

EBA2204 Linear Algebra**COURSE INFORMATION**

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laboratory	
EBA1204	2	3	2	2	0	3

COURSE AIM

- Learn important concepts of linear algebra.
- Be familiar with the ideas of matrices and their applications in solving problems involving systems of linear equations.

COURSE WEEKLY CONTENTS

- 1 Matrices: Definition - Addition –Scalar multiplication – Matrices with special properties.
- 2 Matrix multiplication – Matrix transpose – Determinants.
- 3 Matrix inverse.
- 4 Systems of linear equations: Linear equations - Reduced Row Echelon Form and Row Operations – Matrix Rank.
- 5 Rank and systems of linear equations - The Homogeneous Case.
- 6 Systems of linear equations the Non-Homogeneous Case – Criteria for Consistency and Uniqueness.
- 7 Criteria for Consistency and Uniqueness.
- 8 Vector Spaces: Vector Algebra [definition-addition-multiplication by scalar-dot product-cross product].
- 9 Definitions of vector space and Basic Concepts – Subspaces part 1.
- 10 Definitions of vector space and Basic Concepts – Subspaces part 2.
- 11 Definitions of vector space and Basic Concepts – Subspaces part 3.
- 12 Introduction to Linear Transformations.
- 13 Linear Transformations: Mappings - General Properties of Linear Transformations.
- 14 Eigenvalues and Eigen.
- 15 Diagonalization.

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	←		30	MARKS		→	30
8 to 12	←		20	MARKS		→	20
1 to 15	←		10	MARKS		→	10
16 or 17	40	Final					40

REFERENCES

Textbook David C. Lay, Steven R. Lay, Judi J. McDonald, Linear Algebra and Its Applications, Pearson.