

Yogoda Satsanga Palpara Mahavidyalaya

DEPARTMENT OF PHYSICS

HONOURS TEACHING PLAN 2019-20

Semester	Paper	Unit/Module	Teacher	No. of lectures		
Semester-1	C1T: Mathematical Physics-I	Vector Calculus	Mr. Kali Krishna Giri	15		
		Orthogonal Curvilinear Coordinates		6		
		Calculus	Mr. Santipada Maity	15		
		Introduction to probability		7		
		Dirac Delta function and its properties		8		
	C1P1 – Mathematical Physics Lab	Mathematical Physics Lab	Dr. Arindam Pal	20		
	C2T2: Mechanics		Fundamentals of Dynamics	Dr. Arindam Pal	10	
			Work and Energy		8	
			Collisions		6	
			Rotational Dynamics		10	
			Non-Inertial Systems		6	
			Elasticity,	Mr. Swadesh Ranjan Bhakta	5	
			Fluid Motion		5	
			Special Theory of Relativity	Kali Krishna Giri	10	
			Oscillations	Mr. Sourav Mishra	3	
			Gravitation		4	
			Central Force Motion		5	
			C2 P2: Mechanics Lab	Mechanics Lab	Dr. Arindam Pal & Mr. Jadab Kumar Samanta	22

	GE-1T1: Elements of Modern Physics	Planck's quantum ,Problems with Rutherford model, Position measurement, Two slit interference experiment, One Dimensional infinitely Rigid Box	Dr. Arindam Pal	15
		Size and structure of atomic nucleus and its relation with atomic weight, Radioactivity, Fission and fusion	Mr. Sourav Mishra	14
	GE-1P1:Elements of Modern Physics Lab	Elements of Modern Physics Lab	Dr. Arindam Pal & Mr. Jadab Kumar Samanta	
SEM II	C3T: Electricity and Magnetism	Electric Field and Electric Potential,	Dr. Arindam Pal	11
		Dielectric Properties of Matter		10
		Magnetic Field, ,	Mr. Santipada Maity	6
		Magnetic Properties of Matter		6
		Electromagnetic Induction		8
		Electrical Circuits,	Sourav Mishra	6
		Network theorems		6
	C3P – Electricity and Magnetism (Lab)	Electricity and Magnetism (Lab)	Mr. Jadab Kumar Samanta	22
	C4 T - Waves and Optics	Superposition of Collinear Harmonic oscillations,	Mr. Kali Krishna Giri	8
		Superposition of two perpendicular Harmonic Oscillations		7
		Wave Motion	Dr. Arindam Pal	3
		Velocity of Waves		2
		Superposition of Two Harmonic Waves		2
		Wave Optics		6
		Interference, Interferometer		6
		Diffraction		5
	Holography	4		

	C4 P – Wave and Optics Lab	Wave and Optics Lab	Dr. Arindam Pal and Mr. Jadab Kumar Samanta	22
	GE2 T - Thermal Physics and Statistical Mechanics	Laws of Thermodynamics, Thermodynamical Potentials, Enthalpy, Gibbs, Helmholtz and Internal Energy functions,	Mr. Kali Krishna Giri	10
		Maxwell's relations and applications - Joule-Thompson Effect, Clausius- Clapeyron Equation, Expression for $(CP - CV)$, CP/CV , TdS equations.	Dr. Arindam Pal	14
		Kinetic Theory of Gases, Theory of Radiation, Statistical Mechanics	Swadesh Ranjan Bhakta	20
	GE2 P – Thermal Physics and Statistical (Lab)	Thermal Physics and Statistical (Lab)	Mr. Jadab Kumar Samanta,	22
SEM III	C5T: Mathematical Physics-II	Fourier Series	Mr. Kali Krishna Giri	10
		Frobenius Method		8
		Special Functions		6
		Some Special Integrals	Mr. Santipada Maity	6
		Variational calculus in physics		8
		Partial Differential Equations		10
	C5P: Mathematical Physics II Lab	Mathematical Physics II Lab	Dr. Arindam Pal & Mr. Santipada Maity	18
	C6T: Thermal Physics	Introduction to Thermodynamics,	Dr. Arindam Pal	3
		Thermodynamic Potentials		6
		Maxwell's Thermodynamic Relations		10
		Kinetic Theory of Gases	Mr. Swadesh Ranjan Bhakta	16
	C6P: Thermal Physics Lab	Thermal Physics Lab	Mr. Swadesh Ranjan Bhakta & Mr. Jadab Kumar Samanta	20

	C7T: Digital Systems and Applications	Digital Systems and Applications	Mr. Sourav Mishra	24
	C7P: Digital Systems and Applications Lab	Digital Systems and Applications Lab	Mr. Jadab Kumar Samanta & Mr. Sourav Mishra	20
	GE3T: Solid State Physics	Crystal Structure Elementary Lattice Dynamics Magnetic Properties of Matter	Mr. Santipada Maity	16
		Dielectric Properties of Materials, Elementary band theory, Superconductivity	Dr. Arindam Pal	18
	GE3 P: Solid State Physics Lab	Solid State Physics Lab	Dr. Arindam Pal and Mr. Jadab Kumar Samanta,	20
	SEC1T – Physics Workshop Skill	Physics Workshop Skill	Kali Krishna Giri	18
		Electrical Circuits and Network Skills	Mr. Sourav Mishra	18
SEM-IV	C8T: Mathematical Physics III	Complex Analysis, ,	Mr. Santipada Maity	10
		Integrals Transforms		10
		Matrices,	Mr. Kali Krishana Giri	10
		Eigen-values and Eigenvectors		10
	C8P: Mathematical Physics III Lab	Mathematical Physics III Lab	Dr. Arindam Pal	20
	C9T: Elements of Modern Physics	Elements of Modern Physics	Dr. Arindam Pal	28
	C9P: Elements of Modern Physics Lab	Elements of Modern Physics Lab	Mr. Jadab Kumar Samanta, Dr. Arindam Pal	20

	C10T: Analog Systems and Applications	Semiconductor Diodes, Two-terminal Devices and their Applications,	Mr. Santipada Maity	18
		Bipolar Junction transistors, Field Effect transistors, Amplifiers	Mr. Sourav Mishra	20
	C10P: Analog Systems and Applications Lab	Analog Systems and Applications Lab	Mr. Sourav Mishra Mr. Jadab Kumar Samanta	22
	SEC2T:	Applied Optics	Mr. Swadesh Ranjan Bhakta	16
	GE4T: Electricity and Magnetism	Vector Analysis, Electrostatics, Magnetism,	Mr. Santipada Maity	18
		Electromagnetic Induction, Maxwell's equations and Electromagnetic wave propagation	Dr. Arindam Pal	18
	GE4P: Electricity and Magnetism Lab	Electricity and Magnetism Lab	Dr. Arindam Pal, Mr. Jadab Kumar Samanta	18
	GE4T: Digital, Analog Circuits and Instrumentation	Digital, Analog Circuits and Instrumentation	Mr. Sourav Mishra	19
	GE4P: Digital, Analog Circuits and Instruments Lab	Digital, Analog Circuits and Instruments Lab	Mr. Jadab Kumar Samanta	16
SEM-V	C11T: Quantum Mechanics and applications	Schrodinger equation, General discussion of bound states in an arbitrary potential,	Mr. Kali Krishna Giri	18
		Quantum theory of hydrogen-like atoms, Atoms in Electric & Magnetic Fields, Atoms in External Magnetic Fields, Many electron atoms	Dr. Arindam Pal	20
	C11P: Quantum Mechanics and Applications Lab	Quantum Mechanics and Applications Lab	Dr. Arindam Pal & Mr. Santipada Maity	20
		Solid State Physics	Dr. Arindam Pal	22

	C12P: Solid State Physics Lab	Solid State Physics Lab	Mr. Jadab Kumar Samanta & Dr. Arindam Pal	20
	DSE1T: Classical Dynamics	Classical Mechanics of Point Particles,	Dr. Arindam Pal	18
		Small Amplitude Oscillations, Special Theory of Relativity,	Mr. Kali Krishna Giri	16
		Fluid Dynamics,	Mr. Swadesh Ranjan Bhakta	16
	DSE2T:Nuclear and Particle Physics	Nuclear and Particle Physics	Mr. Sourav Mishra & Mr. Santipada Maity	22
SEM-VI	C13T: Electromagnetic Theory	Maxwell Equations,	Dr. Arindam Pal	8
		EM Wave Propagation in Unbounded Media,		12
		EM Wave in Bounded Media	Mr. Santipada Maity	6
		Polarization of Electromagnetic Waves		6
		Wave guides		4
		Optical Fibres		5
	C13P: Electromagnetic Theory (Lab)	Electromagnetic Theory (Lab)	Dr. Arindam Pal and Mr. Jadab Kumar Samanta	18
	CC14T: Statistical Mechanics	Statistical Mechanics	Dr. Arindam Pal	22
	C14P: Statistical Mechanics (Lab)	Statistical Mechanics (Lab)	Dr. Arindam Pal & Mr. Santipada Maity	18
	DSE3T: Communication Electronics	Communication Electronics	Mr. Santipada Maity & Mr. Kali Krishna Giri	18
	DSE3P: Communication Electronics (Lab)	Communication Electronics (Lab)	Mr. Jadab Kumar Samanta	16

	DSE4T: Digital Signal Processing	Digital Signal Processing	Mr. Sourav Mishra	22
	DSE4P: Digital Signal Processing (Lab)	Digital Signal Processing (Lab)	Mr. Jadab Kumar Samanta, and Mr. Sourav Mishra	16

Physics General Teaching Plan 2019-20

Semester	Paper	Unit/Module	Teacher	No. of lectures
Semester-1	DSC-1A(CC-1): Mechanics	Vectors, Ordinary Differential Equations,	Mr. Kali Krishna Giri	14
		Laws of Motion, Momentum and Energy, Rotational Motion	Mr. Sourav Mishra	14
		Gravitation, Oscillations, Elasticity, Special Theory of Relativity	Mr. Swadesh Ranjan Bhakta	18
	DSC 1AP: Mechanics (Practical)	DSC 1AP: Mechanics (Practical)	Mr. Jadab Kumar Samanta	20
Semester-II	DSC1BT: Electricity and Magnetism	Vector Analysis, Electrostatics	Mr. Kali Krishna Giri	16
		Magnetism, Electromagnetic Induction	Mr. Sourav Mishra	12
		Maxwell`s equations and Electromagnetic wave propagation	Mr. Swadesh Ranjan Bhakta	14
	DSC1BP: Electricity and Magnetism Practical	DSC1BP: Electricity and Magnetism Practical	Mr. Jadab Kumar Samanta	22
Semester-III	DSC1CT: Thermal Physics and Statistical Mechanics	Thermodynamic Description of system, Thermodynamic Potentials,	Mr. Kali Krishna Giri	16
		Kinetic Theory of Gases, Theory of Radiation, Statistical Mechanics	Mr. Swadesh Ranjan Bhakta	20
	DSC1CP: Thermal	DSC1CP: Thermal Physics	Mr. Jadab Kumar	22

	Physics and Statistical Mechanics (lab)	and Statistical Mechanics (lab)	Samanta & Mr. Sourav Mishra	
	SEC1T: Physics Workshop Skill	SEC1T: Physics Workshop Skill	Mr. Kali Krishna Giri	16
Semester-IV	DSC1DT: Waves and Optics	Superposition of Two Collinear Harmonic oscillations, Superposition of Two Perpendicular Harmonic Oscillations, Waves Motion-General,	Mr. Kali Krishna Giri	16
		Fluids, Sound	Mr. Swadesh Ranjan Bhakta	16
		Wave Optics, Interference;, Michelson's Interferometer, Diffraction, Polarization	Mr. Sourav Mishra	18
	DSC1DP: Waves and Optics (lab)	DSC1DP: Waves and Optics (lab)	Mr. Jadab Kumar Samanta	20
	SEC2T: Electrical Circuits and Network Skills	SEC2T: Electrical Circuits and Network Skills	Mr. Sourav Mishra & Mr. Kali Krishna Giri	16
	Semester-V	DSE1T: Elements of Modern Physics	DSE1T: Elements of Modern Physics	Mr. Swadesh Ranjan Bhakta Mr. Sourav Mishra & Mr. Santipada Maity
DSE1P: Elements of Modern Physics (Practical)		DSE1P: Elements of Modern Physics (Practical)	Mr. Jadab Kumar Samanta	22
SEC3T: Renewable Energy and Energy Harvesting		SEC3T: Renewable Energy and Energy Harvesting	Mr. Kali Krishna Giri	15
SEC3P: Practical		SEC3P: Practical	Mr. Kali Krishna Giri	10

Semester-VI	DSE2T: Solid State Physics	Crystal Structure, Elementary Lattice Dynamics	Mr. Swadesh Ranjan Bhakta	12
		Magnetic Properties of Matter, Dielectric Properties of Materials	Mr. Santipada Maity	16
		Elementary band theory, Superconductivity	Mr. Sourav Mishra	14
	DSE2P: Solid State Physics (Practical)	DSE2P: Solid State Physics (Practical)	Mr. Jadab Kumar Samanta	18
	SEC4T: Weather Forecasting	SEC4T: Weather Forecasting	Mr. Kali Krishna Giri	15
	SEC-4P: Practical	SEC-4P: Practical	Mr. Kali Krishna Giri	10