# MTH 285
# Linear Algebra

## COURSE OUTLINE

## Prerequisites:

**MTH 176 or equivalent.**

## Course Description:

Covers matrices, vector spaces, determinants, solutions of systems of linear equations, basis and dimension, eigen values, and eigen vectors. Designed for mathematical, physical and engineering science programs.

**Semester Credits:** 3  **Lecture Hours: 3  Lab/Recitation Hours: 0**

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## Course Outcomes

**At the completion of this course, the student should be able to:**

1) Solve Linear Systems using Gaussian Elimination.

2) Manipulate Matrices using the basic matrix operations.

3) Compute Determinants and use them in applications.

4) Be familiar with Vector Spaces and their basic properties.

5) Use Matrices to perform Linear Transformations.

6) Use the Gram-Schmidt Process.

7) Find eigenvalues and their corresponding eigenspaces.

8) Apply eigenvalues to applications.

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Required Materials:

Textbook

Textbook:

Elementary Linear Algebra with Applications, Richard Hill, 3rd edition, Thomson
ISBN # 9780030103476

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Topical Description: (Outline chapters and sections to be covered in the book – may include timeline)

| Topics | Chapter |
|---|---|
| 1. Introduction to Linear Equations and Matrices | 1 |
| 2. Determinants | 2 |
| 3. Vector Spaces | 3 |
| 4. Linear Transformations | 4 |
| 5. Eigenvectors and Eigenvalues | 5 |

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Notes to Instructors
(List information about optional topics, departmental exams, etc)

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