Subject	Mathematics I	**Course Code**	MA150	**Theoretical**	4 hrs / wk
Semester	1	**Prerequisite**	None	**Practical**	0 hrs / wk

Program Learning Components	
Week 1-4	**1. Matrices and Determinants** • matrices and matrix arithmetic • Types of Matrices • Evaluating Determinants by Row Reduction and Cramer's Rule • Properties of determinants • The adjoins and inverse of a matrix 2x2 , 3x3 • Solution of Homogenous and Non homogenous system of • linear Equations by Gauss Elimination and Cramer's rule
Week 5-7	**2. Vectors:** • Introduction to Vectors • Cartesian and Polar Representation • Vector Arithmetic • Dot Product and Projection • Cross Product and Parallel Lines • Properties of vectors • Parametric equations for the Line • Plane equation
Week 8-12	**3. Differentiation** • Definition of the Derivative of a function • Geometric meaning of the derivative • Basic differentiation rules • Implicit differentiation • Applying the chain rule • Derivatives of Trigonometric functions • Derivatives of logarithmic and exponential functions • Derivatives of Inverse Trigonometric functions • Higher Order Derivatives / L'hopital's Rule

Course Assessment:

Course Work	Mid-Term Tests	Final Examination
10	30	60

NOTE: Course Work may include assignments, projects and practical activities.

Textbooks:

1- Calculus by Anton , Bivens, Davis ,8^{TH} Edition
2- Linear Algebra by Seymour Lipshutz
3- Calculus and Analytical Geometry by Fisher and Ziebur