	Lecture Plan									
Name of the College: Government College of Arts, Science and Commerce. Sanquelim - Goa										
Name of Faculty:	Suvarna Patil			Subject: Physics						
Paper code: PHY-2	205 : Mathematica	Methods of Physics - I	T	Program: SYBSC		Division:				
Academic year: 20	024-25	T		Semester: IV		Total Lecture	Total Lectures: 30			
Course Objective	es: This course air	ms to provide the stud	ents with	the foundation in basic	knowledge o	f Mathematic	al methods which is required to apply in Physics.			
<ol> <li>2. Discuss vector analysis and its applications.</li> <li>3. Solve problems on limits, continuity and differentiation. 4. Explain and solve the problems on integration and differential equations.</li> </ol>										
Student Learning	g Outcome: Stude	ent will be able to und	erstand th	he basic of matrices and	l determinant					
Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books			
December	9-12-2024	14-12-2024	2L	Matrices & Determinants Definition and Notations, Addition and Multiplication of Matrices,	Solving Problems	White Board	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)			

	16-12-2024	21-12-2024		Properties of Matrix addition and Matrix multiplication, Partition of a Matrix		White Board	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
			2L				
January	2/01/2025	4/01/2025	2L	Rank of a Matrix. Properties of Determinants and Applications	Solving Problems	White Board	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	6/1/2025	11/01/2025	2L	Limits, Continuity, and differentiation Algebra of limits, Limits of the trigonometric and exponential function,.	Solving Problems	White Board	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	13/11/2025	18/01/2025	21	concept of continuity, left and right-hand limits. Differentiation of first principle, Derivative of polynomials, trigonometric, exponential & logarithmic functions, Bules of differentiation	Solving Problems	White	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)

	20/01/2025	25/01/2025	2L	Integration Content Integration as inverse process of differentiation, Integration of a variety of functions by substitution, by partial function & by parts	Solving Problems	White Board	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	27/01/2025	01/02/2025	2L	Standard integrals: - Algebraic, trigonometric, exponential and logarithmic	Solving Problems	White Board	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
January/February			2L	Vector Analysis Addition and Subtraction of Vectors, Multiplication by scalar, Resolution of Vectors	Solving Problems		H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
February	03/02/2025	8/02/2025	2L	, Magnitude of vector, dot & cross product of vectors and their physical interpretation. Directional derivatives, gradient,	Solving Problems	White Board	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	10/02/2025	15/02/2025	2L	del operator, Divergence and Curl, Laplacian operator, Integration of a vector	Solving Problems		H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019) H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)

				function: - line, surface, & volume integral.			
	17/02/2025	22/02/2025	2L	Gauss divergence theorem (no proof), Vectors Stokes theorem (no proof), Differential vector identity	Solving Problems		H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	24/02/2025	01/02/2025		Expression for			
February/March	24/02/2023	01/03/2025	2L	Laplacian operator in Cartesian, spherical and cylindrical coordinate.	Solving Problems	White Board	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
~ ~	03/02/2025	8/03/2025		Revision and solving	Solving	White	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co.
March			2L	problems	Problems	Board	(2019)
	10/03/2025	15/03/2025	2L	Differential Equations Definition of Partial derivative, Total differential chain rule,.		White Board	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	17/03/2025	22/03/2025	2L	1st order & 2nd order partial differential equations		White Board	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	24/03/2025	29/03/2025				White Board	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
March/April	31/03/2025	5/04/2025				White Board	
				Revision			

	07/04/2025	11/04/2025		White	
				Board	
					H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co.
			Revision		(2019)
	Component	Max Marks			
	ISA 1	10			
Assessment					
Rubrics	ISA 2	10			
	ISA3	10			
	Semester End				
	Exam	80			