Differential Geometry
[15MT/PC/DG44]

Unit - I
Curves in the Plane and in Space (1-76)

1.1) Curve, Arc-Length, Re-parameterization
1.2) Curvature, Plane Curves, Space Curves

Unit - II
Surfaces in three dimensions (76-119)

2.1) Surface, Smooth Surface
2.2) Tangents, Normal and Orientability, Examples of Surfaces

Unit - III
The First Fundamental Form (120-151)

3.1) Lengths of Curves on Surfaces
3.2) Isometrics of Surfaces
3.3) Conformal Mappings of Surfaces
3.4) Surface Area

Unit - IV
Curvature of Surfaces

4.1) The Second Fundamental Form
4.2) The curvatures of Curves on a Surface
4.3) The Normal and Principle Curvatures

Unit - V
Gaussian Curvature

5.1) The Gaussian and Mean Curvatures
5.2) The Pseudosphere
5.3) Flat Surfaces geodesics
5.4) Definition and Basic Properties
5.5) Geodesic eqn - Gauss's Theorema Egregium

Text Book :

Pressley, Andrew, "Elementary Differential Geometry", London: Springer-Verlag, 2001.

Chapter	Sec
1	1.1 - 1.3
2	2.1 - 2.3
4	4.1 - 4.4
5	5.1 - 5.4
6	6.1 - 6.3
7	7.1 - 7.3
8	8.1 - 8.2
10	10.1