Yashwantrao Chavan College of Science, Karad

Department of Physics

PHYSICS COURSE OUTCOMES

Academic Year 2024-2025

BSc. (PHYSICS)-III **Annexure-c**

BSc. III Paper IX DSC- E1 MATHEMATICAL PHYSICS & CLASSICAL ELECTRODYNAMIS	
By the end of this Course student should be able to know about:	
CO1:	Understand the orthogonal curvilinear co-ordinate system.
CO2:	Understand the different ways of solving first and second order differential equations.
CO3:	Understand charge dynamic particles and solve the Laplace and Poisson's equations.
CO4:	Understand the Ampares circuit law, displacement current and Biot-Savarats law.
CO:5	Understand and solve different medium Maxwells equations.
BSc. III Paper X DSC- E2 QUANTUM MECHANICS	
By the end of this Course student should be able to know about:	
CO1:	Understand different types of operators used in quantum mechanics and are able to use them to solve different problems.
CO2:	Understand and solve problems related to different types of potential like, Square-well, Bloch wave, Kroning-Penney square periodic potential.
CO3:	Understand and solve hydrogen atom problem
CO4:	Understand the angular momentum operators & their Eigen values
BSc. III Paper XI DSC- E3 CLASSICAL MECHANICS & CLASSICAL ELECTRODYNAMICS	
By the end of this Course student should be able to know about:	
CO1:	Students are able to understand and solve central force problems and understands the conservation of energy, linear momentum and angular Momentum in system
CO2:	Students are able to understand how to impose constraints on a system in order to simplify the methods used in solving physics problems.
CO3:	Students are able to understand the concept of special theory of relativity.

CO4:	Students are able to understand the concept of lagrangian and Hamiltonian transformations and are able to solve problems on lagrangian and Hamiltonian transformations.
BSc. III Paper XII DSC- E4 DIGITAL & ANALOG CIRCUITS & INTRUMENTATION	
By the end of this Course student should be able to know about:	
	CO1: Students are able to understand basic logic gates
	CO2: Students are able to understand transistor amplifier and CRO
	CO3: Students are able to understand timer and Operational amplifier
BSc. III Paper XIII DSC- F1 NUCLEAR & PARTICLE PHYSICS	
By the end of this Course student should be able to know about:	
CO1:	Students are able to understand the nuclear properties
CO2:	Students are able to analyse the single particle nuclear shell model and related phenomena
CO3:	Students are able to understand and apply selection rule of elementary particles and fission, fusion reactions
CO4:	Students are able to understand and apply the particle accelarators and nuclear detector to solve numerical problems.
BSc. III Paper XIV DSC- F2 SOLID STATE PHYSICS	
By the end of this Course student should be able to know about:	
CO1:	Understand different crystal structures, interaction with X-ray and also understands various properties about crystals
CO2:	Understand different types of crystal defects.
CO3:	Understand different properties of semiconducting and superconducting properties
CO4:	Understand theoretical background of dielectric and magnetic properties of material
BSc. III Paper XIV DSC- F3 ATOMIC & MOLECULAR PHYSICS & ASTROPHYSICS	
By the end of this Course student should be able to know about:	
CO1:	Understand and apply ll-coupling, ss-coupling, LS coupling in atomic spectra and able to calculate and their selection rules.
CO2:	Understand Zeeman effect and Paschen-Back of two electrons, Stark effect of hydrogen and Compton effect.
CO3:	Understand the concepts related to various types of astronomy along with various instruments to apply it for practical purposes.

CO4:	Students are able to understand structure of universe, Raman spectra and of stars and stellar evaluation
BSc. III Paper XIV DSC- F4 ENERGY STUDIES & MATERIAL SCIENCE	
By the end of this Course student should be able to know about:	
CO1:	Understand Study of Solar Wind and Interaction with Magnetized Planets
CO2:	Understand Magnetosphere in the solar system and Effects of Solar activities on Technological Earth Systems
CO3:	To understand bio energy and bio mass conversion
CO4:	Students are able to understand structure of universe, Raman spectra and of stars and stellar evaluation
CO5:	To understand nanotechnology