BANKURA ZILLA SARADAMANI MAHILA MAHAVIDYAPITH

DEPARTMENT OF PHYSICS
SYLLABUS DISTRIBUTION FOR THE SESSION 2025-2026 (ODD SEM)
[W.E.F. 07-08-2025]

SEMESTER – I			
Paper	**Topic**	**Teacher**	**Classes/week**
Major (MJC-1) [Th.] [Mechanics & GPM] [S/PHS/101/MJC-1]	Vector Calculus, Fundamentals of Dynamics, Elasticity	SD	05
	Work and Energy, Rotational Dynamics	SM2	
	Fluid Motion	AG	
	Gravitation and Central Force Motion	SM1	
Major (MJC-1) [Pr.] [Mechanics & GPM Lab] [S/PHS/101/MJC-1]	Spring constant	SD/GM	02
	Young's modulus		
	Stoke's method		
	Bar Pendulum.		
	Kater's Pendulum		
Minor (MN-1) [Th.] [Mechanics & GPM] [S/PHS/102/MN-1]	Vector Calculus, Fundamentals of Dynamics	SD	04
	Work and Energy, Rotational Dynamics	SM2	
	Fluid Motion, Elasticity	GM	
	Gravitation and Central Force Motion.	SM1	
Minor (MN-1) [Pr.] [Mechanics & GPM Lab] [S/PHS/102/MN-1]	Spring constant	SM1	02
	Young's modulus		
	Stoke's method		
	Bar Pendulum.		
	Kater's Pendulum		

SEMESTER – I			
Paper	**Topic**	**Teacher**	**Classes/week**
SEC-1 [Th.] **[Basic of computer and Python programming]** [S/PHS/104/SEC-1]	**Chapter 1 to Chapter 4**	**GM**	**03**
	Chapter 5	**AG**	
SEC-1 [Pr.] **[Basic of computer and Python programming Lab]** [S/PHS/104/SEC-1]	**Full Paper**	**GM**	**02**
Multidisciplinary (MD-1) **[Fundamental of Physics-I]** [S/PHS/103/MD-1]	**Vector analysis, Laws of motion**	**GM**	**04**
	Momentum and energy, Rotational motion, Electrostatics	**SM2**	
	Special theory of relativity, Sound	**AG**	
	Gravitation, Elasticity	**SM1**	

SEMESTER – III			
Paper	**Topic**	**Teacher**	**Classes/week**
Major (MJC-3) [Th.] **[Mathematical Physics-I]** [S/PHS/301/MJC-3]	**Orthogonal Curvilinear Coordinates, Fourier Series, Special Functions**	SD	04
	Differential Equation	SM1	
	Frobenius Method	SM2	
Major (MJC-3) [Pr.] **[Mathematical Physics-I Lab]** [S/PHS/301/MJC-3]	**Program-1 to Program-6**	SD/GM	02
Major (MJC-4) [Th.] **[Waves & Oscillation]** [S/PHS/302/MJC-4]	**Superposition of Collinear Harmonic Oscillations, Damped and Forced Oscillations, Technical Acoustics**	GM	02
	Wave Motion, Vibration of Strings, Doppler Effect and Acoustics of Buildings	AG	
Major (MJC-4) [Pr.] **[Waves & Oscillations Lab]** [S/PHS/302/MJC-4]	**Verification of laws of vibrations of stretched string- Sonometer**	SM2/GM	02
	To study Lissajous figures		
	To investigate the Motion of Coupled Oscillators.		
	Melde's Experiment		
Minor (MN-3) [Th.] **[Waves & Oscillation]** [S/PHS/303/MN-3]	**Superposition of Collinear Harmonic oscillations, Damped and Forced Oscillations.**	SM1	03
	Wave Motion, Superposition of Two Harmonic Waves	AG	
	Acoustics of Buildings	SM2	
Minor (MN-3) [Pr.] **[Waves & Oscillation Lab]** [S/PHS/303/MN-3]	**Verification of laws of vibrations of stretched string- Sonometer**	AG	02
	To study Lissajous figures		
	To investigate the motion of coupled oscillators		
	Melde's Experiment		

SEMESTER – III			
Paper	**Topic**	**Teacher**	**Classes/week**
SEC-3 [Th.] **[Introduction to Laser and Fibre Optics]** **[S/PHS/305/SEC-3]**	**Chapter 1 & Chapter 2**	SM1	**02**
	Chapter 3 & Chapter 4	GM	
SEC-3 [Pr.] **[Introduction to Laser and Fibre Optics Lab]**	**Measurement of wavelength of LASER beam using diffraction grating**	AG/GM	**02**
	To determine acceptance angle and numerical aperture of an optical fiber		
	Measurement of transmission loss and bending loss in optical fiber		
Multidisciplinary (MD-3) **[Fundamental of Physics-III]** **[S/PHS/304/MD-3]**	**Fossil fuels and Alternate Sources of energy, Solar energy, Wind Energy harvesting**	GM	**03**
	Ocean Energy, Geothermal Energy, Hydro Energy	AG	
	Piezoelectric Energy harvesting, Electromagnetic Energy Harvesting	SD	

SEMESTER – V			
Paper	**Topic**	**Teacher**	**Classes/week**
Major (MJC-9) [Th.] **[Mathematical Physics-III]** [S/PHS/501/MJC-9]	**Integral Transform**	**GM**	**02**
	Linear Vector Space	**AG**	
Major (MJC-9) [Pr.] **[Mathematical Physics-III Lab]** [S/PHS/501/MJC-9]	**Full paper**	**AG/GM**	**02**
Major (MJC-10) [Th.] **[Quantum Mechanics-I]** [S/PHS/502/MJC-10]	**Origin of quantum theory**	**GM**	**03**
	Fundamental of Quantum Mechanics, The Schrodinger Equation	**SD**	
	Application	**SM1**	
Major (MJC-10) [Pr.] **[Quantum Mechanics-I Lab]** [S/PHS/502/MJC-10]	**Work function of a material**	**SM1**	**02**
	Wavelength of h-alpha emission line of hydrogen		
	Determination of e/m		
	Boltzmann Constant using PN diode		
Major (MJC-11) [Th.] **[Digital Systems & Applications]** [S/PHS/503/MJC-11]	**Number System, Digital Circuits, implementation of different digital circuits, Data processing circuits**	**SM2**	**02**
	Sequential circuit, Registers and Counters, Data processing	**GM**	
Major (MJC-11) [Pr.] **[Digital Systems & Applications Lab]** [S/PHS/503/MJC-11]	**Basic gates using diodes and resistors**	**SD**	**02**
	Basic gates using transistors		
	NAND/NOR as universal gate		
	Half Adder & Full Adder		
	Construction of SR, D, JK FF		

SEMESTER – V			
Paper	**Topic**	**Teacher**	**Classes/week**
Major (MJC-12) [Th.] **[Optics & EM Theory]** **[S/PHS/504/MJC-12]**	**Interference, Diffraction**	**AG**	**03**
	Polarization, Maxwell's Equations	**SM1**	
	Propagation of EM wave in unbounded media, Propagation of EM wave in bounded media	**SM2**	
Major (MJC-12) [Pr.] **[Optics & EM Theory Lab]** **[S/PHS/504/MJC-12]**	**Verification of Malus Law**	**SM2/GM**	**02**
	Polarimeter		
	Refractive index of glass and material of prism		
	Resolving power of grating		
	Dispersive power of prism		
Minor (MN-5) [Th.] **[Digital Systems & Applications]** **[S/PHS/505/MN-5]**	**Number systems, Digital Circuits**	**SM1**	**02**
	Sequential circuits	**SD**	
Minor (MN-5) [Ph.] **[Digital Systems & Applications Lab]** **[S/PHS/505/MN-5]**	**Basic gates using diodes and resistors**	**SM2**	**02**
	Basic gates using transistors		
	NAND/NOR as universal gate		
	Half Adder & Full Adder		
	Construction of SR, D, JK FF		