

Course Syllabus
PSY 350 – Sections 01 and 02
Psychology Research and Data Applications
Grand Valley State University, Winter 2025

Instructor Information and Course Overview

Professor: Zach Salander

Please Call Me: Mr. or Professor Salander (pronouns: he/him/his)

Phone: 616-331-8514

Email: salandez@gvsu.edu (weekdays—M-F 9am-5pm—response window: ~12-24 hours; weekend—after 5pm on F—response window: ~24-48 hours)

Office: 2112 Au Sable Hall (ASH)

Office Hours:

- Mondays and Wednesdays from 12-1:30pm (in my office or over Zoom)
- By appointment (please contact me and we can discuss other possibilities)

Zoom Information: <https://gvsu-edu.zoom.us/j/6607658845?pwd=SmtRaGJIR0FsMVV5Z3RhY28xNGxhZz09>

Meeting Time and Place

Section 01: Tuesdays and Thursdays, 1-2:15pm, Mackinac Hall (MAK), Room A2165

Section 02: Tuesdays and Thursdays, 2:30-3:45pm, Mackinac Hall (MAK), Room A2165

Prerequisites

PSY 101 or HNR 234, STA 215 or STA 312, PSY 300 (taken either before this course or together with it)

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

Course Overview

This course is designed to enhance your ability to organize, summarize, analyze, and visualize data in the context of psychological research. Throughout the course, you will engage in various hands-on activities that will aid the development of your ability to apply information to solve important problems. Additionally, you will learn how to effectively communicate quantitative findings both visually and in writing.

It does not matter what your plans are after your time at GVSU, the skills you will develop in this course will be highly valuable. Working with, but also understanding, data is a skill that is essential for everyone to possess.

Learning Objectives

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

- a) Quantitative reasoning: Understanding, critiquing, managing, interacting with, and analyzing data.
- b) Communication: Relaying information about data, orally, in writing, and graphically.

After 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.

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.

Course Materials

Technology Requirements

For this course, we will use the Blackboard Ultra Learning Management System (<https://lms.gvsu.edu/>). Therefore, you are strongly encouraged to seek out regular access to a computer/tablet and a reliable, high-speed internet connection. If you plan to use Zoom (either for this class, another class, and/or if we must transition back to online learning), you'll also want a device with a video camera and microphone. Headphones are a bonus as they can help to keep conversations more private and can help filter out any unwanted noise.

If you do not have access to a computer or reliable internet, please talk with one of your professors and/or consult the "Student Resources" folder on Blackboard. These resources include information about on-campus computer labs, supplemental funding, etc.

R/RStudio (otherwise known as the "R environment")

This course will frequently make use of the R environment. This is **free software!** Although our course may be scheduled in a computer lab, I ***strongly recommend*** that you download both onto your computer (if possible). During the first week of class, you will be guided through how to do this.

It cannot be stressed enough how convenient it is for you to be able to continue your work outside of the classroom. Being able to save your work onto your computer's hard drive is a big benefit to having the R environment on your computer.

Required Readings

All required readings will be posted on our Blackboard site.

Recommended Supplements:

- 1) Publication Manual of the APA (7th edition; should be available at the library)

****Useful Website:**

https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html

Course Evaluation

1) Worksheets (90 points)

Each week will involve working on a worksheet that is designed to practice techniques for interacting with and analyzing data. These are low stakes assignments designed to ensure needed skills are being gained. You will get to attempt each worksheet **twice (your best score will be kept)**. To account for “life happens” moments, your **lowest worksheet grade will be dropped at the end of the semester**.

*** Any student that completes all the worksheets will receive 10 additional points added to their grade at the end of the semester. ***

Make-Up Worksheet Policy: Because you can drop your lowest grade, make-up worksheets will not be honored except under validated circumstances. Please refer to the “Course Policies and Resources” section later in this syllabus for more information. **You are responsible for knowing it!**

2) Quizzes (120 points)

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.

Make-Up Quiz Policy: Make-up quizzes will not be honored except under validated circumstances. Please refer to the “Course Policies and Resources” section later in this syllabus for more information. **You are responsible for knowing it!**

3) Lab Reports (120 points)

Throughout the semester, you will be asked to complete three reports detailing the method and/or results of the analysis for each lab.

Make-Up Lab Report Policy: Make-up lab reports will not be honored except under validated circumstances. Please refer to the “Course Policies and Resources” section later in this syllabus for more information. **You are responsible for knowing it!**

4) Lab Practical (100 points)

Rather than 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, during the week of Final Exams (please see course schedule for additional information).

5) Additional Assignments

The course instructor reserves the right to require individual students to complete additional assignments based on their performance, progress, and needs related to course materials. Contingencies related to these assignments will be described on an as-needed basis.

Grading Policy

Final Grading Criteria

A ≥ 93%	B 86.99-83%	C 76.99-73%	D 66.99-60%
A- 92.99-90%	B- 82.99-80%	C- 72.99-70%	F < 60%
B+ 89.99-87%	C+ 79.99-77%	D+ 69.99-67%	

Course Policies and Resources

Withdrawing from a Course

100% Tuition Refund Deadline: 01/10 by 5:00pm

75% Tuition Refund Deadline: 01/31 by 5:00pm

Withdraw with a “W” Grade Deadline: 03/21 by 5:00pm

Mask Policy

Face coverings, such as masks, must be worn in the classroom at all times under all Alert Levels except 0. When GVSU is under Alert Level 0, students and professors can choose to wear masks in classrooms if they wish and are required to wear masks if exposed to COVID-19 or showing symptoms. Masks are available at campus offices. [GVSU's policy on face coverings](#) is posted on the [Lakers Together website](#). Students unable to wear a face covering due to a medical condition should contact Disability Support Services (DSR) to discuss their situation.

Attendance Policy

Attendance is not required at class sessions, but ***strongly encouraged***. If you miss class, you are strongly encouraged to access notes from your classmates, and to contact your professor if you have any questions.

****NOTE:** Class sessions will NOT be recorded, nor may you record any part of class without my consent. You may also not share online materials with anyone outside of this class without my consent. If you miss class, you should reach out to your classmates for notes. It is your responsibility to find out about any information presented during class, which could include changes to this syllabus, announcements, assignments, etc. Please, help each other!

Accommodations for Late Work/Make-Ups

Although attendance at class sessions is not required, your professor is required to monitor missed deadlines and determine standards and a process by which students can make-up missed work. Importantly, if a student misses the deadline for an assessment and they are seeking an accommodation (i.e., permission to turn it in late), they must **contact the professor via email within 48 hours of the deadline with an explanation**. From there, **the professor will grant accommodations based upon 1) the cause for the missed deadline, and 2) the extent to which the student's ability to complete the assignment was impaired**.

Specifically, the reason for the missed deadline is key. The University makes a distinction between “excused” and “unexcused” absences, and although we aren’t keeping track of absences, this language is useful for characterizing the types of missed deadlines – we can miss deadlines for “excused” reasons (due to something unexpected or beyond our control, despite our best efforts) or “unexcused” reasons. Consistent with University policy, missed deadlines are excused and eligible for accommodations for the following reasons:

- 1) active participation in an intercollegiate event;
- 2) observance of religious holidays,
- 3) military duty;
- 4) jury duty, or appearance in court or other government hearings;
- 5) student medical conditions that limit time or ability to engage with the course material;
- 6) birth or adoption of child;
- 7) attendance at an academic and/or professional conference;
- 8) medical or professional appointments (e.g., job interviews);
- 9) medical conditions of a loved one if the student is serving as a caretaker;
- 10) funerals or memorial services; and
- 11) previously scheduled family celebrations (e.g., weddings, etc.).

As you might guess, unexcused reasons are things like forgetting or mixing up deadlines, failure to properly upload the assignment on Blackboard, leaving campus early for the weekend, etc. Ideally, documentation should be provided and is easily available for most of the reasons listed above, but if documentation is not available, we can discuss that. In general, if you are unsure whether you are eligible for an accommodation or need to provide documentation, just ask! Academic life continues to be strange and challenging, and we all know that the pandemic can have both physical AND psychological impacts on a person. Please reach out if you are struggling.

Blackboard Access

The course Blackboard website is essential to your success. It is the student's responsibility to visit Blackboard regularly and stay up to date with the material posted in this forum. Blackboard will be used in the following ways:

- 1) Grades:** All grades will be posted in the Blackboard Gradebook in a timely manner. For security reasons, I only discuss grades over email if the student initiates that conversation and uses their GVSU email account.
- 2) Assignments/Assessments:** Assignments will be posted in corresponding folders in the Assignments section of BB. These folders will also have a place to upload completed assignments (as Word or PDF documents).

3) Announcements: All major announcements and reminders will be posted on Blackboard. Announcements posted on Blackboard are also sent to students via email.

Classroom Conduct

Please be kind, compassionate, and understanding. We are all capable of conducting ourselves in a civil and respectable manner. In the spirit of academic discourse, you are encouraged to comment, question, and critique ideas from your professor or classmates, but you should not attack an individual or otherwise express disrespect. Think about what you want to say, edit if necessary, then speak (or type). Similarly, please be mindful of how your behavior may impact others, and limit distracting behavior (e.g., side conversations in class, eating, using your computer for things other than taking notes). Cell phones should be silenced in some way during class unless the class session activities require cell phone use or there is an urgent matter that requires you to be available via phone (in which case, let your professor know!). Meals should be eaten before or after class, not during. Let's maintain the social contract of mutual respect. Disrespectful or distracting students will be called out and warned; persistent issues can result in grade deductions.

Diversity Statement

In recognition and affirmation of the worth and dignity of all persons, the instructor of this course is dedicated to upholding the values of diversity and inclusion and to minimizing disparities in access to learning. All students who are willing to learn are equally welcome without regard to age, race, ethnicity, birthplace, sex, gender identity, disability, sexual orientation or identity, socioeconomic status, political party or beliefs, or other group affiliation or personal characteristics. All students are likewise expected to accord each other the same level of respect, bearing in mind that becoming more respectful and inclusive is a journey rather than a destination. We will all have stumbling points along the way, including the instructor, and these are often valuable learning opportunities. If I ever say or do anything insensitive in this course, I sincerely welcome students to call me out or communicate their discomfort to me in person after class, during office hours, by email, or anonymously.

Accommodations for Students with Disabilities

If you have special needs because of a learning, physical, or other disability, please contact your professor as well as Disability Support Resources (DSR) at (616) 331-2490 for assistance as soon as possible. Even if you have already documented your disability with DSR, please connect with your faculty member to discuss your specific needs. Furthermore, if you have a disability and think you will need assistance evacuating the classroom and/or building in an emergency during in-person meetings, please make your professor aware so that the university can develop a plan to assist you. You may also access resources at <http://www.gvsu.edu/dsr>. The university is eager to work with you to meet your learning goals. All discussions related to disabilities will remain confidential.

Statement on Academic Dishonesty

The following is adapted from the Student Code, Sections 223.00 and 223.01: The principles of truth and honesty are recognized as fundamental to a community of teachers and scholars. This means that all academic work will be done by the student to whom it is assigned without unauthorized aid of any kind.

- a. No student shall knowingly procure, provide or accept any materials which contain questions or answers to any examination or assignment.
- b. No student shall complete, in part or in total, any examination or assignment for another person.
- c. No student shall allow any examination or assignment to be completed, in part or in total, by another person.
- d. No student shall submit work that has been previously graded, or is being submitted concurrently to more than one course, without specific authorization from the instructor(s) of the class(es) to which the student wishes to submit it.
- e. No student shall knowingly plagiarize or copy the work of another person and submit it as his/her own. Offering the work of someone else as one's own is plagiarism. Any ideas or materials taken from another source for either written or oral presentation must be fully acknowledged. The language or ideas taken from another may range from isolated formulas, sentences, or paragraphs, to entire articles copied from the internet, books, periodicals, speeches, or from the writings of other students. The offering of materials assembled or collected by others in the form of projects or collections without acknowledgement also is considered plagiarism. In short, any student who fails to give credit in written or oral work for the ideas or materials that have been taken from another is guilty of plagiarism.

Students can (and are encouraged to) study together, but all academic work should be the sole work of the individual student, unless otherwise stated. Also, students should strive to avoid the *appearance* of dishonesty; these are behaviors associated with academic dishonesty (i.e., checking phone during an exam, completing exams together) that raise concerns that you may be potentially dishonest in your work. Any violation of academic integrity, even on a small scale, can result in a failing grade in the course. The University is implementing a new oversight process for cases of academic dishonesty – this process requires all professors to report all cases to the Office of Student Conduct and Conflict Resolution, which then investigates each case and makes a determination. Doesn't this sound like an anxiety-provoking time suck? Just don't cheat.

Artificial Intelligence (AI) Statement

AI-based assistance, such as ChatGPT and Copilot, is treated the same way collaboration with other people is treated; you are welcome to talk about your ideas and work with other people, as well as with AI-based assistants.

However, all work you submit **must be your own**. You should never include in your assignment(s) anything that was not written directly by you without proper citation (including quotation marks and in-line citation for direct quotes).

Including anything you did not write in your assignment without proper citation will be treated as an academic misconduct case. If you are unsure where the line is between collaborating with AI and copying from AI, the following is recommended:

1. Never hit "Copy" within your conversation with an AI assistant. You can copy your own work into your conversation, but do not copy anything from the conversation back into your assignment(s). Instead, use your interaction with the AI assistant as a learning experience, then let your assignment(s) reflect your improved understanding.

2. Do not have your assignment(s) and the AI agent open at the same time. Similar to above, use your conversation with the AI assistant as a learning experience, then close the interaction down, open your assignment(s), and let your assignment(s) reflect your revised knowledge. This includes avoiding using AI directly integrated into your composition environment: just as you should not let a classmate write content directly into your submission(s), so also avoid using tools that directly add content to your submission(s).

Fred Meijer Center for Writing

Program Information: <https://www.gvsu.edu/wc>

Appointment Scheduling: <https://www.gvsu.edu/bookit/>

Contact: virtualwc@mail.gvsu.edu – (616) 331-2922

Main Location: Lake Ontario Hall, Room 120 (Allendale)

Satellite Locations: Mary Idema Pwe Knowledge Market (1st floor) and Steelcase Knowledge Market (Devos Building A)

Online: Virtual writing support is available during all hours of operation for both drop-ins and scheduled appointments. Email support is also available (provided within 72 hours of submission).

The Fred Meijer Center for Writing provides writing assistance to all GVSU students, on any type of project and at any stage of the process. The Writing Center employs both undergraduate and graduate writing consultants from across majors and disciplines. Consultants are trained to help writers brainstorm, organize, or develop their ideas; and they can help writers edit their own work and document sources correctly. The Center's services are FREE, and students can work with an idea, assignment prompt, or draft of their paper.

Writing Center services are available in-person and online for both drop-ins and scheduled appointments. In-person support is available at our physical locations, however hours vary by location so please check [Book It](#) and our program website for up-to-date information – www.gvsu.edu/wc. Online support and appointment scheduling can be accessed via Book It (<https://www.gvsu.edu/bookit/>) where students can virtually drop-in and/or schedule an online or in-person appointment. Both appointments and drop-ins are available during all service hours: (M-Th 9am-11pm, F 9am-3pm, Sun 2-11pm).

Psych Friends Resource

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, 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

Course Schedule

*** This schedule (including assigned readings) is subject to change. Students are responsible for any changes announced in class or on Blackboard. ***

Unit 1: Wrangling & Exploring Data

WEEK 1 (01/07 & 01/09):

- a. Introductions and Course Overview
 - b. Download R Environment
 - c. Basics of R Environment
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WEEK 2 (01/14—CLASS CANCELED & 01/16):

- a. Basics of R Environment (cont.)
 - b. (if time) – Review of Key Concepts
 - c. (if time) – Importing and Interacting with Data
-

WEEK 3 (01/21 & 01/23):

- a. Importing and Interacting with Data
 - b. Creating a Codebook
-

WEEK 4 (01/28 & 01/30):

**** *Worksheet 1 due by 11:59pm on Tuesday (01/28)***

- a. Measurement
- b. Describing and Visualizing Frequency Claims
- c. Writing Method and Results Sections

Unit 2: NHST, Association Claims, & Probability

WEEK 5 (02/04 & 02/06):

**** *Worksheet 2 due by 11:59pm on Tuesday (02/04)***

- a. NHST: Hypotheses and p -values
- b. Tests of Association: Chi-Square

**** *Quiz 1 due by 11:59pm on Friday (02/07)***

WEEK 6 (02/11 & 02/13):

**** *Worksheet 3 due by 11:59pm on Tuesday (02/11)***

- a. Tests of Association: Correlation
 - b. Effect Sizes
-

WEEK 7 (02/18 & 02/20):

**** *Worksheet 4 due by 11:59pm on Tuesday (02/18)***

- a. Probability and NHST
- b. Confidence Intervals (CIs)

**** *Lab Report 1 due by 11:59pm on Friday (02/21)***

Unit 3: Methods of Testing Causal Claims & Group Differences

WEEK 8 (02/25 & 02/27):

**** *Worksheet 5 due by 11:59pm on Tuesday (02/25)***

- a. One-sample t -test
- b. Paired-samples t -test
- c. Statistical Power

**** *Quiz 2 due by 11:59pm on Friday (02/28)***

WEEK 9 (03/04 & 03/06; NO CLASSES – SPRING BREAK!)

WEEK 10 (03/11 & 03/13):

- a. One-sample t -test (cont., as needed)
- b. Paired-samples t -test (cont., as needed)
- c. Statistical Power (cont., as needed)

**** *Worksheet 6 due by 11:59pm on Friday (03/14)***

WEEK 11 (03/18 & 03/20):

- a. Independent-samples t -test

**** *Worksheet 7 due by 11:59pm on Friday (02/21)***

WEEK 12 (03/25 & 03/27):

- a. One-way ANOVA
- b. (if time) Factorial ANOVA

**** *Lab Report 2 due by 11:59pm on Friday (03/28)***

**** *Quiz 3 due by 11:59pm on Sunday (03/30)***

WEEK 13 (04/01 & 04/03):

- a. Factorial ANOVA
- b. (if time) Simple Regression

**** *Worksheet 8 due by 11:59pm on Friday (04/04)***

WEEK 14 (04/08 & 04/10):

- a. Simple Regression
- b. (if time) Reliability and Validity for Measured Variables
- c. (if time) Data Visualization

**** *Worksheet 9 due by 11:59pm on Friday (04/11)***

WEEK 15 (04/15 & 04/17):

- a. Reliability and Validity for Measured Variables
- b. Data Visualization
- c. Decisions, decisions, decisions...

**** *Worksheet 10 due by 11:59pm on Friday (04/18)***

**** *Quiz 4 due by 11:59pm on Sunday (04/20)***

**** *Lab Report 3 due by 11:59pm on Friday (04/25)***

Lab Practical – Only time for Q&A with Professor Salander (during Final Exams)

Section 01: Tuesday 04/22 (in regular classroom), 12-1:50pm

Section 02: Thursday 04/24 (in regular classroom), 2-3:50pm