

Psychology 295
Data Analysis and Psychological Research (3 credits)
Spring 2024

When: Tuesday & Thursday, 12:40pm – 2:00pm
Where: Ernst Bessey Hall 108

Professor: Dr. Devin McAuley
Email: dmcauley@msu.edu
Office: Psychology 282B
Office Hours: Thursday, 11 am – 12 pm

TA: Toni Smith
Email: smit3094@msu.edu
Office: Psychology 55
Office Hours: Tuesday, 11 am – 12 pm

UA: Gurlin Kaur
Email: kaurgur1@msu.edu

UA: Acacia Meyer
Email: meyeraca@msu.edu

UA: Derrek Montalvo
Email: montal30@msu.edu

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. You should be able to summarize data, do simple statistical tests, better understand statistical aspects of news and research reports, and be prepared for more advanced courses. 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.

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 (the exam schedule is shown 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 in 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, on a weekly basis, and 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. Homework will be graded for completion with answer key provided for you to check your work. **A homework is considered on time if it is submitted by 11:59pm on the day it is due.** On-time homework receives 15 points (if all problems completed). **A 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 10 points (if all problems completed). **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 GFWW textbook, so please make sure that you have the correct edition of the book.**

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 have completed 5 of these by the end of the semester to receive the full 25 points. If you complete more than 5, these will be counted as extra credit (points to be determined). If you complete less than 5, then you will lose 5 points for each one you are less than five completions (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 is strongly tied to research in psychology, a component of the course is to complete 5 hours of research experience credit by participating in psychology experiments being conducted here at MSU. Each hour of research experience credit is worth 5 points toward your final grade (25 points total). I will be notified at the end of the semester via the experimental sign-up computer system 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.

Cell Phone and Laptop Policy: No 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 only. Violation of the cell phone or laptop policy is grounds for being asked to leave the class.

<i>Dates</i>	<i>Topic*</i>	<i>Reading</i>
<u>Week 1</u>		
T, Jan 9	Introduction to Statistics	GFWF, Ch1
R, Jan 11	Introduction to Statistics	GFWF, Ch1
<u>Week 2</u>		
T, Jan 16	Frequency Distributions	GFWF, Ch2
R, Jan 18	Measures of Central Tendency	GFWF, Ch3
<u>Week 3</u>		
T, Jan 23	Measures of Variability	GFWF, Ch4
R, Jan 25	Z-scores	GFWF, Ch5
<u>Week 4</u>		
T, Jan 30	Z-scores, Probability and Normal Distribution	GFWF, Ch5/6
R, Feb 1	Z-scores, Probability and Normal Distribution	GFWF, Ch6
<u>Week 5</u>		
T, Feb 6	Exam #1 Review	
R, Feb 8	Exam #1	
<u>Week 6</u>		
T, Feb 13	No Class	
R, Feb 15	Sampling Distributions	GFWF, Ch7
<u>Week 7</u>		
T, Feb 20	Introduction to Hypothesis Testing	GFWF, Ch8
R, Feb 22	Introduction to Hypothesis Testing	GFWF, Ch8
<u>Week 8</u>		
T, Feb 27	Spring Break (No Class)	
R, Feb 29	Spring Break (No Class)	
<u>Week 9</u>		
T, Mar 5	Single Sample t-Test	GFWF, Ch9
R, Mar 7	The t-Test for Two Related Samples	GFWF, Ch11
<u>Week 10</u>		
T, Mar 12	The t-Test for Two Independent Samples	GFWF, Ch10
R, Mar 14	The t-Test for Two Independent Samples	GFWF, Ch10
<u>Week 11</u>		
T, Mar 19	Exam #2 Review	
R, Mar 21	Exam #2	
<u>Week 12</u>		
T, Mar 26	Analysis of Variance	GFWF, Ch12
R, Mar 28	Analysis of Variance	GFWF, Ch12

Week 13

T, April 2

R, April 4

Analysis of Variance
Correlation and Regression

GWFW, Ch13

GWFW, Ch14

Week 14

T, April 9

R, April 11

Correlation and Regression
The Chi-Square Statistic

GWFW, Ch14

GWFW, Ch15

Week 15

T, April 16

R, April 18

The Chi-Square Statistic
Final Exam Review

GWFW, Ch15

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

<u>Numerical Grade</u>	<u>Percentage</u>	<u>Points</u>
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	Thursday, February 8
Exam #2	Thursday, March 21
Final Exam	Wednesday, April 24, 10:00AM-12:00PM, Ernst Bessey Hall 108

<u>Homework</u>	<u>Due</u>
HW #1	Thursday, January 18
HW #2	Thursday, January 25
HW #3	Thursday, February 1
HW #4	Thursday, February 22
HW #5	Thursday, February 29
HW #6	Thursday, March 7
HW #7	Thursday, March 14
HW #8	Thursday, March 28
HW #9	Thursday, April 4
HW #10	Thursday, April 11
HW #11	Thursday, April 18

Additional Course Rules and Information

Academic Honesty: 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 ([SRR](#)) 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](#); [the all-University Policy on Integrity of Scholarship and Grades](#); and [Ordinance 17.00, Examinations](#).

Therefore, unless authorized by your instructor, you are expected to complete all course assignments, including homework, lab work, quizzes, tests and exams, without assistance from any source. You are expected to develop original work for this course; therefore, you may not submit course work you completed for another course to satisfy the requirements for this course. Also, you are not authorized to use the www.allmsu.com Web site to complete any course work in this course. Students who violate MSU academic integrity rules may receive a penalty grade, including a failing grade on the assignment or in the course. Contact your instructor if you are unsure about the appropriateness of your course work. (See also the [Academic Integrity webpage](#).)

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 of Institutional Equity (OIE) 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/rvsm.html>). If you experience or witness acts of bias, discrimination, or harassment, please report these to OIE: <http://oie.msu.edu/>.

Limits to Confidentiality: Essays, journals, and other materials submitted for this class are generally considered confidential pursuant to the University's student record policies. However, students should be aware that University employees, including instructors, may not be able to maintain confidentiality when it conflicts with their responsibility to report certain issues to protect the health and safety of MSU community members and others. As the instructor, I must report the following information to other University offices (including the MSU Police Department) if you share it with me:

- 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.

These reports may trigger contact from a campus official who will want to talk with you about the incident that you have shared. In almost all cases, it will be your decision whether you wish to speak with that individual. 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](#).

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 at rcpd.msu.edu. Once your eligibility for an accommodation has been determined, you will be issued a Verified Individual Services Accommodation ("VISA") form. Please present this form to me at the start of the term and/or two weeks prior to the accommodation date (test, project, etc.). Requests received after this date may not be honored. If you require testing accommodations (e.g., additional time.) you must contact me and present your VISA *at least two weeks before the exam date* to arrange the accommodation.

Disruptive Behavior: Article 2.III.B.4 of the [Student Rights and Responsibilities \(SRR\)](#) for students 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 of the [SRR](#) 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](#) states: "No student shall . . . interfere with the functions and services of the University (for example, but not limited to, classes . . .) such that the function or service is obstructed or disrupted. Students whose conduct adversely affects the learning environment in this classroom may be subject to disciplinary action."