

Lecture Plan		
Name of the College: Government College of Arts, Science and Commerce, Sanquelim-Goa		
Name of Faculty: Vishal Vinayak Gawas	Subject: Mathematics	
Paper code: MAT-303 -Analytical 3D Geometry	Program: B.Sc.	Division: -
Academic year: 2025-26	Semester: V	Total Lectures: 30
Course Objectives:		
1. TTo make students explore the principles of coordinate geometry, focusing on planes, lines, spheres, cones, cylinders and conicoids.		
Expected Course Outcome:		
1) Define terms and explain concepts related to 3D Geometry		
2) EUnderstand the properties of straight lines, spheres, cones and cylinders.		
3) Establish various properties and results on conicoids.		
4) Develop analytical skills in solving geometric problems.		
Student Learning Outcome: Student will be able to		
1) Define and explain fundamental concepts of 3D Geometry and understand the properties of straight lines, spheres, cones, and cylinders.		
2) Establish various properties and results on conicoids and develop analytical skills in solving complex geometric problems.		

Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
June	20/06/2025	21/06/2025	1	Discussion of prerequisites			Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
	23/06/2025	28/06/2025	2	Coordinates of a Point in Space and Distance Formula, Direction Cosines of a Line and its Properties		Smart Board PDF	Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
	30/06/2025	05/07/2025	2	Projection on a Straight Line, Angle between two straight lines; Condition for perpendicularity and parallelism.		Smart Board PDF	Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
July	07/07/2025	12/07/2025	2	Different Forms: Normal Form; Algebraic Form; Intercept Form			Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
	14/07/2025	19/07/2025	2	Three-point Form. Distance of a Point from a Plane		Data projector	Chatterjee, D. (2009). Analytical Geometry Two and Three

							Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
	21/07/2025	26/07/2025	2	Angle Between Two Planes; Pair of Planes.			Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
July August	28/07/2025	02/08/2025	2	Three-point Form. Distance of a Point from a Plane			Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
August	04/08/2025	09/08/2025	2	Distance Between Two Straight Lines;		Smart Board	Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
	11/08/2025	16/08/2025	2	Different Forms: Centre-Radius Form; Four Point Form; Diametral Form.			Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.

	18/08/2025	23/08/2025	2	Some Positional Studies.		Smart Board PDF	Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
	25/08/2025	30/08/2025	0 Chaturthi Break 26/08/25 To 01/09/25				Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
September	02/09/2025	06/09/2025	2	Equation of a Cone with a guiding curve;		Smart Board	Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
	08/09/2025	13/09/2025	2	Equation of a Right Circular Cone.			Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
	15/09/2025	20/09/2025	2	Equation of a Cylinder; Equation of a Right Circular Cylinder		Smart Board	Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.

	22/09/2025	27/09/2025	2	Ellipsoid; Hyperboloid of One Sheet		Smart Board	Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
September October	29/09/2025	04/10/2025	2 Gandhi Jayanti / Dussehra	Hyperboloid of Two Sheets			Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
October	06/10/2025	11/10/2025	2	Elliptic Paraboloid; Hyperbolic Paraboloid.			Chatterjee, D. (2009). Analytical Geometry Two and Three Dimensions. Narosa Publishing House Pvt. Ltd., New Delhi.
	13/10/2025	18/10/2025	2	Revision.			

*** Assessment Rubrics**

Component	Max Marks
ISA 1	5
ISA 2	5
Practical	Nil
Project	Nil

Semester End Exam	40
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