

Course Title	Calculus and Analytical Geometry
Course Code	MS-251
Credit Hours	3
Category	Math & Science Foundation
Prerequisite	None
Co-Requisite	None
Follow Up	None
Course Description	Limits and Continuity; Introduction to functions, Introduction to limits, Techniques of finding limits, Indeterminate forms of limits, Continuous and discontinuous functions and their applications, Differential calculus; Concept and idea of differentiation, Geometrical and Physical meaning of derivatives, Rules of differentiation, Techniques of differentiation, Rates of change, Tangents and Normals lines, Chain rule, implicit differentiation, linear approximation, Applications of differentiation; Extreme value functions, Mean value theorems, Maxima and Minima of a function for single-variable, Concavity, Integral calculus; Concept and idea of Integration, Indefinite Integrals, Techniques of integration, Riemann sums and Definite Integrals, Applications of definite integrals, Improper integral, Applications of Integration; Area under the curve, Analytical Geometry; Straight lines in R^3 , Equations for planes.
Text Book(s)	Calculus and Analytic Geometry by Kenneth W. Thomas.
Reference Material	Calculus by Stewart, James. Calculus by Earl William Swokowski; Michael Olinick; Dennis Pence; Jeffery A. Cole.