

Subject Code:1ET1000101	Subject Title: CALCULUS
Pre-requisite Subject	Limit of a function, Continuity and Differentiability of a function, Differentiation and Integration.

Course Objective:

To understand the applications of differentiation and integration to area and volume. To determine maximum and minimum values of a single variable and two variable functions. To apply mathematical formulas in various subjects of relevant branch.

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)			
Lecture	Tutorial	Practical	Credit	Theory		Practical	
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment
3	2	-	5	70	30	-	-

7.	Applications of Definite Integrals: Volume by Rotation about axes, Volume by Slicing, Volume by Cylindrical shells, Length of Cartesian and Polar curves.	4	9
8.	Multiple Integrals: Double integrals, Evaluation of Double Integrals, Change of order of Integration, Double integrals in polar co-ordinates, Transformation of variables by Jacobian only for double integration, Triple Integrals.	7	17
9.	Applications of Multiple Integrals: Areas, Volumes, Centre of Gravity, Moment of Inertia.	4	10

Course Outcome:

- Students will be able to apply mathematics to engineering problems of their relevant branches after studying this course.

List of References:

1. Calculus, Volumes 1 and 2, T. M. Apostol, Wiley Eastern, Second Edition.
2. Calculus with Early Transcendental Functions, James Stewart, Cengage Learning, Fifth Edition.
3. Thomas' Calculus, Maurice D. Weir, Joel Hass, Frank R. Giordano, Pearson Education, Eleventh Edition.
4. Calculus – Single and Multivariable, Hughes – Hallett et al., John-Wiley and Sons, Fourth Edition.