Math 3203.001 - Matrix Methods in Science and Engineering

Fall 2020

MW 8:00 - 8:55 am, RBN 4019 (Hybrid Format)

Instructor:	Dr. Maddie Dawsey
Office:	RBN 4048
Office Hours:	TTh 8:30 - 10:00 am and W 2:30 - 3:30 pm (or by appointment) Office Hours and appointments will be in person AND/OR virtual (over Zoom)
Email:	mdawsey@uttyler.edu (I will NOT receive emails to mdawsey@patriots.uttyler.edu)
Website:	All course materials will be posted on Canvas

Textbook

Linear Algebra and Its Applications, 5th edition, by Lay, Lay, and McDonald, ISBN #9780321982612

Course Description

Matrices and matrix algebra, determinants, systems of linear equations, Gaussian elimination, eigenvalues and eigenvectors, linear transformation, and applications in science and engineering.

Course Prerequisites

MATH 2413, Calculus I

Student Learning Outcomes

Upon completion of this course, students should be able to do the following:

- Perform basic computations with matrices, including Gaussian elimination, matrix multiplication, and computing transposes, inverses, and determinants
- Solve systems of linear equations using Gaussian elimination and inverse matrices
- Compute eigenvalues and eigenvectors of matrices and under- stand their importance to matrix theory and its applications
- Apply matrix techniques to real world applications from science and engineering

Important Dates

September 4th	Census Date
September 7th	Labor Day Holiday - no class
November 2nd	Withdrawal Deadline
November 23rd - 28th	Thanksgiving Break - no class
November 30th and December 1st - 4th	Classes Online
December 7th	Study Day

Grading Scheme

Your final letter grade will be determined by the following grading scheme:

Homework	**15%**
Quizzes	**15%**
Exams	**40%**
Cumulative Final Exam	**30%**

A	90 - 100
B	80 - 89.99
C	70 - 79.99
D	60 - 69.99
F	0 - 59.99

Attendance (Hybrid Format)

Students are expected to attend every lecture and are responsible for any announcements made during lecture. The course moves quickly, and any absence will be detrimental to the student's performance. Each student will be randomly assigned one day to attend class in person each week. Half of the class will attend in person on Monday, while the other half will attend online via the live streamed class Zoom meeting. The half that attends in person on Monday will attend online via the live streamed Zoom class on Wednesday, while the half that attends the Zoom meeting on Monday will attend in person on Wednesday. Any student who is uncomfortable coming to class in person will have the option to attend virtually through Zoom.

Homework

Homework will be assigned to be turned in weekly, except possibly during exam weeks. Homework will not be accepted after the due date *under any circumstance*. If you know that you will have to miss class on a day that homework is due, then it is your responsibility to email a scan or a photo of your homework to the professor before it is due. Homework that is turned in late or not turned in at all will earn a grade of zero.

Quizzes

There will be 7 quizzes during the semester. Quizzes will be approximately 10 minutes long. Your lowest quiz grade will be dropped at the end of the semester. The tentative quiz schedule is the following:

Quiz 1	**Wednesday, September 2nd, 2020**
Quiz 2	**Monday, September 14th, 2020**
Quiz 3	**Wednesday, September 23rd, 2020**
Quiz 4	**Monday, October 12th, 2020**
Quiz 5	**Wednesday, October 21st, 2020**
Quiz 6	**Monday, November 2nd, 2020**
Quiz 7	**Wednesday, November 11th, 2020**

Students attending class in person on the dates above will complete the quiz in person. Students attending class online will complete the quiz individually and submit it via Canvas by the end of the class period. Make-up quizzes will absolutely not be offered *under any circumstance* if the student fails to notify the professor before the scheduled quiz is missed. If you know that you will have to miss a quiz for a legitimate reason (medical emergency, athletic commitment, religious observance, etc.), you must notify the professor in advance to schedule a make-up quiz before the following class. Absolutely no make-up quizzes will be given after the class following a scheduled quiz. Missed quizzes that are not made up before the following class will earn a grade of zero.

Exams

There will be two midterm exams during the semester and an online cumulative final exam at the end of the semester. Each midterm exam will be worth 20% of the final course grade, and the final exam will be worth 30%. The tentative exam schedule is the following:

Exam 1	**Wednesday, September 30th, 2020**
Exam 2	**Monday, November 16th, 2020**
Cumulative Final Exam	**Friday, December 11th, 2020**

Students attending class in person on the dates above will complete the exam in person. Students attending class online will complete the exam individually and submit it via Canvas by the end of the class period. Make-up exams will absolutely not be offered *under any circumstance* if the student fails to notify the professor before the scheduled exam is missed. If you know that you will have to miss an exam for a legitimate reason (medical emergency, athletic commitment, religious observance, etc.), you must notify the professor in advance to schedule a make-up exam. Absolutely no make-up exams will be given more than three days after the missed exam. Missed exams that are not made up within three days will earn a grade of zero.

Technology

Students will be required to have a device capable of internet access and access to Canvas (for all course materials) and Zoom (for lectures and office hours as needed).

Recording of Lectures

All lectures (including student questions/responses) will be recorded and posted on Canvas. Class recordings are reserved only for the use of students enrolled in the course and only for educational purposes. Course recordings should not be shared outside of the course in any form without express permission.

Student Resources

The Mathematics Learning Center (MLC), RBN 4021, is an open access computer lab for math students. There are tutors on duty for several hours each day to assist students who are enrolled in early-career courses. While there are no tutors specifically for MATH 3203, the tutors on duty may be able to help you. See https://www.uttyler.edu/math/mlc.php and click the link to the MLC's Canvas page to see the online tutoring schedule.

Students are encouraged to set up study groups to study and work on homework together, whether it is in person with masks and social distancing or virtually through Zoom or some other form of online communication.

The professor checks her email often and usually responds within a few hours. Students are encouraged to email the professor with any questions related to course content. If the issue is too difficult to explain over email, then the professor may schedule an in-person meeting.

Grade Replacement

If you are repeating this course for a grade replacement, you must file an intent to receive grade forgiveness with the registrar by January 27th, 2019. Failure to file an intent to use grade forgiveness will result in both the original and repeated grade being used to calculate your overall grade point average. A student may receive grade forgiveness (grade replacement) for up to three course repeats during his/her career at UT Tyler.

Honor Code

Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

Accessibility

The Department of Mathematics at UT Tyler offers accommodations to students with learning, physical, and/or psychological disabilities. Any students needing special accommodations due to a disability are encouraged to visit https://hood.accessiblelearning.com/UTTyler and fill out the New Student application. The Student Accessibility and Resources (SAR) office will contact you. For more information, visit http://www.uttyler.edu/disabilityservices. Please see the professor to discuss arrangements.

Covid-19 Information

Students are required to wear face masks covering their nose and mouth and follow social distancing guidelines, at all times in public settings (including classrooms and laboratories), as specified by Procedures for Fall 2020 Return to Normal Operations. The UT Tyler community of Patriots views adoption of these practices consistent with its honor code and a sign of good citizenship and respectful care of fellow classmates, faculty, and staff.

Students who are feeling ill or experiencing symptoms such as sneezing, coughing, or a higher than normal temperature will be excused from class, should stay at home, and may join the class remotely. Students who have difficulty adhering to the Covid-19 safety policies for health reasons are also encouraged to join the class remotely. Students needing additional accommodations may contact the Office of Student Accessibility and Resources at University Center 3150, call (903) 566-7079, or email saroffice@uttyler.edu.