Programme: Diploma Class: B.Sc.	Year: II	Semester: III

Subject: Mathematics	
Course Code:	**Course Title: Analytical Geometry**
Course Outcome	**CO1:**Identification and tracing of different conics, equation of Sphere, find family of spheres passing through a circle, tangent planes and normal lines to a sphere. **CO2:** Obtain equation of Cone, enveloping cone, cylinder, enveloping cylinder. **CO3:**. Find equation of tangent plane to different conicoids and enveloping cone of a conicoid.

Unit No.	Course Content	Hours
I	General equation of second degree. Tracing of conics. Tangent at any point to the conic, chord of contact, pole of line to the conic, director circle of conic. Polar equation of a conic, tangent and normal to the conic.	8
II	Sphere: Plane section of a sphere. Sphere through a given circle. Intersection of two spheres, radical plane of two spheres. Co-axial system of spheres	8
III	Cones: Right circular cone, enveloping cone and reciprocal cone. Cylinder: Right circular cylinder and enveloping cylinder	8
IV	Central Conicoids: Equation of tangent plane. Director sphere. Normal to the conicoids. Polar plane of a point. Enveloping cone of a conicoid. Enveloping cylinder of a conicoid	8
V	Paraboloids: Circular section, Plane sections of conicoids. Generating lines. Confocal conicoid. Reduction of second degree equations.	8

Suggested Readings:
1. Analytical Solid Geometry by Shanti Narayan and P.K. Mittal, Published by S. Chand & Company Ltd. 7th Edition.
2. A text book of Mathematics for BA/B.ScVol 1, by V Krishna Murthy & Others, Published by S. Chand & Company, New Delhi.
3. A text Book of Analytical Geometry of Three Dimensions, by P.K. Jain and Khaleel Ahmed, Published by Wiley Eastern Ltd., 1999.
4. Co-ordinate Geometry of two and three dimensions by P. Balasubrahmanyam, K.Y. Subrahmanyam, G.R. Venkataraman published by Tata-MC Gran-Hill Publishers Company Ltd., New Delhi.
5. Suggested digital platform: NPTEL/SWAYAM/MOOCS

Mapping of course outcomes with program outcomes & program specific outcomes

CO's No.	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	3	3	2	3	1	2	2	3	3
CO2	3	3	2	3	1	2	2	3	3
CO3	3	3	2	3	1	2	2	3	3