BANKURA ZILLA SARADAMANI MAHILA MAHAVIDYAPITH

DEPARTMENT OF PHYSICS

SYLLABUS DISTRIBUTION FOR THE SESSION 2024-2025 (EVEN SEM)
[W.E.F 17-03-2025]

SEMESTER – II (NEP) [2023-24]			
Paper	**Topic**	**Teacher**	**Classes/week**
MJC-2 [Th.] **[Electricity and Magnetism]** [S/PHS/201/MJC-2]	Electric Field and Electric Potential.	GM	01
	Dielectric Properties of Matter.	SD	01
	Magnetic Field, Electrical Circuits, Network theorems.	SM2	01
	Electromagnetic Induction and Magnetic Properties of Matter.	SM1	01
MJC-2 [Pr.] **[Electricity and Magnetism Lab]** [S/PHS/202/MJC-2]	Thevenin, Norton and Maximum power	SD/GM	02
	Series LCR circuit		
	Parallel LCR circuit		
	Platinum resistance thermometer		
	One Ohm coil		
MN-2 [Th.] **[Electricity and Magnetism]** [S/PHS/201/MN-2]	Electric Field and Electric Potential, Network theorems.	GM	03
	Dielectric Properties of Matter, Magnetic Field.	SM1	
	Electromagnetic Induction, Electrical Circuits.	SD	
MN-2 [Pr.] **[Electricity and Magnetism Lab]** [S/PHS/202/MN-2]	Thevenin, Norton and Maximum power	SM1+SD	02
	Series LCR circuit		
	Parallel LCR circuit		
	Platinum resistance thermometer		
	One Ohm coil		

SEMESTER – II (NEP) [2023-24]

Paper	Topic	Teacher	Classes/week
SEC-2 [Th.] (Basic Instrumentation Skills) [S/PHS/204/SEC-2]	Chapter 1	AG	01
	Chapter 2	SM2	01
	Chapter 3	GM	01
	Chapter- 4	SD	01
SEC-2 [Pr.] (Basic Instrumentation Skills Lab) [S/PHS/204/SEC-2]	Measurement of a low resistance using a Carry-Foster bridge	AG/GM	04
	Measurement of a current through low resistance using a potentiometer.		
	Converting the range of a given measuring instrument		
	Measurement of voltage, frequency, time period and phase angle using CRO.		
MD-2 (Fundamental of Physics-II) [S/PHS/203/MD-2]	Magnetic field and Electromagnetic induction Magnetic properties of materials	SM2	01
	Kinetic Theory of Gases, Laws of Thermodynamics	SD	01
	Introduction of Modern Physics	SM1	01

SEMESTER – IV (NEP) [w.e.f. 2023-24]			
Paper	**Topic**	**Teacher**	**Classes/week**
MJC-5 [Th.] **[Mathematical Physics-II]** [S/PHS/401/MJC-5]	Complex numbers, Complex line integrals.	AG	02
	Matrix algebra, Introduction to Probability, Delta functions.	GM	
MJC-5 [Pr.] **[Mathematical Physics-II Lab]**	SCILAB	GM	02
MJC-6 [Th.] **[Heat & Thermodynamics]** [S/PHS/402/MJC-6]	Kinetic Theory of Gases, Real Gases	SD	03
	Introduction to Thermodynamics	SM1	
	Thermodynamic Potentials and Maxwell's equations		
MJC-6 [Pr.] **[Heat & Thermodynamics Lab]**	J by Callender and Barne's, method	AG/GM	02
	Thermal Conductivity of Cu by Searle's Apparatus		
	Thermal Conductivity of a bad conductor by Lee and Charlton's disc method		
	Temperature Coefficient of Resistance by Platinum Resistance Thermometer		
	Thermo-emf of a Thermocouple		
MJC-7 [Th.] **[Classical Mechanics]** [S/PHS/403/MJC-7]	Constrained motion, Lagrangian formulation, Hamiltonian Mechanics.	SD	02
	Special Theory of Relativity.	SM2	
MJC-7 [Pr.] **[Classical Mechanics Lab]**	Moment of inertia of flywheel	SM1	02
	Maxwell needle		
	Moment of Inertia of a metallic cylinder/ rectangular bar		
	Young's Modulus of a Wire by Optical Lever Method		

SEMESTER – IV (NEP) [w.e.f. 2023-24]			
Paper	**Topic**	**Teacher**	**Classes/week**
MJC-8 [Th.] [Analog Electronics systems and Applications] [S/PHS/404/MJC-8]	Semiconductor Diodes and Applications, Bipolar Junction transistors and Biasing, Field Effect transistors.	SM2	02
	BJT Amplifiers, Feedback in Amplifiers, Operational Amplifiers, Oscillators.	GM	
MJC-8 [Pr.] [Analog Electronics systems and Applications Lab]	V-I characteristics of PN junction diode, and Light emitting diode.	SD/GM	02
	Characteristics of a Bipolar Junction Transistor in CE configuration.		
	To investigate the use of an Op-Amp. (741) as (i) inverting amplifier (ii) non-inverting amplifier (iii) two input adder (iv) subtractor for dc voltage of given gain.		
	Wien bridge oscillator for given frequency using an op-amp.		
MN-4 [Th.] [Heat & Thermodynamics] [S/PHS/405/MN-4]	Kinetic Theory of Gases, Real Gases.	AG	02
	Introduction to Thermodynamics.	SM2	
	Thermodynamic Potentials and Maxwell's equations.		
MN-4 [Pr.] [Heat & Thermodynamics Lab]	Thermal Conductivity of Cu by Searle's Apparatus.	SM2+AG	02
	Thermal Conductivity of a bad conductor by Lee and Charlton's disc method.		
	J by Callender and Barne's, method		

Paper	Topic	Teacher	Classes/week
SEMESTER – VI (CBCS-NEW) [w.e.f. 2022-23]			
Core-13 (T-13) [Electromagnetic Theory]	Maxwell Equations, EM Wave Propagation in Unbounded Media, EM Wave in Bounded Media.	SM2	
	Polarization of Electromagnetic Waves, Wave guides, Optical Fibres.	GM	
Core-13 (P-13) [Electromagnetic Theory Lab]	Verify the law of Malus.	AG	
	Polarimeter		
	Analyze elliptically polarized Light by using a Babinet's compensator.		
	Study the reflection, refraction of microwaves/ Stefan's law		
	Velocity of ultrasonic waves in a liquid		
Core-14 (T-14) [Statistical Mechanics]	Classical Statistical Mechanics, Classical Theory of Radiation	SM1	
	Quantum Theory of Radiation, Bose-Einstein Statistics, Fermi-Dirac Statistics.	AG	
Core-14 (P-14) [Statistical Mechanics Lab]	Experiment No-1	GM	
	Experiment No-2		
	Experiment No-3		
	Experiment No-4		
	Experiment No-5		
DSE-3 [Physics of Earth]	The Earth and the Universe	GM	
	Structure	AG	
	Dynamical Processes	SD	
	Evolution	SD	
	Disturbing the Earth – Contemporary dilemmas	AG	
DSE-4 [Nanomaterials and Applications]	Nanoscale Systems, Synthesis of Nanostructure Materials, Characterization	GM	
	Optical Properties	SD	
	Electron Transport, Applications.	SM2	
DSE-4 [Nanomaterials and Applications Lab]		SM2/GM	