JOHN CABOT UNIVERSITY

COURSE CODE: **"MA 491"**
COURSE NAME: **"Linear Algebra "**
SEMESTER & YEAR: Sample **Summer Syllabus**

TOTAL NO. OF CONTACT HOURS: 45
CREDITS: 3
PREREQUISITES: Prerequisite: MA 198

COURSE DESCRIPTION:
This course introduces students to the techniques of linear algebra and to the concepts upon which the techniques are based. Topics include: vectors, matrix algebra, systems of linear equations, and related geometry in Euclidean spaces. Fundamentals of vector spaces, linear transformations, eigenvalues and associated eigenvectors.

SUMMARY OF COURSE CONTENT:
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LEARNING OUTCOMES:

Upon successful completion of the course, students will be able to:

- Solve application problems of systems of linear equations.

- Perform the operations of addition, scalar multiplication, multiplication, and find the inverses and transposes of matrices.

- Calculate determinants using row operations, column operations, and expansion down any column or across any row.

- Prove algebraic statements about vector addition, scalar multiplication, inner products, projections, norms, orthogonal vectors, linear independence, spanning sets, subspaces, bases, dimension and rank.

- Find the kernel, rank, range and nullity of a linear transformation.

- Calculate eigenvalues, eigenvectors and eigenspaces.

- Determine if a matrix is diagonalisable, and if it is, diagonalise it.

TEXTBOOK:

Book Title	Author	Publisher	ISBN number	Library Call Number	Comments
Elementary Linear Algebra	Larson/Edwards/Falvo	Houghton Mifflin	1133110878		

ASSESSMENT METHODS:

Assignment	Guidelines	Weight
Homework		10%
Quizzes		20%
Midterm Exam		30%
Final Exam		40%

SCHEDULE

Session	Session Focus
Week 1	Systems of Linear Equation and Matrices Chapter 1
Week 2	Determinants and Properties Chapter 2
Week 3	Euclidean Vector Spaces Chapter 3
Week 4	General Vectors Spaces and Chapter 4
Week 5	Eigenvectors and Eigenvalues with Applications Chapter 5