

MATH-101	Engineering Mathematics-I	3.0	3.0
	<p><b>Differential Calculus:</b> Limit, Continuity and Differentiability of functions, Derivatives of real functions. Higher order derivatives and Leibnitz's theorem. Rolle's theorem, Mean value theorem. Taylor's theorem with Remainder. Expansion of functions. Indeterminate forms. Tangent and Normal - Cartesian and Polar curves. Lengths of tangent, normal, sub tangent and subnormal. Functions of several variables. Partial and total derivatives. Homogeneous functions, Euler's theorem. Maxima and Minima of functions of more than one variables. Curvature, Radius of curvature, Centre of curvature.</p> <p><b>Integral Calculus:</b> Techniques of integration, Standard integrals, Integration of rational fractions, Reduction formulae. Definite integrals. Integral as the limit of sum, Improper integrals, Gamma and Beta functions. Lengths of curves, Areas of Cartesian and polar curves, Volumes of solids of revolution.</p> <p><b>Vector Algebra:</b> Position vector of a point. Scalar and vector product of vectors. Scalar and vector product of three vectors. Geometrical interpretation of scalar and vector products. Physical application.</p>		