

POLBA MAHAVIDYALAYA
Department Lesson Plan 2022-2023

Name of the department :Department of Physics

Name of the programme :B.Sc(General)

Name of the Course (Subject) :Physics

Period of the Lesson Plan : JULY 2022 TO JUNE 2023

ODD SEMESTER

Academic Period	Class	Paper	Topic to be covered	No. of lectures	Name of the Teacher	Date of Internal Assessment	
July 22 to Feb.'23	SEM-I	GCC-1A/GE1	Conservation of momentum,work and energy conservation,motion of rockets, Rotationalmotion, Newton's law ofGravitation, Kepler's laws,Satellite in circular orbit andapplications. Geosynchronous orbits, Weightlessness	19	Sibaji Das	3rd week of Dec.2022	
			Oscillation, Elasticity, Special theory of relativity	21	Sibaji Das		
			Vectors, Ordinary Differential Equations, Laws of Motion	20	Sibaji Das		
	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 Dec. 2022
				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 Dec. 2022
				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	
SEC 3		Use of computational methods to solve physical problems		10	Sibaji Das		
			Use of various computer languages like FORTAN, Linux.Control of various statements and understand of introductory level of LaTeX and its uses.	21	Sibaji Das		
			Understand rigorously all theory by all hands-on exercise.	9	Sibaji Das		

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EVEN SEMESTER

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Mar'23 to July'23	SEM-II	GCC-1B/GE2	Magnetism: Biot-Savart's law and application, Magnetic properties of materials, Electromagnetic induction	16	Sibaji Das	3 rd week of May, 2023
			Electrostatics: Gauss's theorem, application, electric potential, Capacitance of different conductor, Gauss's theorem in dielectrics	22	Sibaji Das	
			Maxwell's equation, EM wave propagation, Vector analysis: review of vector algebra, divergence, curl and their significances	22	Sibaji Das	
	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, 2023
			Diffraction, Fluids	19	Sibaji Das	
			Wave optics, Interference by division of wave front, Michelson's interferometer, Polarization	19	Sibaji Das	
		SEC 2	Understand the basic idea about atmosphere and weather..	10	Sibaji Das	
			Determine how to produce wind also measuring its speed and direction and also understand about the humidity clouds and rainfall.	16	Sibaji Das	
			Describe the global wind system, thunderstorm and tropical cyclones also define the climate, its change due to global warming and pollution.	14	Sibaji Das	
SEM-VI	DSE-1B	Operational Amplifiers, digital circuits and Gates	22	Sibaji Das	1 st week of May, 2023	
		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		

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ODD SEMESTER

Academic Period	Class	Paper	Topic covered	Topic Not covered	Reason for Not covered	Date of Internal Assessment	Remarks
Aug'22 to Feb.'23	SEM-I	GCC-1A/ GE1	Conservation of momentum,work and energy conservation,motion of rockets, Rotationalmotion, Newton's law ofGravitation, Kepler's laws,Satellite in circular orbit andapplications. Geosynchronous orbits, Weightlessness	All completed		20.12.2022	
			Oscillation, Elasticity, Special theory of relativity	All completed			
			Vectors, Ordinary Differential Equations, Laws of Motion	All completed			
	SEM-III	GCC-1C/ GE3		Kinetic theory of Gases,derivation of Maxwell's velocity distribution law,mean free path,Thermodynamic potentials,Clausius-Clapeyron equation	No student		
				Theory of radiation, Planck's law,Rayleigh-Jeans law, Statistical mechanics	No student		
				Laws of thermodynamics,Carnot's cycle, various thermodynamical processes	No student		
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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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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Academic Period	Class	Paper	Topic covered	Topic Not covered	Reason for Not covered	Date of Internal Assessment	Remarks
Mar'23 to July'23	SEM-II	GCC-1B/ GE2	Magnetism: Biot-Savart's law and application, Magnetic properties of materials, Electromagnetic induction	All completed		01.07.2022	
			Electrostatics: Gauss's theorem, application, electric potential, Capacitance of different conductor, Gauss's theorem in dielectrics	All completed			
			Maxwell's equation, EM wave propagation, Vector analysis: review of vector algebra, divergence, curl and their significances	All completed			
	SEM-IV	GCC-1D/ GE4		Superposition of collinear harmonic oscillations, superposition of 2 perpendicular harmonic oscillations, wave motion general, sound	No student		
				Diffraction, Fluids	No student		
				Wave optics, Interference by division of wave front, Michelson's interferometer, Polarization	No student		
		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		

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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		