Lecture Plan

Name of the college: Govt College of Arts Science and commerce Sanquelim Goa

Name of Faculty: Suvarna G Patil	**Subject:** Physics	
Paper code: PHY205	**Program: SY BSc**	**Division: A**
Academic year: 2025- 2026	**Semester: IV**	**Total Lectures: 30L**
Course Objectives: To have basic understanding of Physics	**The course will prepare the student/s to develop skills of the design and implementation of electronic circuits and fabricate the same using PCB designing for a prototype and/or circuit production in Electronic Industry.**	

Expected Course Outcome:Understand Physics at basic level

The student will be able to:

1. **Explain the properties of Matrices, determinants and discuss its applications.**
2. **Discuss vector analysis and its applications.**
3. **Solve problems on limits, continuity and differentiation.**
4. **Explain and solve the problems on integration and differential equations.**

Student Learning Outcome: **Understandng basic physics more deeply**							
Month	**Lecture From**	**Lecture To**	**No. of lectures allotted**	**Topic, Subtopic to be covered**	**Exercise/ Assignment**	**ICT Tools**	**Reference books**
Dcember	01/12/2025	6/12/2025	2	Matrices & Determinants No. of Hours Definition and Notations, Addition and Multiplication of Matrices	Solving Problems	PPT	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	8/12/2025	13/12/2025	2	**, Properties of Matrix addition and Matrix multiplication, Partition of a Matrix, Rank of a Matrix.**	Solving Problems	PPT	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	15/12/2025	20/12/2025	2	**Lot of activities funweek**			

	22/12/2025	23/12/2025	2	Christmas Break	Solving Problems		H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	24/122025	1/01/2026	2	Properties of Determinants and Applications	Solving Problems	PPT	
January	02/1/2026	3/01/2026	2	Limits, Continuity, and differentiation Algebra of limits, Limits of the trigonometric and exponential function, concept of continuity, left and right-hand limits. Differentiation of first principle,	Solving Problems		H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	5/01/2026	10/01/2026	2	Derivative of polynomials, trigonometric, exponential & logarithmic functions, Rules of differentiation.	Solving Problems	PPT	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	12/01/2026	17/01/2026	2	Ntegration Integration as inverse process of	Solving Problems	PPT	H.K. Dass & Dr Rama Verma, Mathematical

				differentiation, Integration of a variety of functions by substitution,			Physics, S. Chand & Co. (2019)
	19/01/2026	24/01/2026	2	by partial function & by parts. Standard integrals: - Algebraic, trigonometric, exponential and logarithmic.	Solving Problems	PPT	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	26/01/2026	31/01/2026	2	Vector Analysis 4 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)
Februvary	02/02/2026	07/02/2026	2	Magnitude of vector, dot & cross product of vectors and their physical interpretation.	Solving Problems		H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	09/02/2026	14/02/2026	2	Directional derivatives, gradient, del operator, Divergence and Curl, Laplacian operator,	Solving Problems	PPT	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	16/02/2026	21/02/2026	2	Integration of a vector function: - line, surface, & volume integral.	Solving Problems	PPT	H.K. Dass & Dr Rama Verma, Mathematical Physics, S. Chand & Co. (2019)
	23/02/2026	28/02/2026	2	Gauss divergence theorem (no proof), Stokes theorem (no	Solving Problems	PPT	H.K. Dass & Dr Rama Verma, Mathematical

				proof), Differential vector identity.			Physics, S. Chand & Co. (2019)
March	02/03/2026	07/03/2026	2	**Expression for Laplacian operator in Cartesian, spherical and cylindrical coordinate.**	Solving Problems		
	09/03/2026	14/03/2026	2	Differential Equations Definition of Partial derivative, Total differential chain rule,	Solving Problems		
	16/03/2026	21/03/2026	2	,1st order & 2nd order partial differential equations.	Solving Problems		
	23/03/2026	28/03/2026	2	Revision			
	30/03/26	31/03/2026	2	Revision			

*** Assessment Rubrics**

Component	Max Marks
ISA 1	5
ISA 2	5
ISA 3	5
Semester End Exam	20