Telangana Tribal Welfare Residential Degree College for Men, Kamareddy

Sarampally X Road, Kamareddy, 503111

Ph: 7901097707

Department of Physics

Course Outcomes

Semester I – Mechanics and Oscillations

CO 1	To understand the physical significance of gradient of scalar field, Divergence and curl of vector fields
CO 2	To understand the application of Gauss‘s, Stokes & Green‘s theorems.
CO 3	To understand the concept of variable mass system and motion of rocket.Collisions in 2D &3D. Rutherford‘s scattering experiment and its importance.
CO 4	Basic understanding of central force with Examples. Derivation of Kepler‘s laws.
CO 5	To understand the concepts of inertial and non-inertial frames Lorentz transformations, length contraction &time dilation.
CO 6	Understand physical characteristics of SHM and obtaining solution of the oscillator using differential equations
CO 7	To understand damped & forced oscillations.
CO 8	Calculate logarithmic decrement relaxation factor and quality factor of a harmonic oscillator
CO 9	Use Lissajous figures to understand simple harmonic vibrations of same frequency and different frequencies

Semester II - Thermal Physics

CO 1	Gain knowledge of particleparticle collisions in Kinetic theory of gases and derivation of Maxwell's Speed distribution law.
CO 2	Understand the Transport phenomenon of gases.Have a clear idea of concept of Entropy and the changes in entropy for various thermodynamic processes.
CO 3	Know about Thermodynamic potentials and arrive at Maxwell's Thermodynamic relations and applications.
CO 4	To understand the concept of low temperature physics. Various experiments related to low temperature physics. To know Adiabatic demagnetization,
CO 5	To get the idea of various laws of quantum theory of radiation
CO 6	Understand elementary concepts of statistics and statistical distribution of system of particles.

Semester III - Electromagnetic Theory

CO 1	Acquire knowledge on basic concepts of Electric and Magnetic fields.
CO 2	Realize the importance of applications of Gauss's law, Biot-Savort law, Faraday's laws, Ampere's law and Maxwell's electromagnetic equations.
CO 3	Understand the concept of static and time varying fields.
CO 4	Gain knowledge on EM waves, propagation and their properties.
CO 5	To understand the fundamental Maxwell's equations & Pyonting theorem.
CO 6	To understand the effect of AC current through pure resistance, capacitance &inductance & in combination.I

Semester IV - Waves and Optics

CO 1	Solve wave equation and understand significance of transverse waves.
CO 2	Solve wave equation of a longitudinal vibration in bars.
CO 3	Obtain boundary conditions of a longitudinal vibration in bars free at one end and also fixed at both the ends.
CO 4	To understand the transverse vibrations in a string. Laws of vibrations in a string. Harmonics & overtones, transport phenomena.
CO 5	Understand the properties of light like reflection, refraction, interference, diffraction etc.
CO 6	To understand principle of superposition. Understand the applications of interference in design and working of interferometers.
CO 7	To understand the difference between Fresnel & Fraunhoffer Diffraction. Concepts of half period zones.
CO 8	Understand the resolving power of different optical instruments.

Semester V - Modern Physics

CO 1	To understand the difference between Atomic and Molecular spectroscopies.
CO 2	Understand the intuitive ideas of the Quantum physics and Nuclear physics.
CO 3	Derive Schrodinger time dependent and time independent wave equations .
CO 4	To understand dual nature of matter.
CO 5	To get the idea of Alpha Beta decay & various theories.
CO 6	Gain knowledge on classification of various crystal systems. Understand the basics of crystallography, x-ray diffraction and Superconductivity.

Semester VI - Electronics

CO 1	Basic knowledge of Energy band theory and formation of P N Junction.
CO 2	Understand the characteristics of PN Junction diode and Zener diode and their applications.
CO 3	Extended knowledge about types of Transistors along with different configurations and applications.
CO 4	Knowledge of the Concept of feed-back and Oscillators.
CO 5	To gain knowledge on devices such as Solar Cell, Photodiode, SCR, FETs etc.
CO 6	Gain knowledge about different Logic gates and performing DeMorganization of Boolean expressions.
CO 7	Familiar about different types of Number systems – Conversions and Binary Arithmetic application to digital study.