

# YogodaSatsangaPalpara Mahavidyalaya

## DEPARTMENT OF PHYSICS

### HONOURS TEACHING PLAN 2018-19

Semester	Paper	Unit/Module	Teacher	No. oflectures	To becompletedby	
Semester-1	C1T: Mathematical Physics-I	Vector Calculus	Mr. Kali Krishna Giri	15	1 <sup>st</sup> & 2 <sup>nd</sup> month	
		Orthogonal Curvilinear Coordinates		6	3 <sup>rd</sup> month	
		Calculus	Mr. Santipada Maity	15	1 <sup>st</sup> & 2 <sup>nd</sup> month	
		Introduction to probability		7	3 <sup>rd</sup> month	
		Dirac Delta function and its properties		8	4 <sup>th</sup> month	
	C1P1 – Mathematical Physics Lab	Mathematical Physics Lab	Dr. Arindam Pal	20	1 <sup>st</sup> to 3 <sup>rd</sup> Month	
	C2T2: Mechanics	Fundamentals of Dynamics	Fundamentals of Dynamics	Dr. Arindam Pal	10	1 <sup>st</sup> month
			Work and Energy		8	2 <sup>nd</sup> month
			Collisions		6	3 <sup>rd</sup> Month
			Rotational Dynamics		10	3 <sup>rd</sup> & 4 <sup>th</sup> Month
			Non-Inertial Systems		6	5 <sup>th</sup> Month
		Elasticity,	Elasticity,	Mr. Swadesh Ranjan Bhakta	5	1 <sup>st</sup> month
			Fluid Motion		5	2 <sup>nd</sup> month
		Special Theory of Relativity	Special Theory of Relativity	Mr. Sourav Mishra	10	1 <sup>st</sup> & 2 <sup>nd</sup> month
		Oscillations	Oscillations	Mr. Kali Krishna Giri	3	2 <sup>nd</sup>
		Gravitation	Gravitation		4	2 <sup>nd</sup> and 3 <sup>rd</sup> month
	Central Force Motion	Central Force Motion	5		3 <sup>rd</sup> month	
C2 P2: Mechanics Lab	Mechanics Lab	Dr. Arindam Pal	22	1 <sup>st</sup> to 4 <sup>th</sup> Month		

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

		Holography		4	4 <sup>th</sup> and 5 <sup>th</sup> Month
	C4 P – Wave and Optics Lab	Wave and Optics Lab	Dr. Arindam Pal and Mr. Jadab Kumar Samanta	22	1 <sup>st</sup> to 5 <sup>th</sup> Month
	GE2 T - Thermal Physics and Statistical Mechanics	Laws of Thermodynamics, Thermodynamical Potentials, Enthalpy, Gibbs, Helmholtz and Internal Energy functions,	Mr. Kali Krishna Giri	10	1 <sup>st</sup> to 2 <sup>nd</sup> Month
		Maxwell's relations and applications - Joule-Thompson Effect, Clausius-Clapeyron Equation, Expression for (CP – CV), CP/CV, TdS equations.	Dr. Arindam Pal	14	2 <sup>nd</sup> and 3 <sup>rd</sup> month
		Kinetic Theory of Gases, Theory of Radiation, Statistical Mechanics	Mr. Swadesh Ranjan Bhakta	20	1 <sup>st</sup> to 3 <sup>rd</sup> Month
	GE2 P – Thermal Physics and Statistical (Lab)	Thermal Physics and Statistical (Lab)	Dr. Arindam Pal and Mr. Jadab Kumar Samanta,	22	1 <sup>st</sup> to 5 <sup>th</sup> Month
SEM III	C5T: Mathematical Physics-II	Fourier Series	Mr. Kali Krishna Giri	10	1 <sup>st</sup> and 2 <sup>nd</sup> Month
		Frobenius Method		8	3 <sup>rd</sup> and 4 <sup>th</sup> Month
		Special Functions		6	4 <sup>th</sup> and 5 <sup>th</sup> Month
		Some Special Integrals	Mr. SantipadaMaity	6	1 <sup>st</sup> Month
		Variational calculus in physics		8	2 <sup>nd</sup> and 3 <sup>rd</sup> Month
		Partial Differential Equations		10	3 <sup>rd</sup> and 4 <sup>th</sup> Month
	C5P: Mathematical Physics II Lab	Mathematical Physics II Lab	Mr. SantipadaMaity	18	1 <sup>st</sup> to 5 <sup>th</sup> Month
	C6T: Thermal Physics	Introduction to Thermodynamics,	Dr. Arindam Pal	3	1 <sup>st</sup> Month
		Thermodynamic Potentials		6	2 <sup>nd</sup> Month
		Maxwell's Thermodynamic Relations		10	3 <sup>rd</sup> and 4 <sup>th</sup> Month
Kinetic Theory of Gases		Mr. Swadeshranjan Bhakta	16	1 <sup>st</sup> to 3 <sup>rd</sup> Month	
C6P: Thermal Physics Lab	Thermal Physics Lab	Dr. Arindam Pal and Mr. Jadab Kumar Samanta	20	1 <sup>st</sup> to 5 <sup>th</sup> Month	

	C7T: Digital Systems and Applications	Digital Systems and Applications	Mr. Sourav Mishra	24	1 <sup>st</sup> to 5 <sup>th</sup> Month
	C7P: Digital Systems and Applications Lab	Digital Systems and Applications Lab	Mr. Jadab Kumar Samanta, Sourav Mishra	20	1 <sup>st</sup> to 5 <sup>th</sup> Month
	GE3T: Solid State Physics	Crystal Structure Elementary Lattice Dynamics Magnetic Properties of Matter	Dr. Arindam Pal	16	1 <sup>st</sup> to 4 <sup>th</sup> Month
		Dielectric Properties of Materials, Elementary band theory, Superconductivity	Mr. SantipadaMaity	18	1 <sup>st</sup> to 4 <sup>th</sup> Month
	GE3 P: Solid State Physics Lab	Solid State Physics Lab	Dr. Arindam Pal and Mr. Jadab Kumar Samanta,	20	1 <sup>st</sup> to 5 <sup>th</sup> Month
	SEC1T – Physics Workshop Skill	Physics Workshop Skill	Mr. Kali Krishna Giri	18	1 <sup>st</sup> to 4 <sup>th</sup> Month
		Electrical Circuits and Network Skills	Mr. Sourav Mishra	18	1 <sup>st</sup> to 4 <sup>th</sup> Month
SEM-IV	C8T: Mathematical Physics III	Complex Analysis, ,	Mr. Kali Krishna Giri	10	1 <sup>st</sup> to 2 <sup>nd</sup> Month
		Integrals Transforms		10	3 <sup>rd</sup> and 4 <sup>th</sup> Month
		Matrices,	Mr. SantipadaMaity	10	1 <sup>st</sup> to 2 <sup>nd</sup> Month
		Eigen-values and Eigenvectors		10	3 <sup>rd</sup> and 4 <sup>th</sup> Month
	C8P: Mathematical Physics III Lab	Mathematical Physics III Lab	Dr. Arindam Pal	20	1 <sup>st</sup> to 5 <sup>th</sup> Month
	C9T: Elements of Modern Physics	Elements of Modern Physics	Dr. Arindam Pal	28	1 <sup>st</sup> to 4 <sup>th</sup> Month

	C9P: Elements of Modern Physics Lab	Elements of Modern Physics Lab	Mr. Jadab Kumar Samanta, Dr. Arindam Pal	20	1 <sup>st</sup> to 5 <sup>th</sup> Month
	C10T: Analog Systems and Applications	Semiconductor Diodes, Two-terminal Devices and their Applications,	Mr. Santipada Maity	18	1 <sup>st</sup> to 4 <sup>th</sup> Month
		Bipolar Junction transistors, Field Effect transistors, Amplifiers	Mr. Sourav Mishra	20	1 <sup>st</sup> to 4 <sup>th</sup> Month
	C10P: Analog Systems and Applications Lab	Analog Systems and Applications Lab	Mr. Sourav Mishra & Mr. Jadab Kumar Samanta	22	1 <sup>st</sup> to 5 <sup>th</sup> Month
	SEC2T:	Applied Optics	Mr. Swadesh Ranjan Bhakta	16	1 <sup>st</sup> to 4 <sup>th</sup> Month
	GE4T: Electricity and Magnetism	Vector Analysis, Electrostatics, Magnetism,	Mr. Santipada Maity	18	1 <sup>st</sup> to 4 <sup>th</sup> Month
		Electromagnetic Induction, Maxwell's equations and Electromagnetic wave propagation	Mr. Kali Krishna Giri	18	2 <sup>nd</sup> to 5 <sup>th</sup> Month
	GE4P: Electricity and Magnetism Lab	Electricity and Magnetism Lab	Mr. Jadab Kumar Samanta	18	1 <sup>st</sup> to 5 <sup>th</sup> Month
	GE4T: Digital, Analog Circuits and Instrumentation	Digital, Analog Circuits and Instrumentation	Mr. Sourav Mishra	19	1 <sup>st</sup> to 4 <sup>th</sup> Month
	GE4P: Digital, Analog Circuits and Instruments Lab	Digital, Analog Circuits and Instruments Lab	Mr. Jadab Kumar Samanta & Mr. Sourav Mishra	16	2 <sup>nd</sup> to 5 <sup>th</sup> Month
SEM-V	C11T: Quantum Mechanics and applications	Schrodinger equation, General discussion of bound states in an arbitrary potential,	Mr. Kali Krishna Giri	18	1 <sup>st</sup> to 4 <sup>th</sup> Month
		Quantum theory of hydrogen-like atoms, Atoms in Electric & Magnetic Fields, Atoms in External Magnetic Fields, Many electron atoms	Dr. Arindam Pal	20	2 <sup>nd</sup> to 5 <sup>th</sup> Month
	C11P: Quantum Mechanics and Applications Lab	Quantum Mechanics and Applications Lab	Dr. Arindam Pal,	20	1 <sup>st</sup> to 5 <sup>th</sup> Month

		Solid State Physics	Dr. Arindam Pal	22	1 <sup>st</sup> to 4 <sup>th</sup> Month
	C12P: Solid State Physics Lab	Solid State Physics Lab	Mr. Jadab Kumar Samanta, Dr. Arindam Pal	20	1 <sup>st</sup> to 5 <sup>th</sup> Month
	DSE1T: Classical Dynamics	Classical Mechanics of Point Particles,	Dr. Arindam Pal	18	1 <sup>st</sup> to 4 <sup>th</sup> Month
		Small Amplitude Oscillations, Special Theory of Relativity,	Mr. SantipadaMaity	16	2 <sup>nd</sup> to 4 <sup>th</sup> Month
		Fluid Dynamics,	Mr. SwadeshRanjan Bhakta	16	1 <sup>st</sup> to 3 <sup>rd</sup> Month
	DSE2T:Nuclear and Particle Physics	Nuclear and Particle Physics	Mr. Sourav Mishra &Mr. SantipadaMaity	22	1 <sup>st</sup> to 5 <sup>th</sup> Month
SEM-VI	C13T: Electromagnetic Theory	Maxwell Equations,	Dr. Arindam Pal	8	1 <sup>st</sup> Month
		EM Wave Propagation in Unbounded Media,		12	2 <sup>nd</sup> and 3 <sup>rd</sup> Month
		EM Wave in Bounded Media	Mr. SantipadaMaity	6	2 <sup>nd</sup> Month
		Polarization of Electromagnetic Waves		6	3 <sup>rd</sup> Month
		Wave guides		4	4 <sup>th</sup> Month
		Optical Fibres		5	4 <sup>th</sup> and 5 <sup>th</sup> Month
	C13P: Electromagnetic Theory (Lab)	Electromagnetic Theory (Lab)	Dr. Arindam Pal and Mr. Jadab Kumar Samanta	18	1 <sup>st</sup> to 5 <sup>th</sup> Month
	CC14T: Statistical Mechanics	Statistical Mechanics	Dr. Arindam Pal	25	1 <sup>st</sup> to 4 <sup>th</sup> Month
	C14P: Statistical Mechanics (Lab)	Statistical Mechanics (Lab)	Dr. Arindam Pal&Mr.SantipadaMaity	18	1 <sup>st</sup> to 5 <sup>th</sup> Month
	DSE3T: Communication Electronics	Communication Electronics	SantipadaMaity , Kali Krishna Giri	18	1 <sup>st</sup> to 4 <sup>th</sup> Month

	DSE3P: Communication Electronics (Lab)	Communication Electronics (Lab)	Mr. Jadab Kumar Samanta	16	2 <sup>nd</sup> to 5 <sup>th</sup> Month
	DSE4T: Digital Signal Processing	Digital Signal Processing	Mr. Sourav Mishra	22	1 <sup>st</sup> to 5 <sup>th</sup> Month
	DSE4P: Digital Signal Processing (Lab)	Digital Signal Processing (Lab)	Mr. Jadab Kumar Samanta, and Mr. Sourav Mishra	16	2 <sup>nd</sup> to 5 <sup>th</sup> Month

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## DEPARTMENT OF PHYSICS

### GENERAL TEACHING PLAN 2018-19

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 Physics and Statistical Mechanics (lab)	DSC1CP: Thermal Physics and Statistical Mechanics (lab)	Mr. Jadab Kumar Samanta & Mr. Sourav Mishra	22	
	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	20
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. SantipadaMaity	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