MATH 203 - DL, Spring 2022

LINEAR ALGEBRA

ONLINE LECTURES, IN-PERSON EXAMS

Instructor: Sarah Khankan, Ph.D.

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Office: Exploratory Hall Room 4417
Office Hours: W 9:30 am-10:30 am or by appointment (in office).
Online office hours: M W 10:30 am - 11:30 am or by appointment (on Blackboard Collaborate).

Credit Hours: 3

Text(s): Linear Algebra and Its Applications, by David C. Lay, *6th Edition*, Pearson

Prerequisites: Math 114 - Analytic Geometry and Calculus II

Broad purpose of the course: Systems of linear equations, linear independence, linear transformations, inverse of a matrix, determinants, vector spaces, eigenvalues, eigenvectors, and orthogonalization.

Disability statement: If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Resources at 703.993.2474. All academic accommodations must be arranged through that office.

Tutoring Center: The Math Tutoring Center will be offering in-person and online tutoring services to students currently enrolled in undergraduate Math courses at GMU.

To access the Math Tutoring Center online you need to login to Blackboard, click on the Organizations tab, locate the Math Tutoring Center Organization and self-enroll in this organization.

Students should post their questions in Piazza in the folder corresponding to their course. Please state your questions clearly, consider uploading a pdf file that contains your questions. Tutors will be answering your questions as soon as possible, expect to receive an answer by the following business day, although there might be delays. If you received answers for your questions and need further clarifications, you can join an active Blackboard Collaborate ses-

sion.

The Blackboard Collaborate sessions will be running during the weekdays.

Online Exams:

- Exam 1: on Campus, multiple sessions on 2/25/2022 and 2/26/2022
- Exam 2: on Campus, multiple sessions on 4/8/2022 and 4/9/2022
- Final Exam: 05/14/2022, 10:30 am - 1:10 pm in Lecture Hall 1

Grade Distribution:

Quizzes	20%
Exam 1	25%
Exam 2	25%
Final Exam	30%

Homework: Homework will be assigned for each chapter. Completing the homework assignment is the minimum of work you should be doing outside of class. Homework will not be collected, but completing it is essential to passing the course. **Reading the sections of the text related to the problems will always be part of the homework assignment**. I will start the lecture assuming you read the corresponding sections before class.

In-person quiz every other week: 20 minute written quizzes will be available for two days each in the Math Testing Center (Exploratory 4107). You can walk-in to take your quiz anytime during the opening hours. Details will be posted on Blackboard a few days before each quiz.
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MyMathLab Course ID: an optional MyMathLab course is accessible from the course blackboard page. It will contain some extra online practice problems.
Instructions: Click on the MyMathLab link in Blackboard, then make a pearson account. You will need the access code you obtained when you purchased your book.

Course Policies:

- Lectures will be recorded and posted on Blackboard twice weekly as a series of videos. Students are expected to watch the videos the same day they are made available and prepare any questions for the office hours.
- A PDF document of each lecture will also be posted on Blackboard.
- No makeup exams/quizzes will be given.
- Students are responsible for all missed work, regardless of the reason for absence. All class related notes will be posted on Blackboard.

Tentative Course Outline:
The weekly coverage might change as it depends on the progress of the class.

Week	Content	Sections covered
Week 1 (Week of 1/24)	• Systems of Linear Equations • Row Reduction and Echelon Form	1.1, 1.2
Week 2 (Week of 1/31)	• Vector Equations • The Matrix Equation Ax=b • Solutions Sets of Linear Systems	1.3, 1.4, 1.5
Week 3 (Week of 2/7)	• Linear Independence	1.7
Week 4 (Week of 2/14)	• Introduction to Linear Transformations • The Matrix of a Linear Transformation	1.8, 1.9
Week 5 (Week of 2/21)	• Matrix Operations • EXAM 1 on Campus: multiple sessions on Friday 02/25 and Saturday 02/26	2.1, 2.2
Week 6 (Week of 2/28)	• The Inverse of a Matrix • Characterizations of Invertible Matrices	2.3
Week 7 (Week of 3/7)	• Introduction to Determinants • Properties of Determinants • Vector Spaces and Subspaces	3.1, 3.2, 4.1
Week 8 (Week of 3/14)	• SPRING BREAK	4.2, 4.3
Week 9 (Week of 3/21)	• Null Spaces, Column Spaces, and Linear Transformations • Linearly Independent Sets; Bases	4.2, 4.3
Week 10 (Week of 3/28)	• Coordinate Systems • The Dimension of a Vector Space	4.4, 4.5
Week 11 (Week of 4/4)	• Change of Basis • EXAM 2 on Campus: multiple sessions on Friday 4/8 and Saturday 4/9	4.6
Week 12 (Week of 4/11)	• Eigenvectors and Eigenvalues	5.1
Week 13 (Week of 4/18)	• The Characteristic Equation • Diagonalization	5.2, 5.3
Week 14 (Week of 4/25)	• Inner Product, Lenth, and Orthogonality • Orthogonal Sets	6.1
Week 15 (Week of 5/2)	• Orthogonal Projections	6.2
05/14/2022 at 10:30 AM	• FINAL EXAM in Lecture Hall 1	