Programme Outcomes (PO), Programme Specific Outcomes (PSO) and Course OutComes (CO)

Department of Physics

Govt. College Jhandutta Distt. Bilaspur (H.P.)

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Programme Outcomes (PO), Programme Specific Outcomes (PSO) and Course Outcomes (CO) for B. Sc. With PHYSICS

Department of Physics	After successful completion of three-year degree program in physics a student should be able to;
Programme Outcomes (PO) B.Sc. (Physics)	PO-1. Demonstrate, solve and an understanding of major concepts in all disciplines of physics. PO-2. Solve the problem and also think methodically, independently and draw a logical conclusion. PO-3. Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of Physics experiments. PO-4. Create an awareness of the impact of Physics on the society, and development outside the scientific community. PO-5. To inculcate the scientific temperament in the students and outside the scientific community. PO-6. Use modern techniques, decent equipment and software.
Programme Specific Outcomes (PSO) B.Sc. (Physics)	PSO-1. Gain the knowledge of Physics through theory and practical. PSO-2. Understand good laboratory practices and safety. PSO-3. Develop research-oriented skills. PSO-4. Make aware and handle the sophisticated instruments/equipment.

Course Outcomes (CO) B. Sc. (Physics)

First Year

Course	**Outcomes** After completion of these courses students should be able to;
PHYS101: Mechanics Theory	CO-1. Know the Coordinate systems and motion of a particle. CO-2. To understand the Space Time Symmetry and Conservation Laws CO-3. Discuss the Gravitation and Inverse Square Force Law. CO-4. Rotational Motion and Kinematics of Elastic and Inelastic Collisions CO-5. Study the Special Theory of Relativity.
PHYS102: Electricity, Magnetism and EMT Theory	CO-1. To understand the Vector Analysis. CO-2. To understand the Electric Current and Fields of Moving charges. CO-3. Know the fundamental principles of Magnetism. CO-4. To study Electrostatic Fields in Dielectrics. CO-5. To understand Magnetic Fields in Matter.

Second Year	
PHYS201: Statistical and Thermal Physics Theory	CO-1. Understand Basic Ideas of Statistical Physics. CO-2. Gain the knowledge of Distribution of Particles in Compartments. CO-3. To study different types of Statistics in Physics. CO-4. To know Entropy and Laws of Thermodynamics. CO-5. Understand Maxwell's Thermodynamic Relations and Their Applications. CO-6. To study applications of thermodynamics relations.
PHYS202: Waves and Optics Theory	CO-1. To know and understand the Simple harmonic motion. CO-2. To understand and elaborate the Forced Oscillator and coupled oscillators. CO-3. To learn and understand the concepts of Wave Optics. CO-4. To study and understand the concept of diffraction and polarization.
PHYS203(SEC): Physics Workshop Skill Theory	CO-1. To learn Measuring units and their conversion to SI and CGS. CO-2. To understand the Concept of workshop practice. CO-3. To Understand the concept of Electrical and Electronic Skill. CO-4. Study the gear system, wheel, Fixing of gears with motor axel, Lever mechanism.
PHYS205(SEC): Electrical Circuits and Network Skills	CO-1. To understand Basic Electricity Principles. CO-2. Understanding Electrical Circuits. CO-3. To learn Electrical Drawing and Symbols. CO-4. To study Generators and Transformers, Electric Motors. CO-5. To understand the concept of Electrical Wiring.

Third Year	
PHYS303: Solid State Physics and Electronics	CO-1. Understand Crystal Structure and different types of Crystal Bonding. CO-2. Understand and explain Elementary Lattice Dynamics. CO-3. Learn and elaborate Free electron theory of metals. CO-4. Know and explain Band Theory of Metals and concept of Superconductivity. CO-5. Understand and elaborate the concept of Junction diodes and Transistors. CO-6. Learn and understand the applications of Amplifiers and Oscillators.
PHYS305: Quantum Mechanics	CO-1. Understand the Time dependent Schrodinger equation. CO-2. Know the bound states in an arbitrary potential. CO-3 To understand Quantum theory of hydrogen-like atoms. CO-4. To study Atoms in Electric and Magnetic Fields. CO-5. Learn the behavior of Atoms in External Magnetic Fields.
PHYS307(SEC): Radiation Safety	CO-1. Understand the Basics of Atomic and Nuclear Physics. CO-2. To learn Interaction of Radiation with matter: Types of Radiation. CO-3. To study Radiation detection and monitoring devices. CO-4. Get knowledge of Radiation safety management. CO-5. Understand Application of nuclear techniques.
PHYS310: Renewable Energy and Energy Harvesting	CO-1. To study Fossil fuels and Alternate Sources of energy. CO-2. To study Solar energy and its importance. CO-3. Know the Wind Energy harvesting, Ocean energy. CO-4. Understand the harvesting of Geothermal Energy and hydro energy. CO-5. To study Piezoelectric Energy harvesting and electromagnetic energy.