



“Education for Knowledge, Science, and Culture”
- Shikshanmaharshi Dr. Bapuji Salunkhe
Shri Swami Vivekanand Shikshan Sanstha's
Vivekanand College, Kolhapur
(Autonomous)



Content with Cross-cutting Issues
(2018-19 to 2023-24)

Sr. No.	Name of the Course	Course code	Year of Introduction	Professional Ethics	Gender	Human Values	Environment and sustainability	Sustainable development goals	NEP-2020 (truth (satya), righteous conduct (dharma), peace (shanti), Love (prem), nonviolence (ahimsa), scientific temper, citizenship values, lifeskills; lessons in seva/

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service and participation in Community service education

B.Sc. Physics (Newly Introduced between 2018-19 and 2020-21)

1.	Mechanics	DSC1001A	2018-19	1. Frames of reference - Inertial and Non-inertial frame with examples 2. Newton laws of motion and their proof			1. Energy conservation 2. Newton's Law of Gravitation 3. Kepler's Laws (statement only) 4. Elasticity	1. Gravitation 2. Special theory of relativity	
2.	Electricity And Magnetism	DSC1001B	2018-19				1. Magnetism 2. Electromagnetic Induction	1. Electromagnetic Induction	
3.	Thermal Physics, Statistical Mechanics, waves and Optics Part I	DSC1001C	2019-20				1. Kinetic Theory of Gases and thermometry 2. Laws of Thermodynamics		
4.	Thermal Physics, Statistical Mechanics, waves and Optics Part II	DSC1001D	2019-20					1. Sound and Acoustics of buildings 2. Physics of low pressure	



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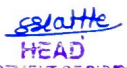
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5.	Fundamentals of Astronomy and Fundamentals of Astrophysics	DSC-1511C1	2019-20				1. History of Astronomy and Apparent Luminosity of Stars	1. The Sky , Calendar and Celestial coordinates 2. The Stellar distances 3. Constellations, Comets, Asteroids, Meteors
6.	Galaxies, Cosmology, solar system and cosmic electrodynamics	DSC-1511C2	2019-20				1. Basic Tools of Astronomers 2. The Nature of Light and Message of The Star Light	1. The Nature of Light and Message of The Star Light 2. Theories on origin of stars
7.	Classical Mechanics and Quantum Mechanics	DSC1001E1	2020-21				1. Scattering of particles 2. Rigid body motion 3. Applications of Schrodinger's steady state equation	1. Introduction to quantum mechanics
8.	Nuclear and Particle Physics and Mathematical Physics	DSC1001E2	2020-21				1. Basic static properties of nucleus 2. Nuclear models and nuclear forces 3. Radioactivity and nuclear reactions <i>S. S. Patil</i> HEAD	1. Particle Accelerator 2. Detectors 3. Orthogonal curvilinear co-ordinates 4. Fourier series and integrals

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9.	Semiconductor Devices and Instrumentation and Elements of Modern Physics	DSC1001F1	2020-21				1. Bipolar Junction transistors 2. Operational Amplifiers (Black Box approach)	1. Semiconductor Devices and Amplifiers 2. Timer IC 3. Atomic Physics 4. Molecular Physics 5. Laser Physics 6. Space science	
10.	Solid State Physics I and II	DSC1001F2	2020-21				1. Crystal structure 2. Lattice vibrations and thermal properties of solids	1. Magnetic properties of materials 2. Superconductivity	
B.Sc. Physics (Revised between 2021-22 and 2023-24)									
11.	Mechanics	DSC1001A	2021-22	1. Frames of reference - Inertial and Non-inertial frame with examples 2. Newton laws of motion and their proof			1. Energy conservation 2. Newton's Law of Gravitation 3. Kepler's Laws (statement only) 4. Elasticity	1. Gravitation 2. Special theory of relativity	
12.	Electricity And Magnetism	DSC1001B	2021-22				3. Magnetism Electromagnetic Induction	Electromagnetic Induction	
13.	Thermal Physics, Statistical Mechanics-I and	DSC1001C	2022-23				1. Kinetic Theory of Gases and thermometry		


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	Waves, Oscillations And Acoustics						2. Laws of Thermodynamics	
14.	Thermal Physics, Statistical Mechanics-II and Optics	DSC1001D	2022-23					1. Sound and Acoustics of buildings 2. Physics of low pressure
15.	Fundamentals of Astronomy and Fundamentals of Astrophysics	DSC-1511C1	2022-23				1. History of Astronomy and Apparent Luminosity of Stars	1. The Sky, Calendar and Celestial coordinates 2. The Stellar distances 3. Constellations, Comets, Asteroids, Meteors
16.	Galaxies, Cosmology, solar system and cosmic electrodynamics	DSC-1511C2	2022-23				1. Basic Tools of Astronomers 2. The Nature of Light and Message of The Star Light	1. The Nature of Light and Message of The Star Light 2. Theories on origin of stars
17.	Nuclear and Particle Physics and Mathematical Physics	DSC1001E1	2023-24				1. Basic static properties of nucleus 2. Nuclear models and Nuclear forces 3. Radioactivity and nuclear reactions	1. Particle Accelerator 2. Detectors 3. Orthogonal curvilinear co-ordinates 4. Fourier series and integrals

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18.	Quantum Mechanics and Solid State Physics I	DSC1001E2	2023-24				<ul style="list-style-type: none"> 1. Applications of Schrodinger's steady state equation 2. Crystal structure 3. Lattice vibrations and thermal properties of solids 	<ul style="list-style-type: none"> 1. Magnetic properties of materials 2. Superconductivity 3. Introduction to quantum mechanics 	
19.	Semiconductor Devices and Instrumentation and Classical Mechanics	DSC1001F1	2023-24				<ul style="list-style-type: none"> 1. Bipolar Junction transistors 2. Operational Amplifiers (Black Box approach) 3. Scattering of particles 4. Rigid body motion 	<ul style="list-style-type: none"> 1. Semiconductor Devices and Amplifiers 2. Timer IC 3. 	
20.	Elements of Modern Physics and Solid State Physics II	DSC1001F2	2023-24				<ul style="list-style-type: none"> 1. X-Ray Diffraction 2. Dielectric Properties of Materials 3. Elementary band theory 	<ul style="list-style-type: none"> 3. Atomic Physics 4. Molecular Physics 5. Laser Physics 6. Space science 	



S. S. Sathya
 HEAD
 DEPARTMENT OF PHYSICS
 VEDANTHA COLLEGE, KOLLAM
 (AN AFFILIATED AUTONOMOUS)