

Estd. June 1964

"Education for Knowledge, Science and Culture."

– Shikshanmaharshi Dr. Bapuji Salunkhe

Shri. Swami VivekanandShikshanSanstha's

**VIVEKANAND COLLEGE (Empowered
Autonomous), KOLHAPUR**

2130 E, Tarabai Park, Tal. Karveer, Dist. Kolhapur 416 003

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

Affiliated to Shivaji University, Kolhapur (M.S.)

Ph.: 0231-2658612,2658840,Resi.: 0231-2653962 Fax:0231-2658840

Website : www.vivekanandcollege.org E-mail : info@vivekanandcollege.org



Department of Physics

B. Sc. Part II Semester III

Major

DSC-V: Thermal Physics, Statistical Mechanics I

Course Code: DSC03PHY31

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

CO1: Demonstrate and understand the basic primary knowledge of Thermal Physics and Statistical Mechanics.

CO2: Get a proficiency in solving problems in Thermal Physics and Statistical Mechanics.

CO3: Understand the basic concepts of Kinetic Theory of Gases, Transport Phenomena, Thermometry, Thermodynamic Laws, Thermodynamic Process, Isothermal, Adiabatic Process, Entropy Etc.

CO4: Develop the critical skills in students to understand Thermal Physics, Statistical Mechanics etc.

DSC-VI: Waves and Oscillations

Course Code: DSC03PHY32

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

CO1: Demonstrate and understand the basic primary knowledge of waves and oscillations.

CO2: Get a proficiency in solving problems in waves and oscillations.

CO3: Understand the basic concepts of harmonic oscillations, oscillations of different frequencies, Lissajous figures, coupled oscillations, ultrasonic waves their applications, acoustic of building and reverberations

CO4: Develop the critical skill in students to understand waves and oscillations.



Minor

MIN-V Fundamentals of Astronomy

Course Code: MIN03PHY31

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

CO1: To understand the basic primary concept of ancient astronomical theories. To understand the knowledge of apparent luminosity of stars.

CO2: Students will demonstrate a proficiency in solving problems in Astronomy and Astrophysics

CO3: To understand the basic concepts of (I) Celestial objects, Celestial Sphere, Celestial Coordinates. (II) Terrestrial distances, concept of light years, distance of sun, moon and stars.

(III) Identification of stars, various constellations and Comets, Asteroids and Meteors.

CO4: To develop the critical skill in students to understand Astronomy.

MIN-VI Fundamentals of Astrophysics

Course Code: MIN03PHY32

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

CO1: understand the Nature of Light and message of the star light

CO2: Students will learn and demonstrate Basic Tools of Astronomers

CO3: To understand the basic concepts of Various Spectrums, evolutions of stars, H-R diagram. and Different theories describing origin of stars

CO4: To develop the critical skill in students to understand Astrophysics.



B. Sc. Part II Semester IV

Major

DSC-VII: Thermal Physics, Statistical Mechanics II

Course Code: DSC03PHY41

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

CO1: Demonstrate and understand the applied knowledge of Thermal Physics, Statistical Mechanics.

CO2 Students will demonstrate a proficiency in solving problems in Thermal Physics, Statistical Mechanics.

CO3: Understand the basic concepts of (I) Application of Maxwell's thermodynamic relations, cooling effect observed in case of gases, black body radiation, different radiation laws e.g. Wein's, Planck's, Rayleigh-jeans, Stefan -Boltzmann law. (II) Microstate, macro state, phase space, momentum space, thermodynamic probability, distribution of molecular speed.

CO4: Develop the critical skill in students to understand applied knowledge of Thermal Physics, Statistical Mechanics

DSC-VIII: Optics

Course Code: DSC03PHY42

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

CO1: Demonstrate and understand the applied knowledge of Optics.

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

CO3: Understand the basic concepts of (I) Geometrical optics, cardinal points, lens system, resolving power of various optical instrument (II) Detail concepts of polarization, interference, and diffraction.

CO4: Develop the critical skill in students to understand applied knowledge of Optics.



Minor

MIN-VII: Galaxies, Cosmology and Solar system

Course Code: MIN03PHY41

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

CO1: Understand the basic knowledge about galaxies Cosmology, solar system and cosmic electrodynamics.

CO2: Demonstrate a proficiency in solving problems in galaxies Cosmology, solar system and cosmic electrodynamics.

CO3: Understand Origin of the solar system and planets

CO4: Develop the critical skill in students to understand applied knowledge of Galaxies, Cosmology, solar system, and cosmic electrodynamics.

MIN-VIII: Cosmic Electrodynamics

Course Code: MIN03PHY42

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

CO1: Understand the basic knowledge about perfect fluids

CO2: Demonstrate Scalar electric potential (ϕ), Vector magnetic potential(A), Poisson's and Laplace's equation, Maxwell's equation in vacuum

CO3: Understand the concept of Magneto hydrodynamics

CO4: Develop the critical skill in solving problems in Equation of continuity - conservation of mass, Ideal fluid and Euler's equation of motion, Navier-Stokes equation for viscous fluid..



sslatte
CHAIRMAN
BOS PHYSICS
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)