



“Education for Knowledge, Science, and Culture”

- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur  
(Autonomous)



KOLHAPUR (AUTONOMOUS)

Content with Focus on Employability, Entrepreneurship, Skill Development  
(2018-19 to 2023-24)

Sr. No.	Name of the Course	Course code	Year of Introduction	Content with focus on employability	Content with focus on entrepreneurship	Content with focus on skill development
B.Sc. Physics (Newly Introduced between 2018-19 and 2020-21)						
1.	Mechanics	DSC1001A	2018-19	1. Vector algebra 2. Energy conservation 3. Satellite in circular orbit and applications, Geosynchronous orbits, Weightlessness, Basic idea of global positioning system (GPS).	translational and rotational motion, force and torque, Frames of reference - Inertial and Non-inertial frame with examples, Coordinate system-concept of Cartesian, Polar, Cylindrical, and Spherical. 3. Kinetic and Potential Energy, Total Energy and their time averages	1. Newton laws of motion and their proof, 2. Mechanics of particle 3. Newton's Law of Gravitation 4. Special theory of relativity
2.	Electricity And Magnetism	DSC1001B	2018-19	1. Electricity 2. Network Theorems 3. A.C. Circuits 4. Magnetism	1. Electricity 2. Network Theorems 3. A.C. Circuits 4. Magnetism	

*sslathe*  
**HEAD**  
DEPARTMENT OF PHYSICS  
VIVEKANAND COLLEGE, KOLHAPUR  
(EMPLOYMENT POWERED AUTONOMOUS)



				5. Electrostatics 6. 1. Electromagnetic Induction	5. Electrostatics 6. Electromagnetic Induction	
3.	Thermal Physics, Statistical Mechanics, waves and Optics Part I	DSC1001C	2019-20	1. Sound and Acoustics of buildings 2. Physics of low pressure	1. Thermometry: Concept of heat and temperature, temperature scales, principle of thermometry mercury thermometer, platinum resistance thermometer, thermocouple. (Principle, construction and theory) 2. Sound and Acoustics of buildings	Laws of Thermodynamics
4.	Thermal Physics, Statistical Mechanics, waves and Optics Part II	DSC1001D	2019-20	1. Theory of Radiation 2. Polarization of light	Thick lens, combination of lenses, Cardinal points of an optical system	1. Statistical Mechanics 2. Interference 3. Diffraction
5.	Fundamentals of Astronomy and Fundamentals of Astrophysics	DSC-1511C1	2019-20		Basic Tools of Astronomers	1. The Sky, Calendar and Celestial coordinates 2. The Stellar distances 3. Constellations, Comets, Asteroids, Meteors
6.	Galaxies, Cosmology, solar system and cosmic electrodynamics	DSC-1511C2	2019-20			The Solar system Cosmology
7.	Classical Mechanics and Quantum Mechanics	DSC1001E1	2020-21	Scattering of particles Operator in quantum mechanics	black body radiation, Photoelectric effect	Langrangian and Hamiltonian formulation
8.	Nuclear and Particle Physics and	DSC1001E2	2020-21	Nuclear models and Nuclear forces		Fourier series and integrals



DEPARTMENT OF PHYSICS  
VIVEKANAND COLLEGE, KOLHAPUR  
(EMPOWERED AUTONOMOUS)

sskhathe  
HEAD

	Mathematical Physics			3. Particle Accelerator		Complex analysis
9.	Semiconductor Devices and Instrumentation and Elements of Modern Physics	DSC1001F1	2020-21	Semiconductor Devices and Amplifiers Operational Amplifiers	IC 555 Pin diagram and its application as Astable & Monostable Multivibrator Instrumentations: Introduction to CRO Bipolar Junction transistors	
10.	Solid State Physics I and II	DSC1001F2	2020-21	Crystal structure		
<b>B.Sc. - Physics (Revised between 2021-22 and 2023-24)</b>						
11.	Mechanics	DSC1001A	2021-22	1. Vector algebra 2. Energy conservation 3. Satellite in circular orbit and applications, Geosynchronous orbits, Weightlessness, Basic idea of global positioning system (GPS).	translational and rotational motion, force and torque, Frames of reference - Inertial and Non-inertial frame with examples, Coordinate system-concept of Cartesian, Polar, Cylindrical, and Spherical. 3. Kinetic and Potential Energy, Total Energy and their time averages	1. Newton laws of motion and their proof, 2. Mechanics of particle 3. Newton's Law of Gravitation 4. Special theory of relativity
12.	Electricity And Magnetism	DSC1001B	2021-22	7. Electricity 8. Network Theorems 9. A.C. Circuits 10. Magnetism 11. Electrostatics 1. Electromagnetic Induction	5. Electricity 6. Network Theorems 7. A.C. Circuits 8. Magnetism 5. Electrostatics 6. Electromagnetic Induction	
13.	Thermal Physics, Statistical Mechanics-I and Waves, Oscillations and Acoustics	DSC1001C	2022-23	3. Sound and Acoustics of buildings Physics of low pressure	1. Thermometry: Concept of heat and temperature, temperature scales, principle of thermometry mercury thermometer, platinum	Laws of Thermodynamics

*sslathe*  
**HEAD**  
**DEPARTMENT OF PHYSICS**  
**VIVEKANAND COLLEGE, KOLHAPUR**  
(EMPOWERED AUTONOMOUS)





					resistance thermometer, thermocouple. (Principle, construction and theory) 2. Sound and Acoustics of buildings	
14.	Thermal Physics, Statistical Mechanics-II and Optics	DSC1001D	2022-23	1. Theory of Radiation 2. Polarization of light	Thick lens, combination of lenses, Cardinal points of an optical system	1. Statistical Mechanics 2. Interference 3. Diffraction
15.	Fundamentals of Astronomy and Fundamentals of Astrophysics	DSC-1511C1	2022-23		Basic Tools of Astronomers	1. The Sky, Calendar and Celestial coordinates 4. The Stellar distances Constellations, Comets, Asteroids, Meteors
16.	Galaxies, Cosmology, solar system and cosmic electrodynamics	DSC-1511C2	2022-23			The Solar system Cosmology
17.	Nuclear and Particle Physics and Mathematical Physics	DSC1001E1	2023-24	Scattering of particles Operator in quantum mechanics	black body radiation, Photoelectric effect	Langrangian and Hamiltonian formulation
18.	Quantum Mechanics and Solid-State Physics I	DSC1001E2	2023-24	Nuclear models and Nuclear forces 3. Particle Accelerator		Fourier series and integrals Complex analysis
19.	Semiconductor Devices and Instrumentation and Classical Mechanics	DSC1001F1	2023-24	Semiconductor Devices and Amplifiers Operational Amplifiers	IC 555 Pin diagram and its application as Astable & Monostable Multivibrator Instrumentations: Introduction to CRO Bipolar Junction transistors	
20.	Elements of Modern Physics and Solid-State Physics II	DSC1001F2	2023-24	Crystal structure Superconductivity	Magnetic properties of materials	



*sslatte*  
HEAD  
DEPARTMENT OF PHYSICS  
VIVEKANAND COLLEGE, KOLHAPUR  
(EMPOWERED AUTONOMOUS)