Matrix Methods in Science and Engineering
Mathematics 3203, Section 002, Spring 2026

Instructor: Dr. William Blair
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Course Schedule: MW 2:30-3:25 PM in Stewart Hall 127.

Course Website: You MUST activate your Canvas account. To do so, go to `https://uttyler.edu/canvas`. This is also the address to login. If you are registered in the course, you already have access to the course. All important documents will be posted on Canvas.

Office hours: MWF 4:00 PM - 5:00 PM and by appointment

Required Text: *Linear Algebra and Its Applications*, 6th edition, by Lay, Lay, & McDonald, ISBN # 9780135851258

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

Course Prerequisites: Mathematics 2413, Calculus I with a grade of C or better

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 understand their importance to matrix theory and its applications
- Apply matrix techniques to real world applications from science and engineering

Grading: Scores will be posted on Canvas. After the end of the semester, final course grades will be available on `myuttyler.edu`. A final course grade of 90% is guaranteed to be at least an A, a final course grade of 80% is guaranteed to be at least a B, a final course grade of 70% is guaranteed to be at least a C, and a final course grade of 60% is guaranteed to be at least a D. All grades below D will be F.

Quizzes: 15%
Exam 1: 25%
Exam 2: 25%
Final Exam: 35%

If you have any questions about the grading of a particular quiz or exam, you must contact me no more than one week after the day I return the graded assessment in class, whether you are present during that class or not.

Attendance: It is your responsibility to attend class. Attendance is mandatory. This means, among other things, coming to class on time and prepared. Before class

begins, you should silence and put away cell phones and any other electronic devices. Students are responsible for all announcements made during lecture.

Homework: Homework will be assigned each class period. Homework is mandatory, and you are responsible for completing all of the assigned problems. Solving the homework problems is essential to success in this course and on quizzes and exams.

Assessments: There will be 6 quizzes, 2 midterm exams, and a final exam. A list of the test dates is given below. This list is preliminary and subject to change; at least one week advance notice of any change in test dates will be given. Quizzes will usually be approximately 10 minutes of the class period, and exams will take the entire class period.

Quiz 1: Wednesday, January 21
Quiz 2: Wednesday, January 28
Exam 1: Wednesday, February 11
Quiz 3: Wednesday, February 25
Quiz 4: Wednesday, March 4
Exam 2: Wednesday, March 25
Quiz 5: Wednesday, April 8
Quiz 6: Wednesday, April 15
Final Exam: Monday, April 27 2:45 - 4:45

Final Exam:. The final exam will be on Monday April 27 2:45 - 4:45.

Cell Phones: Cell phones are not permitted in class. You must silence them and put them away before class begins.

Calculators: The use of calculators and other electronic devices, including cell phones, during exams is strictly prohibited, so study accordingly.

Make-ups: Make-ups for **documented** absences that are **required** as part of a UT Tyler obligation (e.g. athletes participating in an event, students participating in a debate contest, etc.) or for religious observation will be granted. For all make-ups of this type, prior notification of at least one week and documentation are required. Other make-ups are granted only in extreme cases and at the sole discretion of the instructor. Prior notification is still required. Under no circumstances will make-ups be granted without prior notification. Leaving early for a break is NOT grounds for a make-up, so please make your travel plans accordingly. In almost all cases, missed work will be assigned a 0.

Academic Integrity: Your work must be your own. Violations will be processed according to the established guidelines of the department, college, and university. Violations of academic integrity include, but are not limited to, cheating, fabrication, or plagiarizing. A range of academic sanctions may be taken against a student who engages in academic dishonesty. Below are ideas related to academic integrity.

Resources you are encouraged to utilize in this course include the textbook and unassigned problems, notes from class, assigned homework problems, your fellow Math 3203 students, the Math Learning Center, and your instructor. E-mail is the best way to contact me. I reply to email from 9:00 A.M. until 4:00 P.M. Monday-Friday.

A note about a resource NOT allowed in this course: while the internet may be a valuable resource, using it to unethically acquire answers for your work will be considered a violation of academic integrity and processed accordingly. Similarly, copying answers from other students' assignments, past or present, violates the idea that your work must be your own.

University Policies: Monday, January 26 is this semester's Census Date, the deadline for all registrations, schedule changes, and section changes. Monday, March 30 is the last day to withdraw from one or more courses. For university policies concerning Students' Rights and Responsibilities, Grade Replacement/Forgiveness, State-Mandated Course Drop Policy, Disability Services, Student Absence due to Religious Observance, Student Absence for University-Sponsored Events and Activities, Social Security and FERPA Statement, please see `https://www.uttyler.edu/academic-affairs/files/syllabuspolicy.pdf`

Course Policy Regarding AI:
UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified or this course (see below) is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy.

For this course, AI is **not permitted** in this course at all.

Notice: All policies and information above provide general guidelines for the course and may be amended throughout the course as needed at the discretion of the instructor. Any changes will be directly communicated to students through email, announcement in Canvas, or verbally in the classroom.