



Michigan
Technological
University

Department of Mathematical Science

Online MA 3710 Section R05 Engineering Statistics Fall 2024

Instructor: Md Mutasim Billah

Office: Online via Zoom (link on canvas home page)

Online Office Hours: Please be on time! If no student shows up to a Zoom meeting then it will end after approximately 10 minutes.

Saturday: 11:00 pm- 12:00 pm ET

Sunday: 11:00 am- 12:00 pm & 5:00 pm- 6:00 pm ET

By Appointment: 24/7

Email: mbillah1@mtu.edu

Time Zone: Eastern Time

Text: *Statistical Methods for Engineers* (any edition is fine)
by Vining and Kowalski

Grading:

Topic	Notes	Weight
Midterm Exam 1	Available from Sept 27 at 8:00 am to Sep 29 at 11:59 pm ET. You have 3 1/2 hours to complete the exam once you begin. You must complete the exam in one sitting.	15%
Midterm Exam 2	Available from Nov 01 at 8:00 am to Nov 05 at 11:59 pm ET. You have 3 1/2 hours to complete the exam once you begin. You must complete the exam in one sitting.	15%
Comprehensive Final Exam	Available from Dec 09 at 8:00 am to Dec 13 at 11:59 pm ET. You have 3 1/2 hours to complete the exam once you begin. You must complete the exam in one sitting.	20%
Homework	Total of 13 assignments (HW 13 is Extra Credit)	30%
Quiz	Total of 12 quizzes (Week 1 Special quiz is Extra Credit)	10%
Class Participation	Depends on the HW Discussion & Mandatory Meetings	5%
Projects	2 short projects; Require R software	5%

Grading Scale:

90% - 100%	A
85% - 90%	AB
80% - 85%	B
75% - 80%	BC
70% - 75%	C
65% - 70%	CD
60% - 65%	D
0% - 60%	F

We will cover these sections of the textbook in the following order:

Exam 1: All of Chapter 1, All of Chapter 2, 3.1, 3.2, 3.3, 3.4

Exam 2: 3.5, 3.6, 3.7, 4.1, 4.2, 4.3, 4.4, 4.8

The Final Exam will cover the previously listed sections in addition to: 5.1, 5.2, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 6.1, 6.2, 6.4, & one-way ANOVA

Extra Credit Topic: Design & Experiment (Chapter 7)

Required Technology:

Students enrolled in this *online course* must have:

- (a) A functional computer/laptop with a current Windows or Mac operating system.
- (b) A strong home internet connection.
- (c) A smartphone with the ability to load apps from a major app store (suggested apps are Zoom, GeniusScan/CamScanner, and Canvas).

Course Resources:

- (a) **Calendar:** *One of the most important resources of this course*; it will help you to be organized in this course; download it from the home page of the canvas. This calendar provides a tentative schedule to watch videos along with all due dates for the quizzes, HW, discussion for HW, projects, and exams. Please make a color print of the calendar and hang it somewhere in your study room.
- (b) **Lecture Notes:** Lecture notes for all chapters are available in the week module.
- (c) **Lecture Videos:** Lecture videos for all chapters are available in the week module.
- (d) **Handouts:** Handouts will be helpful while watching the lecture videos; available in the week module.

Everything in this course has been arranged inside of the module on canvas, please watch videos A1 (Part I, II, III) to get a better understanding of these resources (week 01 module). Besides, participate in the quiz after watching these videos to get some early bonus points! This special quiz is due by 1st week Friday night.

Please note that you are responsible for everything that will be covered in this course.

Homework, Quizzes & Class participation:

Quizzes are available in the week module on canvas and due on Saturday at 11:59 pm Eastern Time (except Quiz 10, which will be due on Nov 21, Thursday at 11:59 pm ET). Quizzes must be completed by the due date & there is NO way to participate after the due date; exceptions might be considered if notified by the dean of school. 'Week 01 Special Quiz' is for extra credits!

*** The quizzes are to be done ON YOUR OWN. Communicating with other people, giving anyone help, or receiving help is considered cheating and will result in a score of zero and will be reported as a case of academic misconduct. Please see the *cheating or plagiarism* section of the syllabus for details.

Homework assignments are available in the week module on Canvas and due on Sunday at 11:59 pm Eastern Time (except HW 12, which will be due on Nov 22, Friday at 10:00 pm ET). HW 13 is for extra credits. You can discuss the *homework problems* with your classmates, however, "copying classmate's answer" is strictly prohibited. Please see the *cheating or plagiarism* section of the syllabus for details. Homework must be submitted on canvas on time; 20% of points will be subtracted for the late submission, exception might be considered if notified by the dean of school.

A neatness bonus or messiness penalty may be added or subtracted to the total points earned on assignments. Work that I consider too messy to grade will receive a zero. Moreover, points will be subtracted from the homework assignment that do not adhere to the following guidelines:

- (a) Circle your answer so it can easily be found on the page. (-1 point/problem)
- (b) Do the questions in order. Problem 1 should be before Problem 2, etc. (-1 point/problem)
- (c) Work **must** be shown for all nontrivial calculations. (-1 point/problem)
- (d) **DO NOT** write down the answers in the question papers: USE blank papers or open new page on the writing device to write down your answers. (-2 points)
- (e) Merge the pages with **your name written at the top** and then submit it in the assignment section on the canvas in **firstname_lastname_HW#.pdf** format. (-2 points)

Discussion for HW is available in the week module on Canvas and due on Sunday at 11:59 pm Eastern Time; discussion for HW 13 is for extra credit points. You can ask questions in the discussion group; your options are: to ask a question about a part of a question, to respond to a question that has been asked, to post what you think is a solution to a part of a question, to comment on the completeness and/or correctness of someone's solution. **This is a STUDENT discussion page**; it is unlikely that I will answer questions or correct errors in this discussion. IF you have a question for me then use e-mail/meet in the office hour. You must work together to earn full points on the activity. I don't want to see any question left unanswered. Nor do I want to see incorrect or incomplete answers go un-commented.

Class Participation points will be distributed based on participation in the 'Discussion for HW' page & 'Mandatory Meetings'. Everyone who contributes to the discussion for HW page will get 2 points for making any worthwhile reply, 1 point if every question has an answer & 1 point if every proposed incorrect (incomplete) answer is corrected. On the other hand, 08 points will be given for joining the mandatory meetings, and students can expect to have 2-3 meetings throughout the semester.

Midterm Exams & Comprehensive Final Exam:

Two midterm exams (Exam 01 & Exam 02) and one comprehensive final exam will be a combination of multiple-choice and partial credit questions. Although the Final Exam is comprehensive, about half of it will cover material beyond Exam 2. Midterm exams will be available on Friday at 8:00 am and due on Sunday at 11:59 pm ET (2nd midterm exam is due on Tuesday). Whereas the comprehensive final exams will be available on Monday at 8:00 am and due on Friday at 11:59 pm ET in the final exam week. **You have 3 1/2 hours to complete the exam once you begin. You must complete the exam in one sitting.** Please refer to Exam section of the module, when available, for more details.

***The exams are to be done ON YOUR OWN; however, you may use your notes, formula sheet, calculator, etc. Communicating with other people, giving anyone help, or receiving help is considered cheating and will result in a score of zero and will be reported as a case of academic misconduct. Please see the *cheating or plagiarism* section of the syllabus for details.

Class Projects:

There will be two short class projects and you are required to use R & R-studio for the projects. Follow the instructions from the week 11 module to download and install R & R-studio on your laptop/computer. Final report (firstname_lastname_Project#.pdf format) along with the R-codes (firstname_lastname_Project#.R format) of the projects must be submitted on canvas on time; 20% of points will be subtracted for the late submission, exception might be considered if notified by the dean of school.

The Path to Success:

Take good notes while watching videos: Some students treat online courses differently. In a regular class, students take notes during the lecture and participate in problem-solving when it is done in the class. For some reason, they think with access to the lecture anytime, they don't need to do those things for an online class. WRONG! Keep a notebook, take notes while watching the lecture videos. You have the added benefit of being able to pause the lecture to make sure your notes are complete. Learning begins when you hear it, it gets better when you see it. Learning starts to get stronger when you write it with your hand, and it is best when you do all the calculations for every example right along with the lecture.

Secret – One Day Ahead: The way to maximize your homework scores is to submit it early. Students who read and participate early in the discussion also average higher on homework. Your smartest move is to be one day ahead. If it says Saturday then you pretend it says Friday.

Listed practice problems: In every week's module, I have posted practice problems and told you to solve the listed problems ONLY. Therefore, it will be the best strategy to solve those practice problems right after watching and taking notes from the lecture videos; this strategy will make a solid background in the related topics and the quizzes & homework problems will be much easier to solve. The same strategy should be taken in the exam week, I have posted the previous year and practice exam questions in the exam week; solve those problems at first before watching the video on review for the exam.

Formula sheet: Even though the exams will be open book, however, you have **3 1/2 hours** to complete the exam once you begin. Therefore, create a well-organized formula sheet from your class notes. Focus more on understanding the concepts and designing the formula sheet rather than memorizing work; the concepts make the work far more understandable.

I am here to make you successful: And finally, don't feel hesitate to reach out with questions/concerns/anything at all. Please remember that I am available 24/7 to answer your questions, therefore, let me help you to become successful in this course.

Cheating or Plagiarism:

Proper professional and ethical behavior are expected of all students in this class. ***This is taken very seriously. Possible cheatings*** include (but not limited to):

- (1) Communicating with other people, giving anyone help, or receiving help during quizzes and exams;
- (2) Copying classmate's answer in the HW;
- (3) Collecting and using past semester's resources of HW/Exam to answer HW/Exam in the current semester; etc.

If cheating is suspected, then the instructor will send an email giving a chance to the student to prove themselves as innocent. If the student fails to show any plausible explanation or to reply to the email in 3 days, then a score of zero will be given for the quiz/hw/exam/course. At the discretion of the instructor, the Dean of Students will also be notified as a case of academic misconduct.

MTU complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disability Act of 1990 (ADA). If you have a disability and need a reasonable accommodation for equal access to education or services at MTU, please call the Associate Dean of Students (487-2212). For other concerns about discrimination, you may contact your advisor or the Affirmative Action Office (487-3310).

Good Luck!