**Psychology 295**

**Data Analysis and Psychological Research (3 credits)**

# **Fall 2025**

When: Monday & Wednesday, 5:00 pm – 6:20pm

Where: Psychology Bldg 118

Professor: Dr. Devin McAuley

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Office: Psychology 282B

Office Hours: Wednesday, 12pm – 1 pm or by appointment, Psychology 282B

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Required Textbook

Frederick J Gravetter, Larry B. Wallnau, Lori-Ann B. Forzano, James E. Witnauer (2021). *Essentials of Statistics for the Behavioral Sciences (10th Ed.)*. Wadsworth, Cengage Learning (softcover or eTextbook).

## **Course Description:** This course is an introduction to the principles of measurement and quantitative data analysis in psychology, including measures of typicality, individual differences, correlational methods, and tests of significance. Upon successfully completing this course, you will have (a) a good understanding of descriptive statistics, (b) a basic understanding of probability theory, and (c) a basic level understanding of the principles of research design and inferential statistics. By the end of the course, you should be able to summarize data, do simple statistical tests, better understand statistical aspects of news and research reports, and be in a good position to take courses that are more advanced. In addition, you should better understand some of the errors that people usually make in reasoning about uncertainty and be in a position to avoid them.

**General Expectations:** You are expected to attend each lecture, actively participate in class discussions and exercises, and ask questions when you do not understand something. The material for the course consists of the lectures and the associated chapters in the course textbook intended to supplement the material presented in class. The lectures will sometimes deviate from the material included in the book and sometimes include material, methods and techniques that are not included in the textbook. You are responsible for the material presented in the lectures whether or not you are present in class.

**Cell Phone and Laptop Policy:** No non-class use of cell phones is permitted during the lecture, and all cell phone ringers must be turned off (without exception). Laptop or tablet use is for note taking and online in-class exercises only. Violation of the cell phone or laptop policy is grounds for being asked to leave the class.

**Exams:** There will be three exams covering the course material (2 midterm exams and the final). Each exam is worth 100 points, with exams spaced roughly 1 month apart (see exam schedule below). You are required to bring a basic calculator and a Number 2 pencil to the exams. The material in this course is by nature cumulative, and so in that sense exams will be cumulative. You can anticipate, however, that each exam will tend to focus on the material most recently covered in class and on the assigned textbook readings and homework. Exams cannot be rescheduled, except in very rare circumstances with a documented serious illness or family emergency.

**Homework:** Homework will be assigned, in general, every week (sometimes every two weeks) and then due the following week (the homework schedule with due dates is included below). Homework is to be turned in electronically on D2L to the associated Homework Assignment Dropbox. You are responsible for knowing what the assignment is and when it is due. Each homework assignment is worth 15 points. One of the problems will be graded for accuracy and the rest will be graded for completion. **Homework is considered on time if it is submitted by 11:59pm on the day it is due; homework is considered late, but still accepted, if it is received up to 24 hours after the due date/time.** Late - but still accepted homework receives a maximum of 12 points. **Any homework received after the 24-hour grace period receives 0 points.** Your homework grade for the semester will consist of the point total for the best 10 out of 11 scores. **All homework assignments will primarily be drawn from the 10th edition of the GWFW textbook, so please make sure that you have the correct edition of the book. (We will also have homework problems uploaded to D2l)**

**In-Class Exercises:** There will be occasional in-class exercises that will be turned in at the end of class. These are worth a total of 25 points and will be graded based on completion. You must complete 5 of these by the end of the semester to receive the full 25 points. If you complete more than 5, each additional completed in-class exercise will count for 1 point of extra credit. Points are as follows for less than 5 completed (4 completed = 20 pts, 3 completed = 15 pts, 2 completed = 10 pts, 1 completed = 5 pts, 0 completed = 0 pts).

**Research Participation:** Because the content of this class applies to research in psychology, a component of the course is to complete 5 hours of research experience credit by participating in psychology experiments conducted here at MSU. Each hour of research experience credit is worth 5 points toward your final grade (25 points total). I am notified at the end of the semester via the experimental sign-up computer system about how many credits you earned.

Instructions for research participation are included in a separate document on the course D2L site. **Participating in these experiments is completely voluntary.** Consequently, if you decide not to participate in experiments for research participation credit you can complete an alternate assignment. Instructions for fulfilling research participation requirement are on D2L. Please contact the TA with any questions.

Numerical Grade Percentage Points

4.0 ≥90 ≥450

3.5 85 – 90 425 – 450

3.0 80 – 85 400 – 425

2.5 75 – 80 375 – 400

2.0 70 – 75 350 – 375

1.5 65 – 70 325 – 350

1.0 60 – 65 300 – 325

0.0 0 – 60 0 – 300

Assessment

Homework 150 points (10 @ 15 points each; best 10 out of 11 scores)

Exam #1 100 points

Exam #2 100 points

Final Exam 100 points

In-class Exercises 25 points (5 required over semester to receive 25 points)

Research Participation 25 points (5 hours @ 5 points each)

Exam schedule

Exam #1 Wednesday, September 24

Exam #2 Monday, November 3

Final Exam Friday, December 12, 10:00AM-12:00PM, Psychology Bldg 118

Homework Due

HW #1 Wednesday, September 3

HW #2 Wednesday, September 10

HW #3 Wednesday, September 17

HW #4 Wednesday, October 1

HW #5 Wednesday, October 8

HW #6 Wednesday, October 15

HW #7 Wednesday, October 29

HW #8 Wednesday, November 12

HW #9 Wednesday, November 19

HW #10 Wednesday, November 26

HW #11 Wednesday, December 3

*Dates Topic\* Reading\_\_\_*

#### Week 1

M, Aug 25 Introduction to Statistics GWFW, Ch1

W, Aug 27 Frequency Distributions GWFW, Ch2

#### Week 2

#### M, Sept 1 No Class – Labor day

**W, Sept 3** Measures of Central Tendency GWFW, Ch3

#### Week 3

M, Sept 8 Measures of Variability GWFW, Ch4

**W, Sept 10** Z-scores GWFW, Ch5

#### Week 4

M, Sept 15 Z-scores, Probability and Normal Distribution GWFW,Ch5/6

**W, Sept 17** Z-scores, Probability and Normal Distribution GWFW, Ch6

#### Week 5

M, Sept 22 Exam #1 Review

W, Sept 24 **Exam #1**

#### **Week 6**

M, Sept 29 Sampling Distributions

**W, Oct 1** Sampling Distributions GWFW, Ch7

#### Week 7

M, Oct 6 Introduction to Hypothesis Testing GWFW, Ch8

**W, Oct 8** Introduction to Hypothesis Testing GWFW, Ch8

#### Week 8

M, Oct 13 Single Sample t-Test GWFW, Ch9

**W, Oct 15** The t-Test for Two Related Samples GWFW, Ch11

#### Week 9

M, Oct 20 No class – Fall break

W, Oct 22 The t-Test for Two Independent Samples GWFW, Ch10

#### Week 10

M, Oct 27 The t-Test for Two Independent Samples GWFW, Ch10

**W, Oct 29** Exam #2 Review

#### **Week 11**

M, Nov 3 **Exam #2**

W, Nov 5 Analysis of Variance GWFW, Ch12

#### **Week 12**

M, Nov 10 Analysis of Variance GWFW, Ch12

**W, Nov 12** Analysis of Variance GWFW, Ch13

#### Week 13

M, Nov 17 Correlation and RegressionGWFW, Ch14

**W, Nov 19** Correlation and RegressionGWFW, Ch14

#### Week 14

M, Nov 24 The Chi-Square Statistic GWFW, Ch15

**W, Nov 26** No class – Thanksgiving break

#### Week 15

M, Dec 1 The Chi-Square Statistic GWFW, Ch15

**W, Dec 3** Final Exam Review

\* Subject to change depending on the pace of the course/needs of the class.

**Additional Course Rules and Information**

**Academic Honesty:** All forms of cheating are unacceptable. The Spartan Code of Honor states, "As a Spartan, I will strive to uphold values of the highest ethical standard. I will practice honesty in my work, foster honesty in my peers, and take pride in knowing that honor is worth more than grades. I will carry these values beyond my time as a student at Michigan State University, continuing the endeavor to build personal integrity in all that I do." In addition, [Article 2.III.B.2 of the Student Rights and Responsibilities](https://spartanexperiences.msu.edu/about/handbook/student-rights-responsibilities/article-two-academic-rights-and-responsibilities.html) states that "The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards." The Psychology Department adheres to the policies on academic honesty as specified in [General Student Regulations 1.0, Protection of Scholarship and Grades](https://spartanexperiences.msu.edu/about/handbook/regulations/general-student-regulations.html); the [all-University Policy on Integrity of Scholarship and Grades](https://spartanexperiences.msu.edu/about/handbook/regulations/student-group-regs-rulings-policies-ordinances/integrity-of-scholarship-and-grades.html); and [Ordinance 17.00, Examinations](https://undocumented.msu.edu/bylaws-ordinances-policies/ordinances/ordinance-17.00.html). Make sure you are familiar with MSU definitions regarding academic dishonesty. Ignorance is not an excuse.

**Policy on Religious Observations:** If you anticipate being unable to complete a graded portion of the course due to a major religious observance, please provide notice of the date(s) to Dr. McAuley, via email, by 9/5/25.

**Note taking and recording:** As members of a learning community, students are expected to respect the intellectual property of course instructors. All course materials presented to students are the copyrighted property of the course instructor and are subject to the following conditions of use:

* Students may not post recordings or other course materials online or distribute them to anyone not enrolled in the class without the advance written permission of the course instructor and, if applicable, any students whose voice or image is included in the recordings.
* Commercialization of lecture notes and university-provided course materials is not permitted in this course.
* Any student violating the conditions described above may face academic disciplinary sanctions, including receiving a penalty grade in the course.

**Accommodations for Students with Disabilities:** Michigan State University is committed to providing equal opportunity for participation in all programs, services, and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the [web](http://rcpd.msu.edu/). Once your eligibility for an accommodation has been determined, you will be issued an accommodation form (sometimes called a VISA). **Please present this form to Dr. McAuley at the start of the semester and/or one week prior to the accommodation date so the proper accommodations can be made.**

**Academic Assistance:** This is a university, and you are expected to produce college level work. If you have any trouble with the material covered in class, please make an appointment to speak with Dr. McAuley, or one of the course assistants. Additionally, the university has resources to assist students, such as the Campus Tutorial Center, the Campus Writing Center, Adult Student Services, and more. A lot is expected of you, but the university wants to help you to produce your best work.

**Limits to Confidentiality:** Please be aware that class materials are generally considered confidential pursuant to the University’s student policies. However, all University employees, including instructors, cannot maintain confidentiality when it conflicts with their responsibility to report certain issues based on external legal obligations or health and safety considerations of MSU community members and others. Dr. McAuley and the Graduate TA for this course must report the following information (including your name and the details of the disclosure) to the Office of Institutional Equity (and the MSU Police Department) if you share it with them:

* **Suspected child abuse/neglect, even if this maltreatment happened when you were a child,**
* **Allegations of sexual assault or sexual harassment when they involve MSU students, faculty or staff, and**
* **Credible threats of harm to oneself or to others.**

The Office of Inclusion will reach out to you via a confidential email, to see if you would like to pursue legal action and to provide you with additional university resources. You have the right to choose whether you would like to utilize any of these services or even respond to the university’s email. If you would like to talk about these events in a more confidential setting, you are encouraged to make an appointment with the [MSU Counseling Center](https://caps.msu.edu/).

It is an MSU required mandate that Dr. McAuley and the Graduate TA for this course are required to follow as MSU employees. Given this, you should not disclose experiences of abuse or sexual violence related to MSU unless you are comfortable having this information shared with the Office of Institutional Equity. All are encouraged to use the resources listed below (not mandated university reporters) as they process their feelings and experiences in this course.

[MSU Safe Place](http://safeplace.msu.edu/)  [NRCDV](http://www.nrcdv.org/)  [NNEVD](http://www.nnedv.org/)  [NCDSV](http://www.ncdsv.org/)  [MCEDSV](http://www.mcedsv.org/)  [No More](http://nomore.org/)  [RAINN](https://rainn.org/)  [The Joyful Heart Foundation](http://www.joyfulheartfoundation.org/)  [Futures Without Violence](http://www.futureswithoutviolence.org/)

**Course Climate:** We are all working toward the same goals in this course! By building a strong learning community from the start, we will benefit.

* **Inclusive Environment:** MSU is committed to creating and maintaining an inclusive community in which students, faculty, and staff can work together in an atmosphere free from all forms of discrimination. The Office for Civil Rights and Title IX Education and Compliance (OCR) reviews concerns related to discrimination and harassment based on sex, gender, gender identity, race, national origin, religion, disability status, and any other protected categories under the [University Anti-Discrimination Policy](https://www.hr.msu.edu/policies-procedures/university-wide/ADP_policy.html) and [Policy on Relationship Violence and Sexual Misconduct](https://civilrights.msu.edu/policies/relationship-violence-and-sexual-misconduct-and-title-ix-policy.html). If you experience or witness acts of bias, discrimination, or harassment, please report these to [OCR](https://civilrights.msu.edu/).
* **Student-student interactions:** Part of being a strong group member is being a good listener, being motivating and empathetic, and providing constructive feedback.
* **Student-instructor interactions:** If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure that you are proactive in informing your TA or Dr. McAuley when difficulties arise. Building rapport and effective relationships = becoming an effective professional.
* **Lying:** Lying is an unacceptable behavior in both personal and professional relationships. Lying to get what you want is manipulative behavior and will not be tolerated in this course.
* **Disruptive Behavior:** [Article 2.III.B.4 of the Student Rights and Responsibilities](https://spartanexperiences.msu.edu/about/handbook/student-rights-responsibilities/article-two-academic-rights-and-responsibilities.html) at Michigan State University states: “The student’s behavior in the classroom shall be conducive to the teaching and learning process for all concerned.” [Article 2.III.B.10](https://spartanexperiences.msu.edu/about/handbook/student-rights-responsibilities/article-two-academic-rights-and-responsibilities.html) states that “The student and the faculty share the responsibility for maintaining professional relationships based on mutual trust and civility.” [General Student Regulation 5.02](https://spartanexperiences.msu.edu/about/handbook/regulations/general-student-regulations.html) states: “No student shall obstruct, disrupt, or interfere with the functions, services, or directives of the University, its offices, or its employees (e.g., classes, social, cultural, and athletic events, computing services, registration, housing and food services, governance meetings, and hearings).” Students whose conduct adversely affects the learning environment in this classroom may be subject to disciplinary action through the Student Judicial Affairs office.