TERM:

COURSE CODE: MAT-215

COURSE TITLE: Linear Algebra

DAY(S) AND TIME(S):

LOCATION:

INSTRUCTOR:

OFFICE HOURS:

OFFICE LOCATION:

EMAIL:

PHONE:

COURSE PREREQUISITE: MAT-112

CREDITS: 4

COURSE DESCRIPTION:
Systems of linear equations, Gauss elimination, matrices, determinants, vector spaces of ordered n-tuples and functions, linear transformations, inner products, orthogonal basis, eigenvalues, eigenvectors and related vectors. Machine computation will be used to illustrate and supplement mathematical ideas and concepts.

STUDENT LEARNING OUTCOMES:

TEXTBOOK AND SUPPLEMENTAL MATERIALS:
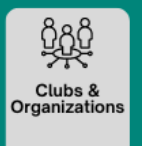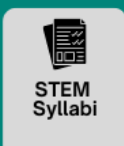Linear Algebra and Its Applications
By: David C. Lay, Steven R. Lay, Judi J. McDonald 6th edition, Pearson Publishing

GRADING POLICY:

Homework Assignments	30%
Quizzes	50%
Final Exam	20%

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SAMPLE COURSE SCHEDULE:

Reading Assignments	Chapter
Linear Equations in Linear Algebra • Systems of Linear Equations • Row Reduction and Echelon Form • Vector equations • Matrix Equations $Ax\# \vec{} = b\# \vec{}$ • Solutions Sets of Linear Systems • Linear Independence • Introduction to Linear Transformations <mark>Quiz #1; Chapter 1</mark>	**Chapter 1**
Matrix Algebra • Matrix Operations • Inverse of a Matrix • Characterizations of Invertible Matrices <mark>Quiz #2; Chapter 2</mark>	**Chapter 2**
Determinants • Introductions to Determinants • Properties of Determinants • Cramer's Rule & Linear transformations <mark>Quiz #3; Chapter 3</mark>	**Chapter 3**
Vector Spaces • Vector Spaces and Subspaces • Null Spaces, Columns Spaces & Linear Transformations • Linear Independent Sets, Bases • Coordinate Systems • The Dimension & Rank of a Vector space <mark>Quiz #4; Chapter 4</mark>	**Chapter 4**
Eigenvalues and Eigenvectors • Eigenvalues and Eigenvectors • The Characteristic Equation • Diagonalization • Eigenvectors and Linear Transformations • Diagonalization <mark>Quiz #5; Chapter 5</mark>	**Chapter 5**
Eigenvectors and Linear Transformations	**Chapter 5**

Cumulative Final Exam	Chapters 1, 2, 3, 4 & 5

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https://www.hccc.edu/administration/academic-affairs/syllabus-addendum.html