

❖ COURSE OUTCOMES

B.Sc. I (Physics)
Shivaji University, Kolhapur

Sr.No.	Course Name	Course Outcomes
1.	DSC-I PHYSICS Paper-I Mechanics	1. Students are able to understand and identify scalar and vector physical quantities in mechanics 2. Students are able to understand and apply vector algebraic methods to elementary exercises in mechanics. 3. Students are able to understand and apply basic concepts of rotational motion. 4. In general, students are capable of correlating the above concepts and methods in mechanics to both theoretical and experimental domains revealing analytical as well as numerical skills
2.	DSC-II PHYSICS Paper-II Electricity and Magnetism I	1. Students are able to understand the physical significance of gradient, divergence and curl 2. 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. 3. Students are able to understand and apply concepts of electrostatic field, potential to point charges, electric dipole and geometrically regular charged bodies 4. Students are able to understand and apply concept of energy density in electric field • Students are capable of applying above concepts to solve numerical exercise in electrostatics
3.	DSC PHYSICS Practical I	1. Apply fundamental mechanical principles: Utilize concepts like moment of inertia, simple harmonic motion, and gravity to design and conduct experiments, analyzing and interpreting results.

		2. Develop experimental skills: Demonstrate competence in setting up apparatus, taking precise measurements, and calculating uncertainties, understanding limitations and sources of error. 3. 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. 4. 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.
4.	DSC-III PHYSICS Paper-III Properties of Matter	1. Study the elastic behaviour and working of torsional pendulum 2. Study of bending behaviour beams and analyse the expression for young's modulus. 3. Understand the surface tension and viscosity of fluid. 4. Analyse waves and oscillations. 5. Study the basic properties and production of ultrasonics by different methods.
5.	DSC-IV PHYSICS Paper-IV Electricity and Magnetism II	1. 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 2. 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).

		- Students are able to understand and design AC bridge: Owen's Bridge - Students are able to understand basic working principle of Ballistic galvanometer - Students are able to define constants of ballistic galvanometer - Students are able to understand the explain the phenomenon of hysteresis in magnetism - Students are able to discriminate different magnetic materials based on their characteristic properties.
6.	DSC PHYSICS Practical II	- 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. - 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. - 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. - 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.