Estd. June 1964

"Education for Knowledge, Science and Culture."
– Shikshanmaharshi Dr. Bapuji Salunkhe
Shri. Swami VivekanandShikshanSanstha's

VIVEKANAND COLLEGE (Empowered Autonomous), KOLHAPUR

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UGC Recognition Under 2 F & 12(B) UGC Act 1956
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Department of Physics

B. Sc. Part III Semester V

Major

DSC-IX: Mathematical Physics

Course Code: DSC03PHY51

Course Outcomes: After the completion of the course the student will be able to

CO1: Understand Cartesian, spherical polar and cylindrical co-ordinate systems.

CO2: Understand Solve partial differential equations.

CO3: Understand applications of partial differential equations.

CO4: Solve problems based on mathematical Physics.

DSC-X: Quantum Mechanics

Course Code: DSC03PHY52

Course Outcomes: After the completion of the course the student will be able to

CO1: Define Concept of wave packet and Uncertainty principle.

CO2: Understand Schrödinger time dependent and time independent wave equations and their applications.

CO3: Understand applications of Operator in Quantum Mechanics

CO4: Understand the concept of Quantum Theory of hydrogen atom.

DSC-XI: Classical Mechanics

Course Code: DSC03PHY53

Course Outcomes: After the completion of the course the student will be able to

CO1: Define Concept of wave packet and Uncertainty principle.

CO2: Understand Schrödinger time dependent and time independent wave equations and their applications.

CO3: Understand applications of Operator in Quantum Mechanics

CO4: Understand the concept of Quantum Theory of hydrogen atom.

DSE-I: Atomic and Molecular Physics

Course Code: DSE03PHY51

Course Outcomes: After the completion of the course the student will be able to

CO1: Describe the vector atom model.

CO2: Know and understand the normal and anomalous Zeeman effect, Paschen Back effect and Stark effect as well as Raman Effect.

CO3: Understand and explain Molecular Spectra.

CO4: Get knowledge about atomic spectroscopy.

Or

DSE-I: Electrodynamics and Electromagnetic Waves

Course Code: DSE03PHY52

Course Outcomes: After the completion of the course the student will be able to

CO1: Understand charge particle dynamics and solve problems on Laplace's equation.

CO2: Solve problems on Maxwell's Equations.

CO3: Understand and explain Electromagnetic Waves.

CO4: Get knowledge about reflection and refraction of Electromagnetic Waves.

Minor

MIN-IX: Physics of Nanomaterials

Course Code: MIN03PHY51

Course Outcomes: After the completion of the course the student will be able to

CO1: Describe the requirements for a system to act as a laser.

CO2: Explain concept of Laser fundamentals, pumping mechanism pumping schemes.

CO3: Demonstrate potential applications of Lasers.

CO4: Design and development of different laser systems.

B. Sc. Part III Semester VI

Major

DSC-XII: Nuclear and Particle Physics

Course Code: DSC03PHY61

Course Outcomes: After the completion of the course the student will be able to

CO1: Explain about the Nucleus and learn concept of General Properties of nuclei.

CO2: Know about the detectors and accelerators.

CO3: Understand the concept of Nuclear Radiation Detectors.

CO4: Explain significance of various decays in the nuclear process.

DSC-XIII: Semiconductor Devices and Instrumentation

Course Code: DSC03PHY62

Course Outcomes: After the completion of the course the student will be able to

CO1: Learn about the CRO, IC's.

CO2: Understand the knowledge of digital electronics.

CO3: Know the devices made up of semiconductors.

CO4: Develop critical skill of electronic device fabrication.

DSC- XIV: Solid State Physics I

Course Code: DSC03PHY63

Course Outcomes: After the completion of the course the student will be able to

CO1: Define various types of solids depending on crystal structure.

CO2: Learn the concept of lattice vibration and thermal properties of solid.

CO3: Explain Magnetic Properties of Materials in solid.

CO4: Explain superconductivity phenomenon and its types..

DSE-II: Solid State Physics II

Course Code: DSE03PHY61

Course Outcomes: After the completion of the course the student will be able to

CO1: Know about free electron theory, band gap energy, Hall effect.

CO2: Know about dielectric properties of material.

CO3: Explain concept of X-ray diffraction.

CO4: Analyze different materials with the help of x-ray diffraction pattern.

Or

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DSE-II: Energy Studies Environmental Science

Course Code: DSE03PHY62

Course Outcomes: After the completion of the course the student will be able to

CO1: Demonstrate and understand the applied knowledge of energy.

CO2: Students will demonstrate a proficiency in solving problems in energy.

CO3: Understand the basic concepts of solar cell, solar PV panel, wind energy etc.

CO4: Demonstrate and understand the applied knowledge of Environment and demonstrate a proficiency in solving problems in Atmosphere and Energy.

Minor

MIN-X: LASER and its applications

Course Code: MIN03PHY61

Course Outcomes: After the completion of the course the student will be able to

CO1: Describe the requirements for a system to act as a laser.

CO2: Explain concept of Laser fundamentals, pumping mechanism pumping schemes.

CO3: Compare three level and four level Laser systems. Design and development of different laser systems.

CO4: Compare three level and four level Laser systems. Design and development of different laser systems.

VIVEKANAND COLLEGE KOLHAPUR (Empowered Autonomous) ESTD JUNE 1964

CHAIRMAN
BoS PHYSICS
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)