

POLBA MAHAVIDYALAYA
Department Lesson Plan 2023-2024

Name of the department :Department of Physics

Name of the programme :B.Sc(General)(CBCS)

Name of the Course (Subject) :Physics

Period of the Lesson Plan : JULY 2023 TO JUNE 2024

ODD SEMESTER

Academic Period	Class	Paper	Topic to be covered	No. of lectures	Name of the Teacher	Date of Internal Assessment
JULY'23 TO JUNE'24	SEM-III	GCC-1C/ GE3	Kinetic theory of Gases,derivation of Maxwell's velocity distribution law,mean free path,Thermodynamic potentials,Clausius-Clapeyron equation	20	Sibaji Das	2 nd week of December
			Theory of radiation, Planck's law,Rayleigh-Jeans law, Statistical mechanics	18	Sibaji Das	
			Laws of thermodynamics,Carnot's cycle, various thermodynamical processes	22	Sibaji Das	
		SEC1	Geothermal energy, Wind energy harvesting, Ocean energy	10	Sibaji Das	
			Fossil fuels and Alternate Sources of energy, Solar energy	9	Sibaji Das	
			Hydro energy, Piezoelectric energy harvesting,Electromagnetic Energy		Sibaji Das	
	SEM-V	DSE-1A	General properties of nuclei,constituents and their intrinsic properties, B/A plot, Nuclear reactions, kinematics, Q-value	24	Sibaji Das	1 st week of December
			Nuclear models: Liquid drop model, shell model, radioactive decay: alpha, beta, gamma decay, Detector for nuclear radiation	24	Sibaji Das	
			Interaction of nuclear radiation with matter , Particle accelerator,Particle physics	27	Sibaji Das	

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EVEN SEMESTER

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JULY'23 TO JUNE'24	SEM-IV	GCC-1D/ GE4	Superposition of collinear harmonic oscillations,superposition of 2 perpendicular harmonic oscillations, wave motion general, sound	22	Sibaji Das	2 nd week of May
			Diffraction, Fluids	19	Sibaji Das	
			Wave optics, Interference by division of wave front,Michelson's interferometer,Polarization	19	Sibaji Das	
	SEM-VI	DSE-1B	Operational Amplifiers, digital circuits and Gates	22	Sibaji Das	1 st week of May
			Semiconductor devices and amplifiers, Bipolar Junction Transistor	17	Sibaji Das	
			sinusoidal oscillators,Instrumentations	17	Sibaji Das	
		SEC-4	Generators and transformers,electrical motors	7	Sibaji Das	
			Solid state devices, electrical protection, electrical wiring	12	Sibaji Das	
			Basic electricity principle,understanding electrical circuits,electrical drawing and symbols	11	Sibaji Das	

POLBA MAHAVIDYALAYA
Department Lesson Plan 2023-2024

Name of the department :Department of Physics

Name of the programme :B.Sc Three Year Major And Minor In Physics(NEP-2020)

Name of the Course (Subject) :Physics

Period of the Lesson Plan : JULY 2023 TO JUNE 2024

ODD SEMESTER

Academic Period	Class	Paper	Topic to be covered	No. of lectures	Name of the Teacher	Date of Internal Assessment
JULY'23 TO JUNE'24	SEM-I	MAJOR-I: PHYS1011	Calculus: Recapitulation: Limits, Continuity, Average and instantaneous quantities, Differentiation. Plotting functions. Intuitive ideas of continuous, differentiable etc. functions and plotting of curves.	3	Sibaji Das	3 rd week of December
			First Order and Second Order Differential equations	9	Sibaji Das	
			Calculus of functions of more than one variable: Partial derivatives, Exact and inexact differentials.	6	Sibaji Das	
			Recapitulation of vectors, Vector Differentiation, Vector Integration, Orthogonal Curvilinear Coordinates	27	Sibaji Das	
		MINOR-I: PHYS1021: MATHEMATICAL PHYSICS-I	Calculus: Recapitulation: Limits, Continuity, Average and instantaneous quantities, Differentiation. Plotting functions. Intuitive ideas of continuous, differentiable etc. functions and plotting of curves.	3	Sibaji Das	
			First Order and Second Order Differential equations	9	Sibaji Das	
			Calculus of functions of more than one variable: Partial derivatives, Exact and inexact differentials.	6	Sibaji Das	
		MULTI- DISCIPLINARY-1: PHYS1031	Unit, Dimensions and Measurement of Physical Quantities, Kinematics, Scalar and vector quantities	10	Sibaji Das	
			Motion in a plane, Laws of Motion, Work, Energy and Power, System of Particles and Rotational Motion, Gravitation	10	Sibaji Das	
				25	Sibaji Das	
		SEC-1:PHYS1051	Fossil Fuels and Alternate Sources of Energy, Solar energy, Wind Energy harvesting, Ocean Energy	26	Sibaji Das	
			Geothermal Energy, Hydro Energy, Piezoelectric Energy harvesting, Electromagnetic Energy Harvesting	19	Sibaji Das	

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EVEN SEMESTER

Academic Period	Class	Paper	Topic to be covered	No. of lectures	Name of the Teacher	Date of Internal Assessment
JULY'23 TO JUNE'24	SEM-II	MAJOR PHYS2011 II:	Fundamentals of Dynamics, Work and Energy, Collisions	13	Sibaji Das	3 rd week of May
			Rotational Dynamics, Elasticity, Gravitation and Central Force Motion, Motion of a particle under a central force field,	22	Sibaji Das	
			Oscillations, Non-Inertial Systems	10	Sibaji Das	
		MINOR II : PHYS2021	Fundamentals of Dynamics, Work and Energy, Collisions	13	Sibaji Das	
			Rotational Dynamics, Elasticity, Gravitation and Central Force Motion, Motion of a particle under a central force field,	22	Sibaji Das	
			Oscillations, Non-Inertial Systems	10	Sibaji Das	
		MULTI-DISCIPLINARY-2: PHYS2031	General Properties of Matter, Thermal Properties of Matter	21	Sibaji Das	
			Behavior of Perfect Gases and Kinetic Theory of Gases, Thermodynamics	16	Sibaji Das	
			Oscillations and Waves	8	Sibaji Das	
		SEC-2: PHYS2051	Basic Electricity Principles, Understanding Electrical Circuits, Electrical Drawing and Symbols	18	Sibaji Das	
			Generators and Transformers, Electric Motors, Solid-State Devices, Electrical Protection, Electrical Wiring	22	Sibaji Das	

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Implementation of Department Lesson Plan 2023-2024

Name of the department :Department of Physics

Name of the programme : B.Sc Three Year

Major And Minor In Physics(NEP-2020)

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Period of the Lesson Plan : JULY 2023 TO JUNE 2024

ODD SEMESTER

Academic Period	Class	Paper	Topic not covered	Topic covered	Reason for Not covered	Date of Internal Assessment			
JULY'23 TO JUNE'24	SEM-I	MAJOR-I: PHYS1011	Calculus: Recapitulation: Limits, Continuity, Average and instantaneous quantities, Differentiation. Plotting functions. Intuitive ideas of continuous, differentiable etc. functions and plotting of curves.		No Student				
			First Order and Second Order Differential equations		No Student				
			Calculus of functions of more than one variable: Partial derivatives, Exact and inexact differentials.		No Student				
			Recapitulation of vectors, Vector Differentiation, Vector Integration, Orthogonal Curvilinear Coordinates		No Student				
		MINOR-I: PHYS1021: MATHEMATICAL PHYSICS-I	Calculus: Recapitulation: Limits, Continuity, Average and instantaneous quantities, Differentiation. Plotting functions. Intuitive ideas of continuous, differentiable etc. functions and plotting of curves.		No Student				
			First Order and Second Order Differential equations		No Student				
			Calculus of functions of more than one variable: Partial derivatives, Exact and inexact differentials.		No Student				
		MULTI- DISCIPLINARY-1: PHYS1031	Unit, Dimensions and Measurement of Physical Quantities, Kinematics, Scalar and vector quantities		No Student				
			Motion in a plane, Laws of Motion, Work, Energy and Power, System of Particles and Rotational Motion, Gravitation		No Student				
			SEC-1:PHYS1051	Fossil Fuels and Alternate Sources of Energy, Solar energy, Wind Energy harvesting, Ocean Energy			No Student		
					Geothermal Energy, Hydro Energy, Piezoelectric Energy harvesting, Electromagnetic Energy Harvesting			No Student	

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Academic Period	Class	Paper	Topic covered	Topic Not covered	Reason for Not covered	Date of Internal Assessment	Remarks
	SEM-III	GCC-1C/ GE3	Kinetic theory of Gases,derivation of Maxwell's velocity distribution law,mean free path,Thermodynamic potentials,Clausius-Clapeyron equation	All completed		12.12.2023	
			Theory of radiation, Planck's law,Rayleigh-Jeans law, Statisticalmechanics	All completed			
			Laws of thermodynamics,Carnot's cycle, various thermodynamical processes	All completed			
		SEC1		Geothermal energy, Wind energy harvesting, Ocean energy	No student		

				Hydro energy, Piezoelectric energy harvesting, Electromagnetic Energy			
				Fossil fuels and Alternate Sources of energy, Solar energy			

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Academic Period	Class	Paper	Topic covered	Topic Not covered	Reason for Not covered	Date of Internal Assessment	Remarks
Aug'22 to Feb.'23	SEM-V	DSE-1A		General properties of nuclei, constituents and their intrinsic properties, B/A plot, Nuclear reactions, kinematics, Q-value	No student		
				Nuclear models: Liquid drop model, shell model, radioactive decay: alpha, beta, gamma decay, Detector for nuclear radiation	No student		
				Interaction of nuclear radiation with matter, Particle accelerator, Particle physics	No student		
		SEC 3		Use of computational methods to solve physical problems	No student		
				Use of various computer languages like FORTRAN, Linux. Control of various statements and understand of introductory level of LaTeX and its uses.	No student		
				Understand rigorously all theory by all hands-on exercise.	No student		

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Period of the Lesson Plan : JULY 2023 TO JUNE 2024

EVEN SEMESTER

Academic Period	Class	Paper	Topic not covered	Topic covered	Reason for Not covered	Date of Internal Assessment
JULY'23 TO JUNE'24	SEM-II	MAJOR PHYS2011	II: Fundamentals of Dynamics, Work and Energy, Collisions		No student	
			Rotational Dynamics, Elasticity, Gravitation and Central Force Motion, Motion of a particle under a central force field,		No student	
			Oscillations, Non-Inertial Systems		No student	
		MINOR II : PHYS2021	Fundamentals of Dynamics, Work and Energy, Collisions		No student	
			Rotational Dynamics, Elasticity, Gravitation and Central Force Motion, Motion of a particle under a central force field,		No student	
			Oscillations, Non-Inertial Systems		No student	
		MULTI- DISCIPLINARY-2: PHYS2031	General Properties of Matter, Thermal Properties of Matter		No student	
			Behavior of Perfect Gases and Kinetic Theory of Gases, Thermodynamics		No student	
			Oscillations and Waves		No student	
		SEC-2: PHYS2051	Basic Electricity Principles, Understanding Electrical Circuits, Electrical Drawing and Symbols		No student	
Generators and Transformers, Electric Motors, Solid-State Devices, Electrical Protection, Electrical Wiring			No student			

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	SEM-IV	GCC-1D/GE4	Superposition of collinear harmonic oscillations, superposition of 2 perpendicular harmonic oscillations, wave motion general, sound	All completed		26.06.2024	
			Diffraction, Fluids	All completed			

			Wave optics, Interference by division of wave front, Michelson's interferometer, Polarization	All completed			
		SEC 2		Understand the basic idea about atmosphere and weather..	No student		
				Determine how to produce wind also measuring its speed and direction and also understand about the humidity clouds and rainfall.	No student		
				Describe the global wind system, thunderstorm and tropical cyclones also define the climate, its change due to global warming and pollution.	No student		
	SEM-VI	DSE-1B		Operational Amplifiers, digital circuits and Gates	No student		
				Semiconductor devices and amplifiers, Bipolar Junction Transistor	No student		
				sinusoidal oscillators, Instrumentations	No student		

Academic Period	Class	Paper	Topic covered	Topic Not covered	Reason for Not covered	Date of Internal Assessment	Remarks
Mar'23 to July'23	SEM-VI	SEC-4		Generators and transformers,electrical motors	No student		
				Solid state devices, electrical protection, electrical wiring	No student		
				Basic electricity principle,understanding electrical circuits,electrical drawing and symbols	No student		