure-222.htm>

## Course Description

**Overview:** This course is designed to enhance your ability to organize, summarize, analyze, and visualize data in the context of psychological research. You will engage in various hands-on activities, developing your ability to apply information to solve important problems. In addition, you will learn how to effectively communicate quantitative findings both visually and in writing.

The skills we will develop in this course are important for everyone, regardless of your future academic or career goals. In today's world, being able to work with, and understand data, is important for both those planning on starting a career immediately after graduation and for those planning to pursue a graduate degree. The information covered in this course will help you think critically about how data is used in everyday situations and how to communicate its meaning to others.

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

Quantitative reasoning: Understanding, critiquing, managing, interacting with, and analyzing data.

Communication: Relaying information about data, orally, in writing, and graphically.

Upon successful completion of this course, students will be able to:

- 1) Interpret the results of correlational and experimental designs.
- 2) Assess reliability and validity quantitatively.
- 3) Identify and apply a variety of descriptive and inferential statistical tests appropriate for analyzing psychological data.
- 4) Explain orally, in writing, and graphically, the findings of psychological research.

## Important GVSU Resources

**Student Resources:** GVSU offers a variety of support for students. These include assistance with basic needs (such as food, housing, and laptops), academic support (such as tutoring and career advice), and wellness resources (such as health/mental health and opportunities to become more engaged with other students).

Here is a link to some of the resources currently available to students:

<https://www.gvsu.edu/care/campus-resources-15.htm> Please do not hesitate to reach out to me if you have any questions or if you are looking for a certain type of support. If I do not know the answer, I will try to find someone who does 😊.

**Disability Support Resources:** If you need academic accommodations because of a learning, physical, or other disability, please contact Disability Support Resources at 331-2490 to develop a plan of assistance that you can provide to me.

**University Counseling Center:** The University Counseling Center (UCC) provides personal, career, and group counseling to GVSU students free of charge. Furthermore, the UCC offers many self-help resources to students, including personal development assistance in dealing with issues of depression, loneliness, and how to manage stress, as well as study skill assistance such as test taking strategies, tips on how to successfully speak in front of a classroom, as well as guidance in writing research papers. For more information please visit: <http://www.gvsu.edu/counsel/> Phone: 331-3266, Email: [gvcounsel@gvsu.edu](mailto:gvcounsel@gvsu.edu) The UCC is located at:

Allendale Campus: 206 Student Services Center (Monday – Friday, 8:00am – 5:00pm)  
Pew Campus: DeVos 101B (Monday – Thursday, 8:00am – 5:00pm)  
Telehealth Appointments Available

If you or someone you know is in crisis, please reach out for support.



Suicide & Crisis Lifeline  
**Call or Text 988**

Crisis Text Line  
**Text HOME to 741741**

**Psych Friends:** If you feel you could use some extra help/guidance/support in any academic domain or for your well-being, please consider scheduling an appointment with a mentor through Psych Friends. Psych Friends mentors are upper-level undergraduate peer mentors who are trained to provide support in many areas including: effective study and time management techniques, exam preparation and reflection skills, comprehension of the psychology and behavioral neuroscience major requirements, tips for engaging in the field, strategies for education continuation, methods for maintaining physical and mental health. **Schedule an appointment here:** <https://www.gvsu.edu/navigate> Questions? Email: [psychfriends@gvsu.edu](mailto:psychfriends@gvsu.edu)

## Class Etiquette

**Email:** If you do not include “PSY 350” in the subject line, I may not read or respond to your email. Please use complete sentences and check for spelling errors. Also, please sign your full name and include your section number so I know who you are and what class you attend. **Also, please make sure to read your syllabus as the answer may be listed in these pages.**

**Classroom behavior:** Students are expected to behave appropriately during class. You may use the following principles to guide your classroom behavior: **Your behavior should not be disruptive or distracting to the instructor or your classmates.** The following will help you determine appropriate classroom behaviors. The following list is not exhaustive.

- 1) **Come to class on time.** Your late entrance is distracting to everyone.
- 2) **Stay for the entire class period.** If you must leave early, sit near the exit and leave quietly.
- 3) Put your cell phone on vibrate before coming to class.
- 4) You may eat or drink quietly during class, but **please clean up after yourself.** Also, no food or drinks during exams.
- 5) **Talk only when you have been given the floor.** Talking with the people next to you is distracting to everyone. If you are asking your neighbor a question about the course, it is likely that everyone will benefit if you raise your hand & ask your question of the instructor.
- 6) **Be attentive.** You may not realize it, but it is distracting to your instructor if you read a magazine in the back of the classroom or doze off during class. I cannot focus on the information I am trying to convey if I am worried that I am boring you.

## Course Requirements

**Attendance Policy:** It is your responsibility to be in class during the scheduled times. Be on time. Coming in late is rude to the other students. Failure to attend class regularly will negatively affect your grade as there will be in-class work that cannot be made up. **The dates on the class schedule for worksheets, quizzes, lab reports, and lab practical (final exam) are firm.** Except for students with extenuating circumstances (with documentation provided), I do not allow students to make up assignments or turn in work late (but I will drop your two lowest worksheet grades). Please email me if you know ahead of time that you will miss class.

**Academic Integrity:** Academic integrity often feels ambiguous, as the specific behaviors that are considered misconduct vary somewhat across disciplines and courses. My guiding principle is that **I want to know what YOU have learned in this course.** Behaviors that facilitate your learning the material are acceptable; behaviors that make it *appear* as if you have learned the material when you have not are

unacceptable. Behaviors that create the appearance of an unfair advantage or allow others to question whether you have really learned the material, such as having access to unapproved materials during an assignment/exam, are also unacceptable.

Students are expected to work within GVSU's Code of Student Conduct. Please see <http://www.gvsu.edu/studentcode/> for more information and familiarize yourself with these policies regarding dishonorable conduct. **No matter how mild or severe the cheating, it is entirely unacceptable, and I will enforce the current policies fully.**

***Plagiarism:*** As described by the GVSU Student Code, "Offering the work of someone else as one's own is plagiarism...." "Any ideas or material taken from another source for either written or oral presentation must be fully acknowledged." **"Depending on the instructor's judgment of the particular case, he/she may...give a failing grade for the ... entire course."** Simply rearranging the words or substituting synonyms in the original source is still plagiarism. **Furthermore, students should not self-plagiarize, that is, reuse their own work from another 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. If you have questions about what kind of collaboration is allowed, please ask.

**It is always OK to:**

- Ask questions.
- Study with classmates.
- Use sources to support your ideas and arguments, so long as you (1) restate the material in your own words, showing me what you think it means rather than copying and pasting or narrowly paraphrasing, and (2) you give credit to the original source with a citation. The words should be yours, but you still need to give credit to the source of the ideas.

**It is never OK to:**

- Have any materials (e.g., textbooks, notes in any form) accessible during quizzes or exams unless I have explicitly given you permission. This includes access to electronic devices (e.g., smart watches) that could conceivably be used to store notes; I want you to avoid even the appearance of improper behavior.
- Present anyone else's words or work as if they are your own. If you are defining terms, you should state them in your own words and cite the source. In this course, there is no reason to use direct quotations.
- Allow anyone else to present your words or work as their own. Enabling someone else's academic misconduct is also academic misconduct, even if you are not benefiting from it.
- Share assignments or quiz/exam questions or details with anyone who has not yet completed the work or taken the quiz or exam.

**These lists are not exhaustive – if you have any questions at all, please ask.**

This course is subject to the GVSU policies listed at:

<http://www.gvsu.edu/coursepolicies/>

## Evaluation Criteria

**Intro Assignments:** These should be completed during the first week of class.

- Reading this Syllabus
- Becoming familiar with our Blackboard site
- Getting access to SPSS for use outside of class time
- Pre-Semester Assessment (in-class)
- TED Talk (posted on Blackboard)
- My strategies Sheet (in-class)

**Worksheets:** Each week we will complete worksheets designed to allow you to practice the material we are covering in class. These are low stakes assignments designed to ensure needed skills are being gained. The two lowest scoring worksheets will be dropped. You will be able to complete most of the worksheets during class time, however, you will have the opportunity to work on the sheet after class too.

**Quizzes:** There will be one quiz per unit (for all units except the last). The purpose of the quizzes is to help you check your understanding of course material and make sure you are keeping up with the material.

**Lab Reports:** Each unit will involve completion of a brief (approximately two to three pages) report detailing the method and results of the analysis for each lab. Each lab report will include at least one data visualization.

**Take-Home Lab Practical:** Instead of a traditional final exam, you will be asked to demonstrate your understanding of course concepts and skills in a lab practical. This means that you will be given a data set and asked to analyze and answer questions about it, working independently.

## Grade Evaluation

As indicated above, credit for this course will be based on student performance in these areas. You can track your grades here:

Student Assignments:	Points Earned:	Points Possible:
<b>Worksheets (2 lowest dropped)</b>		9 * 10 pts
#1		
#2		
#3		
#4		
#5		
#6		
#7		
#8		
#9		
#10		
#11		
<b>Quizzes</b>		
#1		30
#2		30
#3		30
#4		30
<b>Lab Reports</b>		
#1		30
#2		30
#3		30
#4		30
<b>Final Exam (Lab Practical)</b>		100
<b>Extra Credit</b> (Intro Assignments for completion: Pre-Assessment, TED Talk, & My Strategies Sheet)		[10]
<b>Total Points Earned</b>		<b>430</b>

Grading scale to determine your final grade for the course:

Grade:	Percentage:	Points Needed:
A	93% and above	at least 398
A-	90% - 92%	at least 385
B+	87% - 89%	at least 372
B	83% - 86%	at least 355
B-	80% - 82%	at least 342
C+	77% - 79%	at least 329
C	73% - 76%	at least 312
C-	70% - 72%	at least 299
D+	67% - 69%	at least 286
D	63% - 66%	at least 269
F	62% or lower	267 or fewer

## Course Schedule

*The schedule is subject to change somewhat if needed.  
Any major changes will be announced in class and in Blackboard.*

### Unit 1: Wrangling and Exploring Frequency Data

#### Week 1: January 9-11

##### Introduction to the Course

Review of the syllabus and key course relevant concepts (e.g., SPSS/Excel). Review of basic statistical concepts. Please have SPSS on your computer (if possible) by the end of this week. Introductory assignments to be completed in-class and in Blackboard (discussed more in class).

**Deadlines:** Introductory assignments – Jan. 14<sup>th</sup> (midnight)

#### Week 2: January 16-18

##### Importing and Interacting with Data.

We will learn how to make a codebook, clean a data set, and do some very simple analyses using SPSS. We will also continue to review basic statistical concepts. We will also discuss features of effective visualizations.

**Deadlines:** Worksheet #1 - Jan. 18<sup>th</sup> (midnight)

#### Week 3: January 23-25

##### Describing and Visualizing Frequency Claims & Writing Methods and Results Sections

This week we will analyze frequency data (all variables will be categorical). Additionally, I will provide several examples of write-ups of statistical tests along with visualizations of these data sets. I will open Quiz 1 in BB on Thursday after class, and you will have until Sunday at midnight to complete it.

**Deadlines:**

- Worksheet #2 – Jan. 25<sup>th</sup> (midnight)
- Quiz #1 – Jan. 28<sup>th</sup> (midnight)
- Lab report assignment posted to BB.

### Unit 2: Assessing Measurement Quality and Testing Association Claims

#### Week 4: January 30 – February 1

##### Measurement & Effect Sizes, Tests of Association: Correlation

This week we will introduce Pearson's  $r$  (a real workhorse). We will move to continuous variables and continue to test associations between two variables.

**Deadlines:**

- Worksheet #3 – Feb. 1<sup>st</sup> (midnight)
- Unit 1 Lab Report – Feb. 4<sup>th</sup> (midnight)



### **Week 5: February 6-8**

#### **Confidence Intervals & Reliability**

We will continue discussing correlation and I will introduce several additional applications of this test.

#### Deadlines:

- **Worksheet #4 – Feb. 8<sup>th</sup> (midnight)**

### **Week 6: February 13-15**

#### **Validity and Prediction**

This week we will analyze several data sets that will allow us to predict one variable from another. We will also discuss the concept of validity and express it quantitatively.

#### Deadlines:

- **Worksheet #5 – Feb. 15<sup>th</sup> (midnight)**
- **Quiz #2 – Feb. 18<sup>th</sup> (midnight)**
- **Lab report assignment posted to BB.**

### **Unit 3: Methods of Testing Causal Claims and Group Differences**

### **Week 7: February 20-22**

#### **Probability and Null Hypothesis Testing**

This week we will discuss the underlying logic of hypothesis testing.

#### Deadlines:

- **Worksheet #6 – Feb. 22<sup>nd</sup> (midnight)**
- **Unit 2 Lab Report – Feb. 25<sup>th</sup> (midnight)**

### **Week 8: February 27-29**

#### **Independent and Paired Samples t-tests**

We will analyze several data sets and create visualizations for data analyzed with independent and paired groups t-tests.

#### Deadlines:

- **Worksheet #7 – Feb. 29<sup>th</sup> (midnight)**
- **Lab report assignment 3A posted to BB.**

### **No Class: March 5-7 (Spring Break)**

### **Week 9: March 12-14**

#### **One-way ANOVA**

We will explore cases where group differences are assessed with Analysis of variance. We will also create visualizations for ANOVA data.

#### Deadlines:

- **Unit 3A Lab Report – March 13<sup>th</sup> (midnight)**

**Week 10: March 19-21****Factorial ANOVA**

This week we will expand our ANOVA discussion to include contexts where more than one categorical variable is examined at a time.

**Deadlines:**

- Quiz #3 – March 24<sup>th</sup> (midnight)
- Worksheet #8 – March 28<sup>th</sup> (midnight)

**Deadline for Withdrawal: March 22****Week 11: March 26-28****Simple Regression****Deadlines:**

- Worksheet #9 – April 1<sup>st</sup> (midnight)

**Week 12: April 2-4**

We will review and develop a “big picture” of what we have learned so far. We will also discuss several data sets and you can practice deciding which test you would use to analyze the data presented. I will give you a decision flow chart to assist you.

**Week 13: April 9-11****Multiple Regression****Deadlines:**

- Worksheet #10 – April 14<sup>th</sup> (midnight)
- Quiz #4 – April 14<sup>th</sup> (midnight)
- Lab report assignment 3B posted to BB.

**Week 14: April 16-18**

We will look at a variety of data sets and decide which test to use and how to report our findings.

**Deadlines:**

- Worksheet #11 – April 18<sup>th</sup> (midnight)

**Week 15 (Finals Week):****Deadlines:**

- Unit 3B Lab report – April 21<sup>st</sup> (midnight)
- Take home final (and post-semester assessment) posted to BB.
- Final (Lab Practical) – April 25<sup>th</sup> (midnight)
- Post-semester assessment (does not influence grade) – April 25<sup>th</sup> (midnight)