

# Syllabus for DATA 109, General Statistics

Fall 2024

Instructor: Qinghong Zhang

Office: 2218 Jamrich Hall

Email: [qzhang@nmu.edu](mailto:qzhang@nmu.edu)

Tel: 227-1511

Class Time: DATA 109-50: online

Office Hours: 9:00-11:00, MWR and by appointment.

## Course Description (from NMU Bulletin):

- Applies toward the quantitative reasoning and analysis (quar) general education requirement
- Applies toward the mathematics competency university requirement (math) general education requirement.

Data and distributions, discrete and continuous probability models, central limit theorem, hypothesis testing, confidence intervals, regression and correlation, ANOVA, and categorical data.

**Student Learning Outcomes:** Upon successful completion of this course, a student should be able to:

- classify categorical and quantitative variables
- determine sample spaces and find the probability of an event
- compute a confidence interval for a mean and a proportion
- describe the definitions used in tests of hypothesis and solve a test of hypothesis problem
- compute the correlation coefficient and the equation of the regression line
- use software R to solve various statistical problems including mean, median, ANOVA, etc.

Evaluation of these learning outcomes will be done through online forum discussions, assignments, tests, and exams.

**Prerequisite:** A grade of C- or better in MA100, or satisfactory score on the Math Placement Exam.

**Technical Skills:** Students must have basic knowledge about using computers. For example,

1. students should be able to set up an access to the homework system and e-textbook following the instruction by the publisher;
2. students should be able to download and install R and RStudio following instructions given to them;
3. students should be able to perform basic functions in RStudio following video instructions.

**Minimum Technology Requirements:** Reliable access to a computer with high-speed internet access.

**Textbook:** An online access to Macmillan’s Achieve, an online homework system with an access to the e-textbook “The basic practice of Statistics, 9<sup>th</sup> Edition by Moore, Notz, and Fligner.”

The Achieve course has already been integrated with our EduCat. After you logon to the EduCat, you will see the Achieve Learning contents on the course page on EduCat. You can follow the detailed instructions by clicking the link below to register for the course (you may copy and paste the link to your browser if the link does not work):

[https://docs.google.com/presentation/d/1sjVpF-bu1PJtL9Ap7rt2dUDDWn0QSjDCDZuIo4g-yzg/edit#slide=id.g3dbd7ae118\\_3\\_10](https://docs.google.com/presentation/d/1sjVpF-bu1PJtL9Ap7rt2dUDDWn0QSjDCDZuIo4g-yzg/edit#slide=id.g3dbd7ae118_3_10)

Since this class is a First Day® inclusive access course, your access to the course materials is granted via a fee on your student bill - There is no need to make any other purchase at the bookstore or with the publisher. And – it’s at the best possible price. However, if you want to opt out of the inclusive access, you can click the link “Click here to opt out of the inclusive access fee (You still need to buy it!)” on the EduCat course website and follow the instruction there.

### **Learning Activities:**

An online class, which is conducted entirely online and can be completed without physically being present on campus, is very different from a regular class. For an online course, you have to work on your own and keep to a schedule. You should participate in forum discussions. In order to be successful in this course, you must have a good time-management strategy, the ability to learn on your own, and the ability to meet the deadline. You should present yourself in a positive light and communicate your thoughts and ideas effectively when you participate in discussions. You are required to logon to the online systems to work on course materials each day and spend at least 12 hours per week for the course work. If you do not have these abilities or cannot allocate 12 hours per week for this class, I suggest you to take a face-to-face class instead.

- First week activities: Read the syllabus, be familiar with Achieve, write a short paragraph about yourself and post on the discussion forum (you may talk about why you take this class, why online and not a face-to-face class, or some fun things you want to share with the class), take a quiz about syllabus etc.
- Each day, based on the detailed schedules, you begin by logging on to read the pages in the e-textbook.
- After completing your reading, work on “StatTutor”, and then on “LearningCurve”, sometimes, you may need to watch videos to help you work with R.
- After completing your reading, and working with “LearningCurve” and “StatTutor”, you are required to complete the homework assignment.

- Tests will be given on EduCat. There will be four tests. You are also required to take a two-hour cumulative final exam.
- I will create a forum with a discuss topic for each module on EduCat. You are expected to complete an initial post and make comments to other posts in order for you to receive good scores for forum discussion. Please contribute to the discussion.

**Tutoring Services:** You can find useful information from NMU tutoring services website: <https://www.nmu.edu/tutoring/home>. You can also get helps from tutors in the Math Lab located at 2100 Jamrich Hall.

**Instructor-Learner Interaction:** An effective way to study mathematics is through problem solving and discussions among peers. It is very common to take a lot of time working on understanding a math concept, and sometimes you may feel frustrated. Keep this in mind, the instructor learner interaction for this class is built in a way to help students achieve their learning outcomes.

- Homework assignments including LearningCurve, StatTutor, and Homework can be completed anywhere as you like. However, you have to complete your assignments before the deadlines and late assignment submission will not be accepted. Achieve provides many ways to help you complete your assignments. For example, for LearningCurve, if you need help on a specific question, you may click on “Read the ebook page on this topic (no penalty)”, or “Get a hint (fewer points)”, or “Show answer (no point)”. For StatTutor, there are videos covering important topics followed by several problems. You are allowed multiple attempts to solve each question on the homework assignment and StatTutor. However, you receive 5% penalty for wrong attempt. Feedback for each problem can be found by clicking on “Check Answer”. Sometimes, the online system may not be able to answer your questions. You are welcome to contact me if you need any help regarding the assignments.
- You are required to contribute to the class discussion. The discussion topics will help you understand the concepts. Your initial post should be directly related to the discussion topic. You are also required to make comments to other posts. Comments such as “good job” or “I agree” will not give you points. A relevant, helpful, and quality comment will further the discussion by offering different perspectives. I will grade you on the correctness and completeness of your initial posting and quality of your responses. Grading rubric is provided for each forum discussion. Grade and feedback will be available within a week after the discussion forum is closed.
- Four Tests are scheduled on September 13, October 04, October 21, and November 15. The final exam will be on December 09. Test score will be available after the test is closed. Feedback for some problems are also available. Since the system cannot recognize some of the answers, I usually manually look at your test and adjust your scores. Partial credits might be given based on how far your answer is from the correct answer. However, I don’t give extra credits for this class. Please don’t ask me to offer additional extra credit to boost your grade.
- Q&A forum: If you have any questions regarding the course content and homework assignments, or if you have some good ideas, you may post your questions or ideas online, your fellow students may help you or share their ideas with you. I will wait for

- one day after you post your question. If no one provides an answer to your question, as an instructor, I will help you by providing an answer to your question.
- Office hours are from 9:00-11:00, MWR, and by appointment. If you cannot come to campus during the office hours, you may set up a Zoom meeting with me. If you want to get help through emails, you are encouraged to do so. I would also like to point out that before you ask a question and get help from me, please work on the problem yourself first.

**Email Etiquette Tips:** Please follow the email etiquette tips at <https://www.nmu.edu/etrpc/email-etiquette>. The tips also apply to other forms of communications including Forum discussions. Please be respectful to your fellow classmates and the instructor.

**Email Communication:** If you have questions about the course materials or problems on the assignment, I encourage you to post your questions to the Q&A discussion forum first. Other students may help you by explaining to you how to understand the materials or how to solve a homework problem. However, if you want to email me privately, please include the course name, your full name, and a complete explanation. This information allows me to give you the best possible answer as quickly as possible. Usually you should receive my response in a couple of hours. However, please do give me at least 24 hours before you email me the same question again.

### **Grading Plan:**

I will drop the lowest score out of the four test scores. The coursework will be weighted as follows:

First Week Activities: 1%.  
Discussion Forum: 3%.  
LearningCurve: 5%.  
StatTutor: 5%.  
Homework: 15%.  
H5P Activities: 1%.  
Tests: 45%.  
Final Exam: 25%

It is important to take the tests and exam at the scheduled time. No make-ups will be given.

Grading: 90%—100%, A-/A; 80%—89%, B-/B/B+; 70%-79%, C-/C/C+; 60%-69%, D-/D/D+; 0%-59%, F.

**Disability Services** If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Dean of Students Office at 2001 C. B. Hedgcock Building (227-1737 or [disserv@nmu.edu](mailto:disserv@nmu.edu)). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and University guidelines.

### **NMU Polices and Services**

Academic honesty policy: <https://www.nmu.edu/bulletin/academic-honesty?&SessionID=410552>

Incomplete Grade Policy: <https://www.nmu.edu/acac/incompletegradepolicy>

Non-Discrimination Policy: <https://www.nmu.edu/equalopportunity/non-discrimination-policy>

Disability Law Compliance Policy: <https://www.nmu.edu/policies?p=1078&type=Policy>

Veteran Services: <https://www.nmu.edu/veterans/>

Help Desk: <https://it.nmu.edu/helpdesk>

Lydia M. Olson Library: <https://www.nmu.edu/lis/library>

Disability Services: <https://www.nmu.edu/disabilityservices/types-accommodations>

Academic and Career Advisement Center: <https://www.nmu.edu/acac/home-page>

Student Service Center: <https://www.nmu.edu/studentsservicecenter/home-page>

## **Privacy Statements**

Macmillan Learning Privacy Policy: <https://store.macmillanlearning.com/us/privacy-notice>

Macmillan Learning Privacy and Cookie Notice: [https://store.macmillanlearning.com/us/privacy-notice?\\_ga=2.98566104.615888239.1586735215-428872584.1578955260](https://store.macmillanlearning.com/us/privacy-notice?_ga=2.98566104.615888239.1586735215-428872584.1578955260)

RStudio Privacy Policy: <https://www.rstudio.com/about/privacy-policy/>

## **Accessibility Statements**

Moodle: <https://docs.moodle.org/dev/Accessibility>

Macmillan Learning: <https://www.macmillanlearning.com/college/us/our-story/accessibility>