MAHISHADAL RAJ COLLEGE
DEPARTMENT OF PHYSICS

COURSE OUTCOME (CO)

B. Sc. (GENERAL)

SUBJECT: PHYSICS

Semester	Paper Code & Name	Course Outcome	
I	DSC 1A (Mechanics)	CO1	To study Vector algebra and ordinary differential equations.
		CO2	To study laws of motion, momentum and energy and rotational motion.
		CO3	Understanding gravitation, oscillation, and elasticity.
		CO4	To study special theory of relativity.
	DSC 1AP	CO1	To determine moment of inertia of a flywheel, Young modulus of a wire, modulus of rigidity, elastic constant.
		CO2	To determine g by bar pendulum, katers pendulum.
II	DSC 1B (Electricity & Magnetism)	CO1	Study vector analysis to understand different phenomena like electric and magnetic fields, curl, divergence, etc. of the electric field considered as a vector quantity.
		CO2	Study of electrostatics and magnetism.
		CO3	Study of electromagnetic induction
		CO4	To understand Maxwell`s equations and Electromagnetic wave propagation.
	DSC 1BP	CO1	To use a multimeter for measuring Resistance AC, DC voltage, DC current.
		CO2	To study RC and LCR circuits. Also, to verify Thevenin and Norton theorem.
III	DSC 1CT (Thermal Physics & Statistical Mechanics)	CO1	Understanding of thermodynamic law of the system, Introduction of Entropy,
		CO2	Concept of thermodynamic potentials.
		CO3	Study of Kinetic theory of gases.
		CO4	Study of the theory of radiation and statistical mechanics.
	DSC 1CP	CO1	Measurements of Planck's constant and Stefan's constant. To determine the coefficient of thermal conductivity of copper by Searle's apparatus.
		CO2	To determine the temperature coefficient of resistance by Platinum resistance thermometer, To study the variation of thermo EMF across two junctions of a thermocouple with temperature.

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IV	DSC 1DT (Waves and Optics)	CO1	To study the superposition of collinear and perpendicular Harmonic oscillations.
		CO2	Concept of sound and understanding of its different properties like Intensity, loudness, musical notes, etc.
		CO3	To study the electromagnetic nature of light and study Huygens's principle.
		CO4	Understanding interference and diffraction. Concept of the different interferometer. Understanding the concept of polarization.
	DSC 1DP	CO1	Familiarization with Schuster`s focussing; determination of the angle of the prism, to determine the Refractive Index of the Material of a given Prism using Sodium Light, Newton's Rings experiments.
		CO2	To determine the wavelength of Laser light using the Diffraction of a Single Slit. To determine the Resolving Power of a Plane Diffraction Grating.
V	DSE 1T (Elements of Modern Physics)	CO1	Concept of Planck's quantum, Planck's constant; Photo-electric effect, and Compton scattering. De Broglie wavelength and matter waves.
		CO2	Understanding wave-particle duality, Heisenberg uncertainty principle.
		CO3	To study two slit interference experiments. The Schrodinger equation for non-relativistic particles, Momentum, and Energy operators, stationary states, and physical interpretation of wave function.
		CO4	To study the size and structure of the atomic nucleus and its relation with atomic weight, Understand the nature of nuclear force, NZ graph, semi-empirical mass formula, and binding energy. To study radioactivity. To study Fission and fusion.
	DSE 1P	CO1	To determine the value of the Boltzmann constant using the V-I characteristic of the PN junction. To determine the value of Planck's constant using LEDs of at least 4 different colors.
		CO2	Photo-electric effect: photocurrent versus intensity and wavelength of light; maximum energy of photo-electrons versus frequency of light.
VI	DSE 2T (Digital and Analog Circuits and Instrumentation)	CO1	Introduction of analog and digital circuit, Binary and Binary to Decimal Conversion. Knowing AND, OR, and NOT & Boolean Laws, Binary Addition, Subtraction, different types of adders, and Full Adders and Subtractors.
		CO2	To study semiconductor diodes and Bipolar junction transistors.
		CO3	To study operational amplifiers and their use as Inverting and Non-inverting Amplifiers, Adder, Subtractor, Differentiator, and Integrator.
		CO4	Introduction of instrumentations. Introduction of CRO: Study of Waveform, Voltage, Current, Frequency, and Phase Difference. Different kinds of rectifiers and their uses, Zener Diode and Voltage Regulation, Timer IC.
	DSE 2P	CO1	To measure (a) Voltage, and (b) Frequency of a periodic waveform using a CRO To verify and design AND, OR, NOT, and XOR gates using NAND gates. To study IV characteristics of PN diode, Zener, and Light emitting diode. Experiments on timer and transistor.
		CO2	To design a CE amplifier of a given gain (mid-gain) using voltage divider bias. To design an inverting, non-inverting amplifier of given gain using Op-amp 741 and study their frequency response.