

## Faculty of Computers and Information Technology

## Linear Algebra

Information :

Course Code :	BMT 212	Level	:	Undergraduate	Course Hours :	3.00- Hours		
Department :	Faculty of Computers and Information Technology							
Instructor Information :								
Title		Name				Office hours		

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Lecturer	Wael Sayed Abdel Rahman Hassanein	1
Teaching Assistant	Manar Afify Farag Hassan abo el Soud	

## **Description :**

The course provides the basic understanding, definitions and properties of determinants and matrices, algebra of matrices, reduced matrix, rank of a matrix, solution of linear systems using inverse matrix, and Cramer's Rule. Topics covered in this course are homogeneous and non-homogeneous systems, square and rectangular systems, idea of a Linear transformation, matrix of linear transformation, solution of nonlinear algebraic equations by fixed point method, secant method, solution of linear algebraic systems by Iterative methods, jacobi method, Seidel Method and solution of nonlinear algebraic systems by Gauss elimination, Gauss elimination with pivot, LU decomposition method, Gauss - Jordan method Eigenvalues and Eigenvectors. Also, the course introduces orthogonality, projections, least squares approximations, orthonormal bases, and linear regression.