



“ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार”

-शिक्षणमहर्षी डॉ. बापूजी साळुंखे

Shri Swami Vivekanand Shikshan Sanstha, Kolhapur's

Ramkrishna Paramhansa Mahavidyalaya, Osmanabad

(Affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad)

|| NAAC Reaccredited 'B+' Grade || || DBT-STAR College by Govt. of India ||

|| UGC STATUS: College with Potential for Excellence ||



Course Outcomes

Department of Physics

B.Sc. I year (Semester-I)	
Mechanics and Properties of Matter (PHY-111)	
CO1	Understand Newton's laws and apply them in calculations of the motion of simple systems.
CO2	Use the free body diagrams to analyze the forces on the object.
CO3	Understand the concepts of friction and the concepts of elasticity, fluid mechanics and be able to perform calculations using them.
CO4	Apply the laws of thermodynamics to formulate the relations necessary to analyze a thermodynamic process
CO5	Demonstrate quantitative problem solving skills in all the topics covered
Heat and Thermodynamics (PHY-112)	
CO1	Develop an understanding on the concepts of Heat and Thermodynamics.
CO2	Describe and apply the physical concepts of heat, transport phenomena and laws of thermodynamics.
CO3	Perform calculations of heat conduction in various geometries.
CO4	To develop ability among the students to identify, remember and grasp the meanings, definitions and laws of heat and thermodynamics.
CO5	To develop attitudes such as concern for accuracy and precision, objectivity and enquiry.
B.Sc. I year (Semester-II)	
Optics (PHY-221)	
CO1	Acquire the basic concept of optics and its applications.
CO2	Understand the optical phenomenon such as interference and diffraction
CO3	Explain how image formation takes place in lenses
CO4	Understand the operations of many modern optical devices
Electricity and Magnetism (PHY-212)	
CO1	Develop an understanding on the concepts of Electricity and magnetism.
CO2	To understand the knowledge of various mathematical operations required for electrostatics and magnetostatics.
CO3	Explain the fundamental concepts and operations of vector analysis.
CO4	To increase the ability to perform calculations of various mathematical expressions and laws.
CO5	To develop ability among the students to identify, remember and grasp the meanings, definitions and laws of electricity and magnetism.

B. Sc. II Year (Semester-III)	
Statistical Physics and Relativity (PHY-311)	
CO1	Show an analytic ability to solve problems relevant to statistical mechanics.
CO2	Can explain the procedures for deriving the relation between thermodynamic parameters such as pressure, temperature, entropy and heat capacity from the distribution functions.
CO3	Can apply the methods of statistical physics in other fields of physics and related fields
CO4	Demonstrate knowledge and broad understanding of Special Relativity
Modern and Nuclear Physics (PHY-312)	
CO1	Able to explain factors affecting photoelectric effect, explain experimental setup and apply its applications.
CO2	Understand the fundamentals of laser, laser systems, their characteristics and diversified applications including industry, medicine and defense.
CO3	Use this knowledge for applications of lasers in specific fields of their interest
CO4	Demonstrate the ability to critically evaluate the results in nuclear and particle physics
CO5	Identify the strengths and limitations of various nuclear models
B.Sc. II year (Semester-IV)	
Semiconductor and Digital Electronics (PHY-411)	
CO1	Basic semiconductor devices
CO2	Various transistor basing techniques and detailed study of Single stage amplifier
CO3	How amplifier can be converted into oscillator
CO4	Importance of Op-amp and its various circuits
CO5	Number systems, Logic gates and Boolean Algebra
Condensed Matter Physics (Phy-412)	
CO1	Expose students to basic concepts of condensed matter physics.
CO2	Recognize common crystal structure.
CO3	Explain the physics of different types of bond and bonding in solid
CO4	Describe electrical conduction in crystal.
CO5	Thermal Properties of solid
CO6	Detailed study of Hall effect.
B. Sc. III Year (Semester-V)	
Classical and Quantum Mechanics (PHY-301)	
CO1	Study about Classical Mechanics and Physics behind any object in day today life.
CO2	Introduction of Quantum Mechanics and Plank's Quantum Theory.
CO3	Understanding of dual nature of particle and matter waves.
CO4	Derive Schrodinger Equation and its applications.
Electrodynamics (PHY-302)	
CO1	Introduce about Electrostatics and Electrodynamics.
CO2	Learn about time varrieg field and its related equations.
CO3	Understand nature and parameters of electromagnetic waves.
CO4	Interaction of Electromagnetic waves with matter.

B. Sc. III Year (Semester-VI)	
Atomic and Molecular Physics and Laser (PHY-305)	
CO1	Review atomic structure and different atomic models.
CO2	Introduce Vector Atom Model, and its Applications.
CO3	Concept of molecular spectroscopy and different types of molecular spectra.
CO4	Introduce Laser, its types and applications.
Non-conventional energy sources and Optical fiber (PHY-306)	
CO1	Need of Non-conventional energy sources and its types and uses.
CO2	Study Solar energy and solar photovoltaic system.
CO3	Introduction and Classification of Optical fiber.
CO4	Overview of fiber cables and different fiber fabrication techniques.