



Course Syllabus: NURS/RADS/RESP/SOWK 4123 Data Analysis

Robert D. & Carol Gunn College of Health Science & Human Services

Section X20

Spring 2026

Contact Information

Instructor: Dr. Ludie Tyran, EdD, RT(R)(M)(ARRT)

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Office hours: Monday 1:00 PM – 3:00 PM

Wednesday 1:00 PM – 3:00 PM

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Course Description

The focus of this course is to provide an interdisciplinary data analysis course specifically for health sciences and human services majors using techniques and data structures relevant to clinical investigations. General topics include choosing correct procedures and using statistics to understand clinical data. Specific topics include, but are not limited to, basic statistics, measures of correlation and difference, hypothesis testing and bias, confidence intervals, reliability and validity, significance, power analysis, levels of evidence, sample size and distribution, assessing effects of treatment, quality improvement, relative risk and relative risk reduction, and odds ratio.

Course Objectives

Upon completion of this course, the student will:

- Develop a broad-based understanding of descriptive statistics and selected statistical techniques
- Choose and make the appropriate graph/table for a set of data Describe the characteristics of the normal distribution
- Identify different levels of measurement.
- Explain Type I and Type II error and the consequences of each error
- Differentiate independent and dependent samples
- Explain the effect of alpha, the number of tails, and sample size on the critical value of t.

- Determine the power of an independent-samples t-test and the sample size necessary to have an independent-samples t-test with sufficient power.
- Interpret the results from a chi-square test for contingency tables.
- Choose an appropriate statistical test to use in analyzing a data set
- Evaluate diagnostic and screening tests appropriately.
- Understand the factors that form the basis for hypothesis and statistical testing.
- Apply statistical outcomes to processes of quality improvement.
- Use statistical outcomes to evaluate the effects of treatment.

Textbook & Instructional Materials

Required Textbook: Heavey, E. (2022). *Statistics for nursing: A practical approach* (4th ed.). Jones & Bartlett Learning. ISBN: 9781284255003

Study Hours and Tutoring Assistance

By appointment, I am happy to set up a face-to-face, telephone, or Zoom meeting.

Student Handbook

Refer to: [Student Handbook](#)

Academic Misconduct Policy & Procedures

Academic Dishonesty: Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted techniques of crediting, or the submission for credit of work not the individual's to whom credit is given). Additional guidelines on procedures in these matters may be found in the Office of Student Conduct. [Office of Student Conduct](#)

Use of Artificial Writing or Presentation Generators

The use of any artificial writing or presentation generators (ex: Chat GPT) is strictly prohibited. The use of artificial writing or presentation generators can and will be deemed a violation of the university's honor system. Any or all parts of a written assignment identified as having elements of writing attributed to an artificial writing source will automatically receive a zero (0) for a grade.

Students will not be allowed to make up those assignments. This course uses software that detects AI generators. For more policy information regarding cheating and plagiarism, see the Honor System section in this syllabus.

Moffett Library

Moffett Library provides resources and services to support student's studies and assignments, including books, peer-reviewed journals, databases, and multimedia materials accessible both on campus and remotely. The library offers media equipment checkout, reservable study rooms, and research assistance

from librarians to help students effectively find, evaluate, and use information. Get started on this [Moffett Library webpage](#) to explore these resources and learn how to best utilize the library.

Grading

The course grade is based on the following:

Table 1: Points allocated to each assignment

Assignments	Percentage
Quizzes	30%
Discussion Board	45%
Comprehensive Final Exam	25%
Total Points	100%

Table 2: Total points for final grade.

Grade	Points
A	90 to 100
B	80 to 89
C	70 to 79
D	60 to 69
F	Less than 60

Independent Reading Assignments

Unit 1: Chapter 1

Unit 2: Chapter 2

Unit 3: Chapter 3

Unit 4: Chapters 5, 6

Unit 5: Chapters 7 & 9

Unit 6: Chapters 11 & 13

Final: Review all chapters covered in the course

Supplemental note outlines and chapter review questions/videos are provided within D2L to help guide the reading assignments.

Discussion Board

The discussion board is a mandatory component in this course. All initial posts are due by Sunday at midnight, the first week the unit is open. Response posts are due by the due date listed for each unit. Assignments are made specifically for this board. Students are expected to complete the calculations and write formally (no shorthand or text messaging abbreviations) and use APA format and referencing when appropriate. Thoughtful responses, constructive critique of fellow students, and meaningful participation are expected. Keep in mind the discussion board is a formal assignment and part of your final grade. Late discussion

board posts are not accepted beyond the deadline. A zero will be recorded for assignments not submitted or meeting the final deadline. All assignments must be written at the baccalaureate level and will be graded for accuracy, completeness, quality, spelling, grammar, punctuation, and integrity. Review the grading rubric for each discussion board assignment.

Quizzes

In each of the units, a quiz will be administered within D2L. These quizzes are open book, open notebook, but you will only have one hour to complete them, and you must be prepared, as there will not be enough time to research every answer. Quizzes must be completed prior to the expiration dates listed in this syllabus. Quiz grades and answers will be released after the deadline of each quiz. Specific questions regarding the quizzes may be addressed to the instructor. Quizzes will not be made up if missed, and zero (0) will be recorded. No extra credit activities are available.

If students have technical difficulties during a quiz, they should use the "Report a Problem" link located on the top toolbar within D2L to contact the MSU distance education Support Staff and send an email to the course instructor explaining what happened.

Final Exam

The final examination is comprehensive and consists of 50 randomized multiple-choice questions, with 5 questions from each chapter. You will have 120 minutes to complete the final examination. You will be required to use LockDown Browser and Monitor (Webcam). Make sure you have the most recent version of the LockDown Browser on your computer. Chromebook Laptops are NOT compatible with the LockDown Browser, so you will need to locate a different device for the final exam. The Final Examination can be taken any time between the exam open dates that are listed in the syllabus. You must complete all module tests prior to taking the final examination. You will need to show your ID in Respondus before it will allow you to take the exam (so have your photo ID close).

10 points will be deducted from your exam grade if you do not do a thorough room scan, and 5 points will be deducted for each time you leave the room while testing. A thorough room scan includes the area around you and behind the computer. You are expected to take this exam alone without anyone in the room.

Extra Credit

Extra credit assignments are not accepted in this course.

Late Work

Anything not completed and handed in on time will be a zero for that specific grade. All assignments must be completed by 11:59 pm of the due date. Late work will not be accepted in this course.

Make Up Work

Students are not allowed to submitted make up work in this course. All assignment must be submitted on time.

Assignment Submissions

All assignment submissions made by students in D2L are considered final submissions. It is the student's responsibility to ensure that the correct and complete file has been uploaded. If a student submits an incorrect document, an incomplete draft, or any unintended version, the assignment will be graded as submitted. Students are strongly encouraged to double-check their upload before finalizing the submission. Additionally, Apple file formats, such as .pages or Keynote files, will not be accepted. All submissions must be uploaded in Microsoft Office formats—such as .doc, .docx, .ppt, or .xlsx—or as otherwise specified in the assignment instructions.

Important Dates

- Last day for term schedule changes: January 23
- Deadline to file for graduation: February 16
- Last Day to drop with a grade of "W" 4:00 PM April 29

Refer to: [Drops, Withdrawals & Void](#)

Desire-to-Learn (D2L)

Extensive use of the MSU D2L program is a part of this course. Each student is expected to be familiar with this program as it provides a primary source of communication regarding assignments, examination materials, and general course information. You can log into [D2L](#) through the MSU Homepage. If you experience difficulties, please contact the technicians listed for the program or contact your instructor.

Attendance

Students are expected to log into D2L regularly and submit assignments by the due date. If the student is not doing this the faculty will give the student a verbal or written warning prior to being dropped from the class. The faculty records of students not logging into D2L will stand as evidence of absences. A student with excessive absences may be dropped from a course by the instructor. Any individual faculty member or college has the authority to establish an attendance policy, providing the policy is in accordance with the General University Policies.

Online Computer Requirements

Taking an online class requires you to have access to a computer (with Internet access) to complete and upload your assignments. It is your responsibility to have (or have access to) a working computer in this class. ***Assignments and tests are due by the due date, and personal computer technical difficulties will not be considered reason for the instructor to allow students extra time to submit assignments, tests, or discussion postings.** Computers are available on campus in various areas of the buildings as well as the Academic Success Center. ***Your computer being down is not an excuse for missing a deadline!!** There are many places to access your class! Our online classes can be accessed from any computer in the world which is connected to the internet. Contact your instructor immediately upon having computer trouble. If you have technical difficulties in the course, there is also a student helpdesk available to you. The college cannot work directly on student computers due to both liability and resource limitations however they are able to help you get connected to our online services. For help, log into [D2L](#).

Change of Schedule

A student dropping a course (but not withdrawing from the University) within the first 12 class days of a regular semester or the first four class days of a summer semester is eligible for a 100% refund of applicable tuition and fees. Dates are published in the Schedule of Classes each semester.

Refund and Repayment Policy

A student who withdraws or is administratively withdrawn from Midwestern State University (MSU) may be eligible to receive a refund for all or a portion of the tuition, fees and room/board charges that were paid to MSU for the semester. **HOWEVER**, if the student received financial aid (federal/state/institutional grants, loans and/or scholarships), all or a portion of the refund may be returned to the financial aid programs. As described below, two formulas (federal and state) exists in determining the amount of the refund. (Examples of each refund calculation will be made available upon request).

Services for Students with Disabilities

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Student Wellness Center, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to [Disability Support Services](#).

College Policies

Campus Carry Rules/Policies

Refer to: [Campus Carry Rules and Policies](#)

Smoking/Tobacco Policy

College policy strictly prohibits the use of tobacco products in any building owned or operated by WATC. Adult students may smoke only in the outside designated-smoking areas at each location.

Alcohol and Drug Policy

To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State are informed that strictly enforced policies are in place which prohibits the unlawful possession, use or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state and federal law for any offenses involving illicit drugs on University property or at University-sponsored activities.

Campus Carry

Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes has prohibited. The new Constitutional Carry law does not change this process. Concealed carry still requires a License to Carry permit, and openly carrying handguns is not allowed on college campuses. For more information, visit [Campus Carry](#).

Active Shooter

The safety and security of our campus is the responsibility of everyone in our community. Each of us has an obligation to be prepared to appropriately respond to threats to our campus, such as an active aggressor. Please review the information provided by MSU Police Department regarding the options and strategies we can all use to stay safe during difficult situations. For more information, visit [MSUReady – Active Shooter](#). Students are encouraged to watch the video entitled "Run. Hide. Fight." which may be electronically accessed via the University police department's webpage: ["Run. Hide. Fight."](#)

Grade Appeal Process

Students who wish to appeal a grade should consult the Midwestern State University [MSU Catalog](#)

Administrative Process:

Unresolved issues related to this course should be first addressed between the student and the course instructor. If there is no resolution, students must follow this sequence:

1. Department Chair: Dr. Lynette Watts (940) 397.4833
2. College Dean: Dr. Jeff Killion (940) 397.4594
3. Dean of Students: Matthew Park (940) 397.7500

***Notice:** Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

Course Schedule:

Below, you will find the course schedule. The same content will be in each D2L module. I suggest you print a copy of the course schedule to help you stay organized and submit your assignments by the deadlines. Please note that changes in the course syllabus, assignments, and schedule may be made at the discretion of the professor. Assignment specifics are outlined in each module in D2L.

Module	Assignments	Due Date
Unit 1	Unit 1 Quiz Unit 1 Discussion	Quiz Due Feb. 1 Initial Discussion post due Jan. 25 , response posts due Feb. 1
Unit 2	Unit 2 Quiz Unit 2 Discussion	Quiz Due Feb. 15 Initial Discussion post due Feb. 8 , response posts due Feb. 15
Unit 3	Unit 3 Quiz Unit 3 Discussion	Quiz due Mar. 1 Initial Discussion post due Feb. 22 , response posts due Mar. 1
Spring Break	March 9 to 15	
Unit 4	Unit 4 Quiz No Discussion in this unit	Quiz due Mar. 22
Unit 5	Unit 5 Quiz Unit 5 Discussion	Quiz due April 12 Initial Discussion post due, April 5 , response posts due April 12
Unit 6	Unit 6 Quiz Unit 6 Discussion	Quiz due May 3 Initial Discussion post due, April 26 , response post due May 3
Final Exam	Opens May 4	Closes May 8 at midnight

***Important note:** All assignments are due by 11:59 PM CST on the indicated due date