Yashwantrao Chavan College of Science, Karad

Department of Physics

PHYSICS COURSE OUTCOMES

Academic Year 2024-2025

Annexure-c

Course Outcomes: BSc. I Paper I: DSC-1 A MECHANICS	
By the end of this Course student should be able to know about:	
CO1:	Students are able to understand and identify scalar and vector physical quantities in mechanics
CO2:	Students are able to understand and apply vector algebraic methods to elementary exercises in mechanics
CO3:	Students are able to understand and apply basic concepts of rotational motion
CO4:	In general, students are capable of correlating above concepts and methods in mechanics to both theoretical and experimental domains revealing analytical as well as numerical skills
BSc. I Paper I: DSC-2A ELECTRICITY & MAGNETISM-I	
By the end of this Course student should be able to know about:	
CO1:	Students are able to understand the physical significance of gradient, divergence and curl
CO2:	Students are able to apply concepts in vector calculus such as gradient, divergence and curl related to vector and scalar fields using Gauss, Stokes and green`s theorem
CO3:	Students are able to understand and apply concepts of electrostatic field, potential to point charges, electric dipole and geometrically regular charged bodies
CO4:	Students are able to understand and apply concept of energy density in electric field

CO5:	Students are capable of applying above concepts to solve numerical exercise in electrostatics
BSc. I Sem-I: DSC- PHYSICS Practical -I	
By the end of this Course student should be able to know about:	
CO1:	Apply fundamental mechanical principles: Utilize concepts like moment of inertia, simple harmonic motion, and gravity to design and conduct experiments, analysing and interpreting results.
CO2:	Develop experimental skills: Demonstrate competence in setting up apparatus, taking precise measurements, and calculating uncertainties, understanding limitations and sources of error.
CO3:	Explore electrical components and circuits: Classify and characterize resistors, capacitors, and galvanometers based on their properties and roles in circuits, measuring resistance and magnetic field strength.
CO4:	Investigate wave phenomena and their interactions: Analyze the behavior of sound waves in different media (magnetic vs. non-magnetic), employing a sonometer to determine frequency and comprehend the influence of material properties.
BSc. I Paper III: DSC-1B PROPERTIES OF MATTER	
By the end of this Course student should be able to know about:	
CO1:	Students are able to revise basic concepts such as stress, strain and elastic constants of elasticity
CO2:	Students are able to derive elastic constants for beam supported at both ends and at one end
CO3:	Students are able to derive elastic constant (eta) of a wire under torsional oscillations (Searle's Method)

CO4:	Students are able to explain the phenomenon of surface tension on the basis of molecular forces
CO5:	Students are able to derive the relation between surface tension and excess pressure
CO6:	Students are able to perform an experiment to determine ST by Jaeger`s method
CO7:	Students are able to discuss and state the factors affecting the ST
CO8:	Students are able to understand fluid dynamics and its applications
CO9:	Students are able to understand viscosity and experimental determination of coefficient of viscosity of liquid by Poiseuille's method
CO10:	Students are able to understand effect of temperature and pressure on viscosity of liquid.
CO11:	In general, students are capable of correlating above concepts and methods to both theoretical and experimental domains revealing analytical as well as numerical skills
BSc. I Paper III: DSC-2B ELECTRICITY & MAGNETISM-II	
By the end of this Course student should be able to know about:	
CO1:	Students are able to understand importance of complex numbers in analysis of AC Circuits contacting Inductance(L) Capacitor(C) and Resistance (R) and their various configurations
CO2:	Students are able to define and apply the concepts in AC circuits such as Impedance (Z), reactance (XC and XL), Admittance, Susceptance and Quality Factor (Q)
CO3:	Students are able to understand and design AC bridge: Owen`s Bridge
CO4:	Students are able to understand basic working principle of Ballistic galvanometer
CO5:	Students are able to define constants of ballistic galvanometer

CO6:	Students are able to understand the explain the phenomenon of hysteresis in magnetism
Co7:	Students are able to discriminate different magnetic materials based on their characteristic properties
BSc. I Sem-II: DSC- PHYSICS Practical -II	
By the end of this Course student should be able to know about:	
CO1:	Master mechanical measurements and principles: Utilize advanced techniques like Poiseuille's method, bending, and vibration to measure viscosity, Young's modulus, and Poisson's ratio, demonstrating understanding of fluid dynamics and elasticity.
CO2:	Analyze surface tension and its impact: Employ Jaeger's method to investigate surface tension, recognizing its role in various phenomena and its dependence on material properties.
CO3:	Explore AC circuits and impedance: Analyze the behavior of series and parallel LCR circuits, measuring impedance and comprehending the influence of individual components (L, C, R) on resonance and phase relationships.
CO4:	Investigate bridge circuits and transformers: Utilize a B.G. bridge to determine unknown resistances and delve into the principles and applications of transformers, understanding their role in AC power transmission and voltage transformation

Yashwantrao Chavan College of Science ★ Karad ★ PHYSICS

Head,
Department of Physics,
Yashwantrao Chavan
College of Science, Karad
(Satara) 415124
Maharashtra