

## CC181: Engineering Mathematics – I

Teaching Scheme			Credits	Marks Distribution				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE	CE	ESE	CE	
3	1	0	4	70	30	30	20	150

### Course Content:

Sr. No.	Topics	Teaching Hrs.
1	<p><b><u>Tracing of Curves:</u></b></p> <p>Tracing of Cartesian, Polar and Parametric form of Standard Curves.</p>	06
2	<p><b><u>Reduction formulae:</u></b></p> <p>(Statements Only) of</p> $\int_0^{\pi/2} \sin^n x dx, \int_0^{\pi/2} \cos^n x dx, \int_0^{\pi/2} \sin^n x \cos^m x dx$ <p>Applications to Find Area, Volume of Standard Curves.</p>	06
3	<p><b><u>Taylor and Maclaurin series:</u></b></p> <p>Expansions and applications to compute approximate values of functions and integrals.</p>	08
4	<p><b><u>Partial Differentiation and its Applications:</u></b></p> <p>Partial and total Differential Coefficient, Euler's Theorem, Geometrical Interpretation of Partial Derivative, Jacobian, Taylor's Expansion for Two Variables, Errors and Approximations, Maxima and Minima of Function of Two Variables, Lagrange's Method of Undetermined Multipliers to Determine Stationary Values.</p>	10
5	<p><b><u>Multiple Integral and its Applications:</u></b></p> <p>Double Integrals, Evaluation, Change of the order of Integration for Cartesian Coordinates, Change to Polar Coordinates, , Application to find Area.</p>	06

6 **Vector Differentiation and Integrals:**

08

Gradient, Divergence, Curl. Line and surface integrals.

---

**Total Hrs. 44**

---

**Reference Books:**

1. Grewal, B. S., “*Higher Engineering Mathematics*”, Khanna Publisher, New Delhi, (Latest Edition).
2. Sastry S. S., “*Engineering Mathematics – Vol. I and II*”, Prentice Hall of India.
3. Dass H.K., “*Engineering Mathematics*”, S. Chand & Co, New Delhi.